

The Magic Circle - Game Design Principles and Online Role-play Simulations

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Abstract: The paper is an exploration of the 'magic' inherent in role-play simulations in educational contexts. It compares and analyses a range of on-line role-play simulations used in higher education in a variety of disciplines highlighting the structural design and objectives of such role-play games, and in particular, it scrutinizes the game design principles that have been employed. As part of the new generation of educational technologies the use of such role-play is steadily increasing but very few guidelines exist as to how to translate educational goals and desired outcomes into game objectives and processes. Our paper provides a few such guidelines born out of the research and experience of creating such games.

Introduction: ICT and Education

Innovative approaches to teaching are proliferating at academic and training institutions as the impact of information and communication Technology (ICT) becomes widespread. One approach, that of experiential learning, is particularly interesting because of the transformation ICT impose on such experience. The virtual environments made possible by ICT have enabled communicative interactions that not only transcend certain spatial and temporal limitations but have also enabled the creation of new types of spaces and potentialities attractive to business, education and the entertainment industries.

For educational endeavors, the potentialities of the new spaces for learning had a number of effects, including changes to the role of the teacher and the nature of authority (Linsler, Waniganayake & Wilkes 2004), the de-centering of the learning process and the separation of the learning space from the institutional space that provides learning spaces. (Linsler 2004a) While teaching is still about the transference of knowledge, understanding and skills, the de-centering of the learning process, has meant that teachers have sought, and are still seeking, new pedagogic designs that would leverage the power of the new ICT and with which they can confront their shifting role in education.

One particular pedagogical strategy within the experiential learning approach, the use of games, role-plays and simulations, has long been used both institutionally in formal learning (Akilli 2007) as well as in informal acquisition of social knowledge understanding and skills. Informally, from childhood to adulthood we learn about our society through various forms of games and role-plays. Indeed from a socio-psychological perspective, the conceptual understanding of social roles, their acquisition and maintenance is a critical theoretical component in understanding how we become who we are and the relations we form with the world around us. (Lynch 2007, Turner 1990, Biddle 1986, Winnicott 1980, Holland 1977, Giddens 1979, Goffman 1969, Mead 1934)

However, where as modern commercial games, role-plays and simulations using ICT are rapidly becoming the entertainment industry's most lucrative product, educational use of these seems to considerably lag behind. There may be many reasons for this, both theoretical and practical, including the failure of educators to understand the structural constraints of the different media used in the games, virtual worlds and simulations they choose to use as instructional tools. (Ip 2006, Linsler & Ip 2005)

Fortugno and Zimmerman argue that the reason for the failure of games to take off as educational tools is to a large extent a failure of educators to understand game design and of game designers' failure to understand pedagogical

concerns. (Fortugno & Zimmerman 2005) Similarly in his conclusion Akilli points out that while instructional designers need to pay more attention to game design principles, there are in fact very few guidelines to be followed. (Akilli 2007) The rest of the paper explores precisely those game design principles to which educators need to pay more attention in designing role-play simulations with pedagogical intent. The paper thus focuses on those critical game design features highlighting their implications for role-play-simulations aimed at achieving learning objectives.

Games, Simulations and Role-plays: Artificial Systems and Rules

Salen and Zimmerman define games as artificial systems in which players engage in conflict, defined by rules and resulting in quantifiable outcomes. Four salient features emerge from this definition: artificiality, conflict, rules, and quantifiable outcomes. They argue that while games and role-plays share the key features that define them as games, they are different in one critical respect. Whereas games have *a priori* quantifiable outcomes, role-plays do not necessarily have such outcomes. Thus they maintain that role-plays seem to be a limiting case to their definition. They do however concede that it depends on the framework from which role-plays are understood. (Salen & Zimmerman 2003)

They argue that what games and role-plays share is that they are artificial systems, requiring players to interact according to *a priori* rules in a contest or in conflict. As artificial systems, so the argument goes, they thus set both temporal and spatial boundaries between 'real life' and the artificial life of the game. In crossing the boundary from the real world to the game players thus find themselves in what Salen and Zimmerman call the Magic Circle. They insist that there is 'in fact' a distinct boundary between the artificial world of the game and the "real life" contexts that it intersects. Crossing the boundary means one is within the frame that communicates 'this is play', a space that is separate from that of the real world. (Salen & Zimmerman 2003)

The notion that games are artificial systems is particularly interesting as it also closely ties up with the idea of simulation, which in our perspective is also further associated with educational role-plays. A 'simulation' in our definition is an artificially dynamic and closed systemic environment in which a particular set of conditions is created according to *a priori* rules in order to study or experience something that exists or could exist in reality. In computer simulations (and indeed simulation type games) the *a priori* rules are predefined algorithms that determine the output or outcomes of the system.

For pedagogical purposes a role-play is rather closer to a simulation as defined above. The reason is that to the extent that the acquisition of real world knowledge, understanding and skills by students are pedagogical objectives, a role-play designed with this purpose in mind is an attempt to simulate processes, issues and conditions that exist in the real world. A role-play simulation game in our definition is thus a dynamic artificial environment in which human 'agents' interact by playing roles with semi-defined characteristics, objectives and relations (social rules) to one another and within a specified scenario (set of conditions).

Given this understanding, the first major issue is that in role-plays, if not in games generally, the boundary between the space of the real and the space of playing is more porous than Salen and Zimmerman suggest in relation to games. In games generally, players take on the roles inherent in the game – black or white in Chess, goalkeeper, center forward in Soccer, chief or emperor in Civilization, commanders, medics and soldiers in America's Army Special Forces. The rules of the game specify precisely what each role in the game may or may not do, what powers they possess, and how to deploy their powers – they are completely within the game even if they model real world roles. Whereas in face-to-face games the only link to the real world is the meta-understanding of what it means to follow a rule, in computer games this is already embedded as predefined algorithms that enable the types of actions made available to players. The Magic Circle players experience in entering a game can thus be conceptualized as separable from reality.

In contradistinction in order to play a role in a role-play simulation, a player must ask himself/herself two questions. Firstly 'how should this role act?' i.e. what are the characteristics of the role that would lead the role to act in one-way rather than another in the specified context? This raises a second, perhaps more implicit question for the player,

'how would 'I' have acted given a similar context?' i.e. what do 'I' know about these characteristics and how are they different from mine? Would I act as the role would act under a similar context?

In the cognitive and emotive resonance between these two questions of identity and action, between imagination and experience, the boundaries of play and reality become less distinct. (Linser 2004a) Players have to insert their knowledge and understanding of the real world into the game. And it is precisely this, in the reflective process set up between the real and imaginary, that makes role-plays such an effective tool for pedagogy. When players enter the magic circle in a role-play they insert this understanding of the real and the reflective process of identity into the space of the game. This enables the integration of the experience in the game to impact on understanding of the real. It is where the magic happens - the space where the "ah ha I get it!!!" experience of realization blooms.

While a sharp distinction between the 'real world' and 'the world of playing a game' may serve the purpose of entertainment, it is problematic for education in which knowledge and understanding of, and skills for, 'real life' is hopefully what pedagogical purposes are attempting to achieve.

The second major issue in applying game design principles to role-plays with pedagogical intent is that the rules for a role-play have two different senses that set them apart from games in general. Salen and Zimmerman argue that rules of games specify constraints to action that must be adhered to in order for the game to remain a game. In contradistinction, the rules that govern role-plays, to the extent that they simulate real world processes, have both social rules that may or may not be followed and game rules that specify what cannot be done and what must be done to achieve outcomes and objectives within the game.

These two related issues, the porous boundary of role-play simulation games and the double sense of rules mean that the Magic Circle to which players enter in educational role-plays is not the same as the one they enter in games. It retains more of the reality to which it pertains than games generally do. By the same token it also means that in designing role-plays for education not only is it problematic to simply import game design principles, but also these principles have to be implemented differently.

Analysis and Comparison of Online RPS

In what follows a series role-play simulations are compared on the basis of how their design places players in a position to meet learning objectives. These RPSs were all used in higher educational institutions in different disciplines. Due to space limitation only immediately relevant aspects of the design are described.

Case 1. At the University of Melbourne Political Science department a series of RPS were created and run with undergraduate students over a period of 10 years. (Vincent & Shepherd 1998, Linser & Naidu 1999, Linser & Ip 2001, Linser 2004b) The pedagogical objective of these was to motivate students to acquire knowledge of conditions, processes and states of affairs in various international relations arenas; to understand the issues and problems faced by leaders; and to acquire some research skills. The game objective or outcomes however were open ended and described as 'pursuing the interests of your roles as defined by the role profile' – role profiles were a set task that each role had to complete before entering the Magic circle – a right of initiation. Each role had to decide what interests and objectives they should pursue. Once entered each participant could read all profiles (apart from the hidden agendas which only the moderators could read.) Almost all roles were real world leaders, not fictional ones, and were played by groups of 2-4 students collaborating on research of the role, deciding what the role should do in responding to emerging circumstances and what the role should initiate given the role profile.

Initially, having entered the Magic circle roles had to respond to a scenario written by the moderators on the basis of real events. Once underway roles initiated and responded to events created by other roles according to how they understood the role would act under these conditions. The only rules defined were: a. that all violent action had to pass moderator approval; b. that all events in the real world during the RPS could only be entered as historical precedents to action in the simulation if they did not contradict already given events that occurred in the simulation; c. that within the Magic circle (i.e. during play) all roles had to remain in character though they could develop new behaviours; and d. that a minimum of 2-5 messages a day, 5 days a week, had to be entered by the role.

Designing the game to meet pedagogical objectives meant that roles were specific personalities taken from the real world; that the scenarios that provided the context were also real with a few fictional elements; that the objectives were open-ended objectives; and that the rules of interaction (social rules) were open ended as they are in the real world. In this sense these RPS were more simulation than game.

Two other political science simulations, “Venezuela” at the Institute of Social Studies (ISS) in The Hague (Hintjens 2005) and “Afghanistan” at Wichita State University (Shaw & Mendeloff 2007), both run a number of times, are worth noting. The “Venezuela” simulations at the ISS had a very similar design structure to the ones run at the University of Melbourne, with open-ended game objectives, very few rules and reality-based roles. On the other hand the “Afghanistan” simulation in Wichita was designed with the very specific game objective of developing a policy document for Afghan reconstruction. The rules of the game were also very specific, ordering the activity of the roles; specifying the exact steps to be taken; and an exact timetable of when they should be taken. Finally all the roles were functional but fictional e.g. Adviser to the President, but the name did not correspond to any such real advisor to the real Afghan President. The focus was on developing policy from certain functional perspectives rather than allowing roles to develop characteristics that might influence how such a policy might be framed and developed as in The Hague’s RPS and at Melbourne.

Case 2. At the Saskatchewan Institute of Applied Science and Technology (SIAST) in Regina, Canada a RPS for nursing students was developed and run four times. (Nelson & Blenkin 2007) The pedagogical objective was to support skill development in managing difficult behaviors strongly influenced by medical conditions that lead to such behaviors. The corresponding game objective was to appropriately respond to a scenario in which a patient’s death caused instability in a fictional care facility. Students played either patient roles – that initiated and exhibited such behaviors – or staff roles that responded and collaborated in addressing the initial scenario and subsequent behaviors of ‘patient’ roles. Unlike the Political Science RPS at Melbourne and The Hague, and closer to the Afghanistan RPS, the roles were completely fictional and functional (e.g. 34 year old nurse with history of substance abuse or 40 year old male psychotic patient.) Roles had personal names and students were instructed to create fictional characteristics, the rules stated that the medical conditions of roles had to be played based on research. Unlike the political science RPS the rules were more stringent as to the limits of what the role could do and groups of roles (patients, staff) were given certain tasks that had to be completed at a specified time.

Case 3. A role-play simulation based on a novel, *The Scarlet Letter*, run twice at Caldwell community College in Hickory North Carolina for an English Literature course (Noggle 2005), was designed with the pedagogical objective of familiarizing students with the novel and the core values and mores of Puritan society in the period in which the novel was set. Students played the characters in the novel. The game objective was to find out whether given these Puritan values and mores, an alternative ending to the novel could be created and if so what would be the consequences. The rules and roles of the game were defined and constrained on the basis of the novel’s setting but remained open as to how these were to be interpreted and played out.

Case 4. At TAFE Gippsland in Australia a role-play simulation was designed for a staff development project with the dual purpose of acquainting teachers with the idea of RPS and with enabling understanding of sexual harassment issues in higher educational institutions. In this RPS the roles were functional, though each role was also given specific characteristics like in the nursing RPS. But unlike the nursing RPS and closer to the Political Science RPS, the rules were open-ended allowing players to choose how they would act out their part. However given the scenario of a higher educational environment it was expected that the players would use their knowledge of university life and follow the appropriate social rules and procedures. So while fairly flexible in terms of how roles should be played, the constraints as to what was appropriate relied on the social rules imported from reality.

Case 5. A number of similar role-plays for students in an Instructional Technology course at Appalachian State University in North Carolina were designed with the pedagogical objective of understanding current practices in distance education from an evolutionary perspective and familiarizing students with the technology of online role-play simulations. Through the eyes of their characters as college committee members given the responsibility of authoring a "vision" for distance education at their institution, students inquired into and argued for and against their college's future engagement in distance education. Unlike the Political Science RPS where the game objectives were different for the different roles, the game objective was to research and draft a document about implementing new

technology in a higher education institution. All the roles were functional but their characteristics mostly defined by players.

Case 6. At Headmark University college in Norway a role-play was designed for a course in International Crisis Management Communication and Collaboration. The learning objectives included providing students with “tools” to better understand cross-cultural and intercultural issues that may give rise to miscommunication and/or misunderstanding. It was also intended to provide participants with awareness and experience of problems and communication breakdowns using English rather than their mother tongue. The simulation was thus designed to enable an exploration of typical issues and problems that arise in intercultural collaboration. (Linsler, Ree-Lindstad & Vold, 2007). While some roles were fictional like the Nursing simulations at SIAST, other roles were reality-based as in the political science simulations at Melbourne and ISS in The Hague. Unlike all the simulations above, the design of the simulation included two different scenarios, an earthquake in Turkey and a Refugee Camp on the Sudanese/Eritrean border, and each participant played 2 different roles corresponding to each of the scenarios. The game objective in both scenarios was to manage the crisis depicted in these scenarios. Some roles were given specific instructions to create communication misunderstandings so that other roles would need to find ways to overcome these in order to meet the pedagogical objective of the role-play. Like the political science simulations, very few rules were specifically defined allowing the social rules to become the main focus. Indeed it was these social rules that were the designed target that participants had to understand given the pedagogical objective.

Case 7. Finally a series of RPS developed and implemented at the US Army War College were designed with the pedagogical objective of exercising high-level officers in strategic thinking. Like the Instructional Technology and Afghan simulations, it had very specific game objectives of developing policy from certain pre-defined functional and organizational perspectives. In some of the Army RPS, roles did not even have names but were known by their organizational position e.g. Intelligence Liaison Officer. Further like the Afghan RPS an exact time-table of activity and rules for interaction was provided leaving very little room for creative maneuvering as the political science simulations at Melbourne or the Sexual Harassment simulations had done.

Principles of Design for RPS: What Worked and What Did Not?

Nearly all role-plays described above included questionnaires designed to get student feedback on their experience after the end of play. The overall perception by students was that role-plays were useful for learning. However, when analyzing the level of engagement in the different role-plays by comparing the quantity and quality of interaction in the different designs four salient issues corresponding to the main design features that comprise a game become evident.

Firstly, role-plays that had overt conflict between roles tended to be much more engaging to players. All the political science role-plays apart from “Afghanistan” highlighted the conflict between roles. Conflict was also a feature built into the relations between roles in the Sexual Harassment, The Scarlet Letter and Crisis Management role-plays. The “Afghanistan” role-play where the functionality of roles and cooperation to draft a proposal was highlighted resulted in less enthusiasm and engagement. Similarly, the Instructional Design simulations at Appalachian State University and the strategic thinking RPS at the US Army War College where the game objective was to cooperate in order to draft a document also resulted in less engagement and enthusiasm.

Designing conflict into role-play simulations, as in games, seems to raise the level of engagement by participants.

The Nursing simulation at SIAST however had no overt conflict built into the role-play yet students still remained highly engaged. One explanation could be that playing clients and nurses intrinsically sets up adversity, as the first group creatively engages the second in manifesting behavioral problems that the second group has to creatively manage. But there may be other factors involved both in design and administration of a role-play that also contribute to greater engagement.

Secondly, it became clear that greater flexibility in game objectives, i.e. Limiting quantifiable outcomes of the game; was associated with higher levels of engagement and motivation. This seems to go against the idea that games require quantifiable outcomes if one allows role-play simulations to count as games. Creating a document as

a game objective (a quantifiable outcome i.e. 1 document) in the Afghan, Instructional design, and strategic thinking RPS were all associated with lower levels of engagement as opposed to the rest where open ended game objectives were designed into the role-plays, including the Nursing RPS. In this latter RPS, greater flexibility in game objectives may be a contributing factor to the levels of engagement despite the absence of overt conflict.

Designing open-ended game-objectives, where participants decide the objectives they pursue in role-play simulations seems the better design strategy to elicit engagement.

Thirdly, the more stringent the game rules that were imposed the less students felt engaged but on the other hand when the RPS design required attending to the social rules of the game as game rules, the greater the sense of creative engagement. All the political science RPS, apart from the Afghanistan RPS, were designed with very few game rules governing interaction. Participants negotiated role relationships according to how they perceived their role should act. This was also true in varying degrees in the Scarlet Letter, Sexual Harassment, Crisis Management, and Nursing RPS. The Instructional Design, Afghanistan and strategic thinking RPS had more formal game rules imposing constraints on the interaction between roles and how game objectives were to be achieved.

Allowing social rules to act as game rules governing interaction to achieve game objectives thus seems to be associated with more creative engagement. Conversely the association to such engagement is weaker in designing formal game rules governing the interaction.

Fourthly, the greater link of roles to real world personalities, rather than functional or fictional personalities the more research and engagement that took place. The political science and Venezuela role-plays all used real world personalities for almost all roles as opposed to all others role-plays discussed above. Both Conflict Management and the Scarlet Letter role-plays used a very small number of real world personalities as roles, but like the Nursing, Sexual Harassment and Instructional Design RPS, the greater majority were fictional characters. But in these, all roles were given some information about each of the roles upon which to construct the role's personality. The strategic thinking RPS based the roles on functions within an organization – so that in some of these RPS the roles did not even have personal names but something like "Intelligence Liaison DD" – seemed the least engaging.

The issue of designing roles as real world personalities goes to the heart of the porous boundary between the real world and game world of role-plays. Ultimately it is an issue of identity. The experience of playing chess, perhaps hones strategic skills, but very little if anything about the White role. Playing Civilization, which bases the role of chief on historical leaders, or a medic in America's Army, moves the emphasis closer to reality but like Chess the emphasis is on honing skills within the game – the world outside the game bears little impact on the game. Playing a real world personality in role-plays not only refers the players to their knowledge, understanding, skills and experience in reality but more significantly to a reflexive process between their identity as a role and their real world identity. The Magic Circle into which they enter in a role-play simulation game is magic because they are both inside and outside the game examining and acting on their 'other' self.

It should be emphasized that every role-play simulation will have the principles of artificiality, conflict, and rules embedded in the design. The issue is not that they are irrelevant but that they need to be applied differently in role-play simulation games with pedagogical intent. The mix between formal game rules and social rules, between the artificial and the real and between pre-determined game objectives and quantifiable outcomes on the one hand, and flexible game objectives that are decided by players as roles, on the other, needs to lean towards the second of these oppositions for role-plays to be more engaging.

In summary, highly structured rules that are essential to games seem have been somewhat counter-productive in role-plays; on the other hand, leaving participants to identify and/or define the social rules of the interaction in the game exhibited greater appropriate engagement. Moreover, while quantifiable outcomes and specific objectives that have to be reached, seem to lower engagement in role-plays, open-ended outcomes are associated with higher engagement. Finally, the more functional and abstract were the roles as opposed to roles based in reality, the less enthusiasm for the playing.

Concluding Remarks

While there is no panacea method to developing game objectives and process from pre-defined pedagogical goals, in role plays clear relations to the realities being studied seems to motivate students more. Perhaps because the more obvious the relations to reality, the more students feel they are engaged in a productive enterprise of learning. Yet it is clear that like all games, role-play simulations are artificial and there is a boundary between the real and the game. However, the Magic Circle that requires players to traverse the boundary between reality and the game, to be both inside and outside the game simultaneously, enables players to do and say things they would not otherwise do or say, to be both self and 'other', and consequently to integrate the experience to meet pedagogical objectives in an engaging manner.

For educational purposes the Magic Circle in role-play simulations is magic precisely because of the inter-penetrability of reality and game boundaries. While clear separation of the two is perhaps what makes games an appealing endeavor and commodity in the commercial and entertainment industries reproducing it in designing role-play games with pedagogical intent seems counterproductive.

For educational purposes to maintain engagement and motivation the design needs to be more attuned to the learning opportunities inherent in the inter-penetrability of reality and game boundaries – in other words the more research into roles and social rules a player conducts vis-à-vis their role and the more they insert these into the role play, the more engaging it becomes and the more opportunities that open up to learn about the real from playing a role.

Perhaps role-play simulations are not games, but they certainly feel like they are upon entering the magic-circle.

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