

Narrative and Social Collaboration in the integration of Games in the Curriculum

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Abstract

In the long-term development of the curriculum, there is an ongoing need to devise challenging and innovative assessments and activities as a way to motivate and engage students more fully with content that is critical to their learning outcomes. Higher Education, it is claimed, is now dealing with a generation of students for whom the playing of computer video games is second-nature. Many educators see this as an opportunity to make use of already available games and simulations for learning purposes. This paper begins by exploring the rationale and challenges of integrating Commercial Off-the-Shelf Games (COTS) into the curriculum. We then go on to describe our own efforts in selecting suitable computer games for Politics and International Studies. Our paper reflects on designing for context and the ways in which consideration of narrative and collaboration among students can influence the relevance of games. We argue that the implementation of games needs to be considered within the holistic framework of the student experience, rather than a narrow focussing on content.

Games in Learning

If we are to believe the literature, it might appear that as far as technology is concerned, the educational system is out of sync with the real and cultural aspects of the learners' world. Indeed recent research studies of the learning experiences of Higher Education students in the UK have highlighted changing student experience and expectations (Canole et al 2006; Sharpe and Benfield, 2005). Of particular interest is the increase in informal use of technology for communication among students and a move towards more interactive learning in which the distinction between play and learning often blurs. Canole et al (2006) observe an increasing expectation of slick learning materials that parallel the interactive and engaging gaming environments that young people have become accustomed to. But there is also pressure on teachers to 'keep up' with fast-moving trends in technology use. Recent research has drawn attention to the generational 'gap' between young people's usage of technologies and levels of digital literacy in general, and vis-à-vis teaching staff more specifically (Prensky, 2001, Oblinger, 2004). Games figure prominently in these discussions. There are those who advocate the inclusion of these new literacies in teaching and suggest that the educational system is out of sync with the way students live and with the way they prefer to learn (Prensky, 2001; Lankshear, Peters, Knobel and Bigum, 2007; Gee, 2003, 2007).

While there appear to be significant benefits of games and simulations as an informal social pastime, there is less tried and tested research of use in formal education; however, there are some, mainly schools-based exceptions (see for example, de Freitas, 2006; McFarlane, Sparrowhawk and Heald, 2002). Nevertheless, the idea of games as part of formal learning seems to be much more feasible than it once was (Kirriemuir and McFarlane, 2004; Mitchell and Savill-Smith, 2004; Facer et al, 2007). Rather than being consigned as a useful way to introduce learning 'by stealth' (Facer et al, 2006), there is a growing recognition of the role of 'play' in education (Arnseth, 2006; Rieber, 1996). To some extent this can be seen in the growing popularity of serious games for learning, which enable players to tackle social issues by immersing themselves in real world scenarios. Furthermore, there is a growing research interest in game design and theory, as well as the pedagogical aspects of gaming (for example, Squire et al, 2003; Woods, 2004).

Computer games and simulations are frequently viewed as a way to motivate students. It is generally accepted that simulations, in particular, can enable problem based and experiential learning 'by doing' (Kolb, 1984). Many of the key learning benefits listed by games' advocates such as James Gee (2003) are in fact what we usually associate with good educational practice: rapid feedback, self efficacy, scaffolding and problem solving skills. Gee (2007: 111), for example, argues that video games can allow players to "build simulations in their heads through which they can think about and imaginatively test out future actions and hypotheses".-... "and thereby experience deep expertise of the sort that so often eludes learners in schools". In learning about theoretical concepts this aspect of experiential learning is often missing.

Context: Rationale for Using Games

In common with many other disciplines, Politics has for many years been fertile ground for the development of educational simulations. Within our Politics and International Relations curriculum we have had positive experiences with using role play and simulations along the lines of those evident in the literature (Vincent and Shepherd 1998; Naidu and Linser 2000; Anderson, Ip and Linser, 2001). We believe that this kind of "concrete" experience can be a powerful, even transformative experience for students, in which they are able

to act out scenarios as a kind of apprenticeship within their domain of study (Lave and Wenger, 1991) The students need to apply abstract, theoretical concepts to practical problem-solving in real-world scenarios. Feedback from these exercises is always extremely positive and they achieve very effective learning. Simulations have also been good for the development of student self-confidence as well as academic and personal skills. These simulations are facilitated by technology for communication and group work. In this format the student takes on a role, usually working in groups and interacting with both peers and content in preparation for a specific diplomacy task, which is carried out face-to-face with facilitators present. Essential components of these simulations are a preparatory stage, interactive stage and then debriefing and reflection.

As an extension to this problem-based approach, we began contemplating what off-the shelf computer games might offer. What alternative or different perspectives could be generated compared with more traditional activities? Could we help encourage students to make links between theories and practice? We refer to games but we are particularly interested in computer-based simulation. A computer simulation is a way of “modelling a real-world situation on a computer”(de Freitas, 2006). Although some might view this as a distinct type of learning (or play) altogether, fundamentally what differentiates the experience of computer simulations from other types of media, such as film, is the interactivity and control required by the learner and the experiential dimension (Woods, 2004).

Challenges of Integrating COTS

Opting for a commercial off-the-shelf game may seem an obvious choice, particularly given that the time and expertise necessary to create engaging simulations is not usually available to most educational institutions. However, the differing aims and relative separateness of gaming companies and education has in the past hindered alignment of game goals and narratives with curriculum requirements. Although the Becta annual review 2007 recommends that games developers market their produces to schools in such a way that aims, learning objectives and curriculum relevance are explicit to teachers, the requirements of higher education are perhaps more specialised and varied.

The biggest challenge, then, is for teachers to align games, with their inbuilt aims, goals and narratives to the needs of the curriculum and desired learning outcomes. How teachers go about this endeavour clearly depends on context; factors such as the type of game being used, the rationale for using the game and student needs and characteristics all come into play. Researchers at *FutureLab* explored how perceptions of the game narrative influenced the way in which teachers opted to use games in their teaching (see Sandford et al, 2006; Facer et al, 2007). With reference to a games project in schools, they noted a tension between the game narrative and requirements of the curriculum; they conceptualised this tension in a quadrant. The ideal situation occurred when teachers judged a convergence of game narrative and learning objectives (in this case narrative refers to the route through the game as intended by designers). In cases where the narrative had less relevance, elements of the game might be used to fulfill different functions, such as practising generic skills or (foreign) language. In such instances, game usage tended to be peripheral to the curriculum and the game was not necessarily played as intended by designers. Teachers also tended to favour games based on ‘real-world models that appeared to integrate authentic narrative facts and story.

Narrative is understood and defined in many different ways and equally so in the world of game research and design (Juul, 1999, Jenkins, 2002). We understand narrative here in the broadest sense as encompassing the constellation of meaning that the learner makes before, on and after engagement with the game. Most games have some sort of embedded narrative context with which to engage players. Building on this is the narrative that emerges as the player interacts with the game. Narrative learning environments, according to Sacramento et al. (2005) encourage the learner to co-construct and participate in the narrative, engage in exploring and making sense of the environment and also to reflect on their interaction and learning experience. The learner makes tacit-knowledge explicit through reflection, collaboration and in discussion with others.

Narrative learning environments, of course, do not need technology. Dettori and Giannetti (2006: 4), point out that “even with more fully automated programs the outcomes are influenced by the mode of use: that is, the assignment given, its relation with the education aim and expected learning, the configuration made, the scaffolding possibly provided to learners.” A backstory, or narrative backdrop, can help to connect a range of subtasks in a meaningful way”.(op cit, p 5). The teacher’s role is therefore vital for scaffolding and facilitation. The pedagogical approach, rather than simply the affordances of the technology, enables the learner to make sense of the experience. In the area of Politics, the use of a computer-based simulation can enable learners, or players, to interact with an environment, creating their own story or narrative of that event(s). This narrative,

born from personal interaction in a dynamic scenario and the recall, reflection and sharing of that story can potentially enhance learning about theoretical concepts, by making them seem more relevant, realistic and memorable. It would be more difficult to achieve this through many ‘traditional’ ways of learning about real events.

We rarely consider the integration of technology in a holistic way (Boud and Prousser, 2002). The qualitative experience can be overlooked in trying to glean and justify the success of specific elements of the curricula. Other aspects of the holistic student experience, such as confidence building and making use of tacit knowledge may take on a lower priority. Building on their own and colleagues’ research, Boud and Prousser (2002) explain the complex relationship between the student experience and approaches to study. A learner’s perceptions are partly shaped “not on how the environment was designed, but how it is experienced” (2002). In other words, we need to consider feedback from students on success of an activity not just by its precise outcomes, but also on enjoyment and the perceived relevance to the overall experience and learning. Students need to have clear guidelines of the purpose of tasks and how these fit into the overall framework and, in particular, how they will be assessed. It is not sufficient for the game to be engaging and fun; it also needs to be seen to be relevant to learning in the subject domain in order to encourage students to achieve the desired learning outcomes.

Learning is not a one off process but a continuing cycle or spiral within which the learner may need to revisit concepts and to learn in different ways throughout the cycle. Looking at the different phases of learning about a body of knowledge, Mayes (2002) breaks down the stages of learning into conceptualisation, construction/contextualisation dialogue and reflection. The construction or conceptualisation stage enables the learner to situate themselves. We would expect experiential engagement with the game to form part of and contribute to the construction/conceptualisation stage of learning. In this way, technology is used to enhance specific parts of this cycle where it is most useful. We also anticipate that the narrative experience will prompt further dialogue and reflection.

Reflecting on the tension between learning objectives and game goals, we believe that the game goal does not have to align directly with the learning objectives, rather that the game must help students achieve learning objectives and potentially enhance their overall experience, given this indirect link between design and outcomes (Boud and Prousser, 2002). The game itself does not necessarily need to be assessed, but can contribute to portfolio evidence that accompanies an essay, learning logs, seminar presentation or discussion.

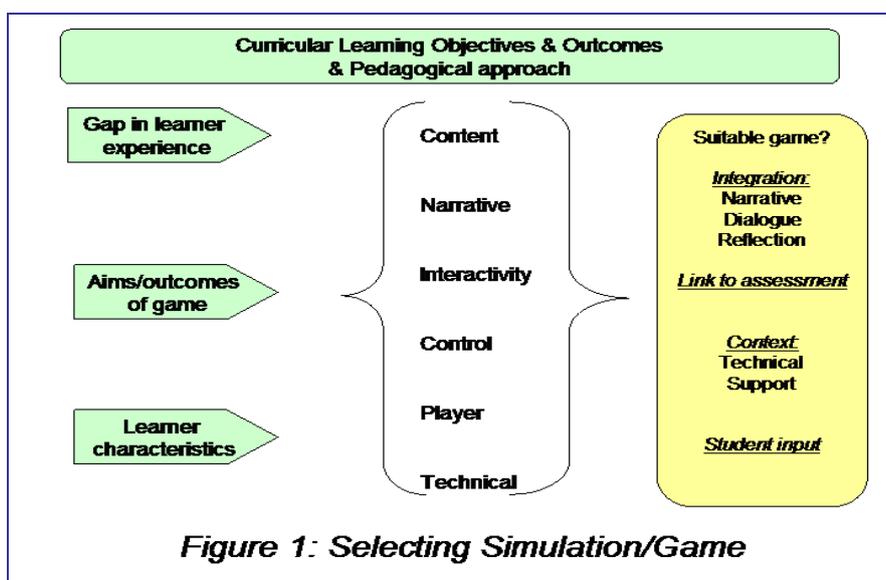


Figure 1: Selecting Simulation/Game

Selecting a Game for Our Needs

We started out with some idea of what type of game we were looking for. We wanted a game that had a narrative theme that enabled students to engage with a conflict resolution or diplomacy scenario. Technical issues were considered as a type of “hygiene” or baseline factor that needed to be of appropriate quality before any game would be selected; we wanted the students’ attention to be focused on the narrative and flow

of the game rather than on dealing with unnecessary technological difficulties. We also considered other factors regarding the game's ethical stance and implicit values. This can be particularly relevant where political issues are concerned, such as if one country is set up as the aggressor and the other as peacemaker, or when the embedded rules of the game require players to take actions which some might not consider ethical or even life-like. Although we agree that students need to develop their own skills in critically evaluating different media (Canole et al, 2006: 158), we did impose our own judgement at times in the selection of suitable games. The simulation we will discuss further is called PeaceMaker (ImpactGames, 2006-07).

There are relatively few templates or sets of guidelines to call upon for the implementation of digital games. We did, however, find a template created by de Freitas and Oliver (2006) a useful starting point. The template provides the main dimensions of learning and aspects to consider in integrating games or simulations. Yet, for planning purposes we decided to reverse this by writing out the baseline (or essential criteria) for our context in advance of identifying a suitable game (Table 1). We tested some of the games and then carried out a trial session with students, revisiting our plan of implementation at each stage (Fig. 1).

Table 1: Criteria and planning for integrating game	
Planning	Comments relevant to our case
Identify gap in learning/curricula	Lacking: experiential element to help students link theories and practice, particularly in diplomacy. A prompt to encourage discussion and debate on central themes in curricula; An activity to help increase motivation and engagement.
Identify aims and objectives for the game/simulation	To enable students to analyse the links between political theories and actual practice and constraints To have experiential attempt at diplomacy To encourage students to discuss relevant issues raised in game To enable students to reflect on relevant themes To critically reflect on the game itself.
Identify learner characteristics	At first, mainly first-year students in Politics and International Studies. Variety of learning styles and age ranges (probably different levels of literacy in games).
Selecting game: Requirements/issues Narrative Content Interactivity Control Player Technical	Narrative elements and themes relevant to curriculum, issues that would be raised in discussion (diplomacy, globalisation, pressure groups, negotiations etc) Embedded elements: check hidden assumptions, ethical stance. Different player roles possible? (assume role of a leader – first person experience or other possible additional roles). Interactivity: Learner control and ability to test different variables; Engagement with content: range of variables/themes/actors; realistic/factual, Engagement: sufficient options, control, challenge; method of reflection – included in experience of game/ afterwards; Technical: easy to navigate, good support, scenarios
Practical Context	Possible to do in timetabled session; time-frame for completion; possibility for follow up for students; possible to install on network, support for independent study; possibility to save individual's work; availability of computers; licence /ongoing costs.
Planning for integration	Not directly assessed: to be used for personal reflective log; Introduced as continuation of class discussion Demo and student preparation and motivation building in class Debriefing:
Trial/testing with	Would it be suitably engaging? Would students raise relevant point?

student participation	How did they critique the underlying assumptions of the game? How would they like to be supported? Was the game easy to use; relevant? What did they learn? What was their experience? Would they also like to use independently? How did they experience narrative goals?
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Template adapted from de Freitas and Oliver (2006)

PeaceMaker (ImpactGames, 2006)

PeaceMaker (ImpactGames, 2006) is a video simulation game. It describes itself as being ‘inspired by real events in the Israeli-Palestinian conflict’, rather than claiming to be an authentic representation. Its scenarios, or cut scenes, include ‘real’ television footage, a medium with which most students are familiar. The player assumes the role of one of the leaders and has the goal of bringing peace in the “region before your term in office ends.” Reward and feedback devices include points allocated for popularity with different stakeholders. There are three levels of game challenge to choose from: calm, tense or violent.

Advisors and clues are available to assist the player in decision-making. We felt that this game would enable students not only to relate these issues to the question of Israel/Gaza, but also to other conflicts and disputes. Peacemaker describes its aim as to raise issues and provoke thought.



Figure 2: Peacemaker (ImpactGames 2006-07)

Evaluating the Game with Students

We used PeaceMaker (ImpactGames, 2006) in a student workshop and held feedback sessions afterwards. The students had a variety of ages, levels of experience in gaming and knowledge of the subject area. All but one of the students worked in pairs with a computer each, one for the game and the other with the Wiki open and a discussion board. This allowed all students to record their strategies and feelings as they progressed. It also provided a record or ‘narrative’ which was personal to those players. This would be the launch for further discussion and reflection. The second player chose from a range of additional roles or identities, such as journalist or member or member of government. This enabled a larger number of perspectives to be experienced. Below we give a brief summary of student feedback and comments.

Awareness Raising: what type of themes did the students raise?

The students noted issues as they encountered them and shared these on a Wiki. We wondered if this would prove annoying, but students seemed enjoy this and comparing their strategies. They also recounted their experience afterwards. Typical notes and comments were as follows:

“we've been attacked and we r issuing a demanding speech to the world, Palestinians are happy with this action but Israelis r not impressed, we request a lifting of curfews and checkpoints which the Israeli president promises to consider.”

"On Nike's advice we added more checkpoints to give our people more security - popular move with them - up to 23 but Palestine has gone to -43 (does this mean they are about to launch nuclear missiles?"

"You soon realise the sensitivity of politics. Maintaining your popularity is extremely difficult. What initially appears to be logical choice may result in adverse responses and interruptions by continuing events, either local or global or as the impact of some negotiations. A fair reflection of real life – unpredictable!"

Most of all, we felt that the experience of participating as a 'player,' rather than being told about the political scenario, encouraged students to look at different perspectives. Each created a story around their participation, which formed a basis for shared collaboration. What was perhaps predictable was the way in which they associated the TV footage as believable, real and authentic; a point which prompted further discussion and critical evaluation of the underlying assumptions of the game.

"There is also a chance to watch real life events to get an idea of what the real feeling and atmosphere is like."

"The video clips provided visual and audio evidence of real events. The players get a real sense of the severity of this crisis."

With experience, I'm sure the player does however get a greater sense of possible responses to action choices, through which the player learns about the severity and sensitivity of the situation in this region."

Engagement: what did they feel about the experience?

From what we could observe students seemed to be fully engaged with the game for the full hour. They recorded incidents that were happening in their game and sought and shared tips with other students. There were, however, two students who remarked towards the end of the session that very little was happening and that it was getting boring." This was an indicator, perhaps that students would get most out of the game within a relatively short timeframe.

"However, in this particular game, it's very difficult as it is about keeping a balance, and most actions either swing one way or the other, making it frustrating to play. It takes time for things to happen."

"Every time there is a bomb hit the situation is always different - in most cases which is good. So it doesn't get boring."

"As an educational game we think it's definitely got potential. It's interesting to see the results of your actions without actually hurting people. I bet (politicians) wish they'd got this."

"I would like to see these sorts of simulations/games as part of the class. The traditional class needs to keep up with the times. In this way the lecturers could be at hand to advise if necessary, encouraging both lecturers and learners to incorporate ICT as part of teaching and learning."

"I realise that this is not a world crisis, but this type of software is nevertheless educational and entertaining, especially in a topic of your own interest."

Support: Were there any support or technical issues we had not considered?

The students encountered few technical difficulties and found the game extremely easy to use. One perceived disadvantage was the lack of a button to *go back* or *undo* an action; a function that most conceded was in fact made it appear more realistic.

All students mentioned the advisor support, video clips etc.

"step by step guidance on what the game involves, and also shows video clips, and the uses of each of the functions. It also gives a clear idea of how the game is scored"

"The advisor help is really good, it shows the pros and cons of each decision, but still leaves it up to you and clearly sets out the consequences of each decision - positive, negative or neutral."

"There is also a useful timeline which shows the different events from 1920-2000, which shows the history of the country. You are also able to go back and forth, to see the different events with the appropriate dates."

What Did We Learn from Feedback?

Dialogue with the students helped to clarify and determine how we could best integrate the game. For example, we had initially wondered whether students would prefer to use the game in spare time or for independent study. The students' responses changed our minds as almost all students said they would prefer

the game to be part of a lesson in which they could interact with the teacher also, if necessary. They could thereafter come back to the game independently. On the subject of whether to use this game as an introduction-type class, here again the students overwhelmingly felt that having a prior introduction to the back story made it more engaging.

Conclusion and Recommendations:

Context constraints and the nature of the game or simulation mean that there is not one magical formula for implementation. Practical, technical and institutional factors impacted our selection of games more than anticipated. It helped to walk through all technical issues beforehand. Fortunately, we were able to depend on good technical support and follow-up. On selecting games, we immediately discounted those options which did not coincide with our budget or practical context, such as the time needed for playing the game. For example, many Sims games require quite a long period of time to complete and, therefore, being able to save the game and complete at another time has a higher priority. The PeaceMaker (ImpactGames, 2006) that we considered in this paper is quite exploratory in nature and although students finished at different levels in the game, this did not impact on what we had intended to do and on the student experience. Students were still able to come back and discuss their experience and to raise many of the issues that we had hoped to highlight.

Developing additional roles and scenarios adds flexibility and enables a range of different perspectives to be brought to the table. Students can be involved in suggesting these roles and scenarios. In many ways, it was useful to incorporate processes that had worked well for us in previous simulations, such as including a preparatory and debriefing stage (Ip and Linser, 2001). Given that studies in secondary schools (e.g. Sandford et al, 2006) found that students' game skills could not be taken for granted, this may potentially be an issue for higher education students also. To facilitate motivation, a brief demonstration or walk through of the game on a large screen helps set the scene for engagement. The teacher's role in implementing games is indeed varied. In addition to becoming familiar with the technology itself, they need to act as facilitator, motivator, guide, and problem-solver among other things (Prensky, 2001).

Without actually assessing participation and interaction with the simulation, there are many ways to link the game with some aspect of assessment. We felt it important, however, to make the actual game-playing fun, as it is intended to be (Rieber, 1996; Prensky, 2001). Alternatively, some might feel that there is a risk of being over optimistic in 'acadamising' games that are designed to be about fun and play into formal learning contexts for which they are not designed (see Van Ecke, 2006). Similarly, there will be those who object to the way we have gone about investigating commercial games for learning; that is deciding on our criteria first and then searching for the most appropriate game. Many simulations, in business in particular, are designed for very specific customers and with very specific aims and goals in mind. If we had not found a suitable game, we would have dropped the idea. We go back to our overall rationale for considering games in the first place. Our motivation was about more than filling a gap in the curriculum; we also sought to introduce innovative and motivating activities to enhance the overall student experience and to act as a basis of reflection and relevant discussion.

We mentioned previously that we had used face-to-face and online simulations in the past. We believe that the integration of an 'off the shelf' game to aspects of learning can enable students to experience the complexities of a particular context, in a different way. The scenarios and variety of roles that are given to students enabled each individual student to experience the context, interaction and scenario. By enabling students to log their experience and reflections, they could potentially enhance the range of perspectives and build on this in collaboration with others. This paper has related our relatively small-scale examination of computer games and simulations for learning, which may aid others in their exploration. The availability and range of gaming options are continually growing (for example, multiplayer role-playing games, mobile and virtual reality games) and, like many other educators, we intend to explore some of these with our students in the future.

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- Peacemaker is developed by Impact Games © (www.impactgames.com) LLC 2006 -2007. Pennsylvania USA <http://www.peacemakergame.com/game.php>

We would like to acknowledge the very lively students who helped us trial games and simulations