

## The Zen Of Being An Effective 'Mod' In Online Role-Play Simulations

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### Introduction

Master Yoshi says: "12 spokes make a wheel but it is the space between them which makes it useful. A window is made of a frame but it is the empty space which makes it useful." Master Yoshi was a Zen master in the 13th century. What he teaches us is that 'emptiness' is useful. In the context of educational tools it leads us to an awareness of the utility of the space opened up within the structure of tools. It is precisely this which explains why Role Play Simulations (RPS) are so useful. It is because the structure frames a unique space for participants to interact and create a learning experience for themselves.

How does one manage an educational design whose "emptiness" is the key to its utility? This paper will discuss some of the necessary skills and strategies for effective moderation of Role-play simulations. We will first briefly outline the pedagogical structure of RPS highlighting the sort of spaces that are created for this collaborative and experiential learning strategy. We will then discuss the role and strategies that make moderators effective in managing the spaces through which the learning activity takes place in RPS by contrasting them with moderation in Asynchronous conferencing (AC). Ultimately we want moderators to facilitate the "ah-ha, so this is what its like" type of experience for participants - the "Sartori effect".

### The pedagogical structure of role-play simulations

Linser, Naidu, & Ip, (1999); Linser, (1999) and Ip (in press) have outlined the pedagogical structure of RPS as a teaching strategy that includes Dynamic goal-based learning, Role-play, and Web-based communication and collaboration.

"Dynamic goal-based learning" is a strategy that leverages the experience and motivation of participants trying to reach a goal, in the service of pedagogical objectives. The idea is that in attempting to achieve game goals, especially ones set by themselves, in a dynamic and reflexive environment, i.e. one which continuously emerges from the impact of their own actions; participants will be motivated to evaluate, learn and exercise the necessary skills required to be successful in order to reach these goals and in the process acquire the knowledge and understanding needed.

Taking on a 'persona' in a role-play simulation involving multiple roles whose objectives may be in opposition or in alignment with the 'persona's' own goals, creates such a dynamic and reflexive context for participants. Given that all roles must respond 'in character' to an initial scenario, and further, must respond to the actions of other roles, a reflexive and dynamic process emerges that continuously provides participants with the impact of their own actions on the context. Thus, they must acquire more information, reflect and then adjust their further actions in order to reach their goals, or indeed perhaps even alter or abandon them and set new ones.

The communicative interaction of such a role-play simulation in an online environment of the World Wide Web, has the further advantage of providing a space that can be used in both synchronous and asynchronous modes. Moreover it provides a space where the resources needed for acquiring the necessary knowledge for playing the game, can be made available 'just in time' when they are needed. And this includes moderators who become a resource in the service of game goals through which they fulfil pedagogical objectives. If moderators are also sensitive and committed, our RPS environment (supported by the Fablusi™ engine) creates a 'safe' and supportive space for participants to learn from their own experience.

The upshot of playing the game, of attempting to implement different strategies and seeing their outcomes, is that participants learn the subject's content, acquire skills and learn to understand what is involved in the process. And this is precisely the pedagogical aim of RPS (for more info on the pedagogical foundations of RPS see Linser & Naidu, 1999.)

The uniqueness of this pedagogical structure is that it separates the learning space, where participants learn from their experience, from the institutional and organizational environments which provide the resources for learning. And this has significant consequences for the moderators or educational facilitators as we shall shortly see.

The structure of RPS thus creates a flexible space for participants to fill with their own goals, actions and results. However, from a pedagogical point of view, it is by no way certain that participants would actually do this effectively to meet the pedagogical objectives. Thus a mediating agency must be established to ensure the pedagogical effectiveness of RPS. In other words, for the 'emptiness' of the space to be filled effectively by the content supplied by participants, the mediating services of a moderator becomes indispensable and it is to this which we will now turn.

### **The role and 'Sartori Effect' of the Moderator (MOD) in RPS**

In general, the role of MOD is to generate the "Sartori effect". Within RPS moderators are a multidimensional resource. In a way that computer agents have become popular as a help facility, so moderators are an asynchronous on-line resource - except they are of course not computer generated but rather real-life people.

Forsyth (1990, p. 112) classifies the moderator's roles as two basic functions: task roles and socio-emotional roles. In more detail and focusing on computer conferencing, Mason (1991) identifies three role functions that AC moderators must provide. These role functions are:

\*Social role\*: create a friendly, social environment for learning, especially encourage participation using a friendly, personal tone.

\*Teaching role\*: facilitate learning by focussing discussions on crucial points, asking questions and probing responses to encourage students to expand and build on comments. (Mason, 1991)

\*Organizational role\*: set the agenda and objectives of the discussion, the timetable, procedural rules and decision-making norms.

Because RPSs have a 'simulated' social structure, i.e., the relationship between roles is set by the subject's content and simulation design; moderators do not have a social role in the same sense as they do in AC as identified by Mason above. In RPS moderators occupy an out-side social position linked to their institutional, organizational and teaching roles and an inside position as a 'resource' rather than actor.

To the extent that a social role is identifiable for moderators in RPS it is at a meta-simulation level. At this level participants and moderators are usually part of institutional arrangements that are beyond the activities within RPS. Though the meta-simulation context is not unimportant in evaluating the effectiveness of pedagogy, it is beyond the scope of this paper. For our purpose, it will be sufficient to focus on the two other functions identified by Mason above. However it is important to remember that the pedagogical objectives are set from this meta-simulation context.

In general, effective teaching through AC relies on a learner-centred approach that rests on principles of collaborative learning and which utilize discussion as the medium for learning (Eastmond, 1992; Florini, 1989; Harasim, 1989; Kaye, 1989). Effective discussion requires that everyone involved, instructor and students alike, share in both the teaching and the learning. All participants assume responsibility for furthering discussion, although students may require special preparation and clear guidelines to participate effectively (Rohfeld & Hiemstra, 1995). Both AC and classroom discussion are cooperative endeavours, usually rational and purposeful, sometimes systematic and often creative. They require participation, involve formal or informal leadership or moderation (Hyman, 1980, pp. 13-17) and are used by their participants as venues for formal and informal learning (Collins & Berge, 1996).

In an online asynchronous conference, the teaching role of moderators is to facilitate discussion by avoiding the pitfalls of asynchronous conferencing such as:

- Lack of participation
- Lack of focus
- Monopolization of a topic
- Lack of anything greater than surface discourse
- Deferring to previous authors by adding nothing more than 'I agree'
- Personal verbal attacks directed at individual group members
- Use of inappropriate language and online behaviour
- Instigation of arguments between participants
- Early dry-out of discussion ideas

Effective learning in RPS also relies on a learner-centred approach resting on principles of collaborative, co-operative, problem-based experiential learning. Indeed many of the features that are required for effective learning using

discussions, whether on-line or in the classroom, are also required for effective learning in RPS. However, because the learning environment is separated from the institutional-organizational environment, almost all the pitfalls to effective learning in AC and classroom discussions are either eliminated altogether or become much easier to tackle by the moderator in RPS. Consequently the role of moderators significantly shifts to focus on identifying learning opportunities rather than overcoming pitfalls.

Lack of participation in AC and classroom discussions, for example, occurs for many reasons, some participants may feel insecure or are shy, or it may be tied to the monopolization of a topic by some participants. Consequently, this requires moderators to find strategies to entice participants, by encouraging them, and by finding ways that will make participants feel more secure to air their views and perspectives in public. In RPS however, given that participants use a public 'persona' in an on-line environment which hides their real identity, lack of participation is rarely a problem. Indeed, often, it is the opposite which becomes problematic for moderators. Participants can become very prolific and restraint on their output may become necessary so that the moderators, given their assessment function, can evaluate the material. But in RPS this can be achieved by a simple rule limiting the output quantity, e.g. participants may be required to send a minimum of 2 sim-mails a day and a maximum of 5.

Similarly, problems like lack of focus, monopolization of a topic, early dry-out of discussion are also marginal in RPS. The fact that participants start out with a 'persona' that already has particular goals, ensures that each participant has a focus and that no participant can monopolize topics. The dynamic and reflexive nature of the exercise ensures that early dry-out also remain highly unlikely. Personal attacks and arguments between participants, or inappropriate language can occur, but they rarely do because participants using a 'persona' have their personal identity protected and therefore are less likely to feel personally threatened.

In a similar manner, much of the organizational function that requires moderators to act in AC and classroom discussion, is also minimized. Because the pedagogical objectives are the background to the 'role goals', moderators do not need to continuously keep the pedagogical objectives in the forefront of the learning space. Much of what happens in classrooms and in AC is 'maintenance work' - to keep the group going along the track outlined by these objectives. Thus moderators have to set the agenda and then continuously monitor and bring the discussion back to avenues that are congruent with that agenda.

In an RPS, there is no one agenda to which everybody must submit. Rather, each participant determines the agenda for his/her role. Moderators need to ensure that the public and private agenda put forward by the role are indeed consistent with the role specific information provided by the subject matter expert who designed the RPS. But in an exercise where the agenda itself is the issue of contention between many roles, moderators will focus more on the way agenda items are raised and pursued.

To understand the difference between the role of moderators in AC and classroom discussions on the one hand and RPS moderators on the other, and to understand what RPS moderators actually do, we have presented the functions of the moderator as a number of slightly overlapping dimensions. It is in the conjunction of these dimensions and the enhancement they give each other that they constitute an on-line resource to participants of RPS.

\*Guardian angel\*: Given that MOD can read most communications between roles in the RPS, MOD monitors players' moves and must maintain an overview of the general direction of the game progression. As a subject 'content expert' the role of the guardian angel is to help participants with the content, if and only if, help is requested, or the role is clearly not 'playing in character' and may suffer in the 'other world' of assessment (re: the meta-simulation institutional-organizational environment;). While guardian angels should communicate a sense of support to the roles, it is important that roles do not become over dependent on them to advance the game progression.

"Duty of care" is a notion commonly mentioned and practiced by teachers of younger children. Some role-play simulations are psychologically intense and it is important that the MOD understands the risk of mixing the virtual world with real world. Thus guardian angels must be vigilante in detecting those who are in distress - due to previous unpleasant similar experience, or time pressures, or overwork, or simply feeling a bit lost - and be sensitive to whatever is the problem. But at the same time must be able to separate issues that are personal i.e. domain of participant, from issues that are part of the RPS experience. On-line environments can be very frustrating at times and the role of the guardian angel is to soften the impact. Finally, guardian angels have a very important role in debriefing participants at the conclusion of an RPS. One way of fulfilling this role is to explicitly articulate for participants the intended relationship between the real and the simulated, letting participants reflect on the extent to which their RPS experience fulfilled this intention.

\*Manipulative devil\*: Given that roles are trying to achieve goals, one tactic to create learning opportunities is to set up obstacles on the path to these goals. These problems can be inserted into RPS in a number of ways 1. in the initial scenario 2. as a specific instruction to the role - indeed a role could be created as a problem 3. during the game inserting a new element creating difficulty or complication or 4. leaking information to the role's opponent. RPS based on Fablusi™ does not have any random element. If there is a natural disaster occurring in a game, it is NOT a random act. It is either set up by the simulation creator or inserted into the game play by the MOD or permitted by a MOD upon request from a role. As such, the MOD is a manipulative devil.

\*Resident Teaching/Learning Resource\*: Perhaps the most crucial of the MOD various dimensions is the need to recognise learning opportunities and transform them into potential learning. Thus when help is sought or a request for a specific action is made, a learning opportunity opens. MOD should keep an open mind and allow even actions which seem unlikely to occur. Content experts are notorious for having strong opinions in the field of their expertise but experts are also often wrong. In order to be a teaching resource rather than a teacher-expert, options should be presented to queries rather than solutions, highlighting relevant theory or theories and resources. A 'Resource' should promote reflection and consideration of alternatives. When suggesting alternatives (always plural!), it is important to ensure that participants take responsibility for the role's action - participants should own the actions they take. They must not feel that they're taking a particular course of action because that's what the MOD thinks should happen (unless of course the MOD is being a manipulative devil at the time). On the other hand offering relevant facts for consideration that seem to be unknown to the participant is also useful.

\*Improvising storyteller\*: Sometimes unforeseen game situations will require additional scenario modification or extensions to the facts. The MOD becomes a storyteller and creates extension to the original design to cater for the situation.

\*An administrator\*: Though this dimension refers mostly to technical issues like set up of the simulation, assignment of roles, making sure the web site is working, responding to "how-do-I-do-this" problems, set up tasks for roles and 'reverses task' if roles have wrongly submitted the task, delete wrong or duplicated messages in sim-conferences, etc., it can also include evaluation for assessment and adjudicating disputes arising from the simulation between participants - i.e. when it slips from being a dispute between roles and becomes a dispute between students. Also in this dimension if there are rules about actions that can only be taken after approval from a MOD, the administrator must judge and provide or decline requests based on the learning objectives set in the RPS. Enforcing "participation obligation" may also be classified as an administrator's task, though as suggested earlier this does not happen often.

Overall, these dimensions together provide students with an online resource that aims to provide a 'just in time' assistance. The function of the MOD is not to teach, but to be a learning resource.

One last very important point, MODs in RPSs are only human, and the temptation to play a role in the simulation is usually very strong. Often this leads to too much intervention in the proceedings, leading participants to rely on the MODs. The ideal MOD however, intervenes little, and lets participants work it out for themselves. The Zen of being an effective moderator has to do with empty spaces he/she leaves after intervention - the more empty space that can be effectively filled by participants, the more they will learn for themselves, and the more likely they are to exclaim "ahh ... ahh"

### **MOD in the Life Cycle of Role-playing**

Like any work group, learners in RPS need to rapidly establish a work pattern to engage with the game and the experience building exercise. Understanding the life cycle of RPS can help understand how the various functions of the MOD enter into the sequence of RPS.

#### **Pre-play**

This is a stage before RPS actually begins. Depending on whether participants have used RPS before, the duration of this stage is dependent on the time it takes for the MOD to build a trust relationship with the players, remove the technical anxieties, role selection and explanation of the game rules by the MOD. MOD is mostly the administrator at this pre-play stage.

\*Trust relationship\*: Since role-playing is dramatically and emotionally charged environment, it is important for players to have certain trust in the MOD in order to participate effectively in the role-playing. MOD should, at this stage, explain to the players that the MOD will be acting like a guardian angel and would provide help whenever

necessary. However, equally important is to stress the fact that the players need to be responsible for the actions of the roles and since it is a simulation, such actions can be taken in the view of generating experience for learning purposes.

\*Technical anxieties\*: Potential players need to overcome technical anxieties such as establishing Internet connectivity, accessing the web site and understanding the available features. Demonstration of a small RPS usually overcomes these technical anxieties quickly. Another requirement which should be communicated clearly to potential players is the requirement of "participation obligation". This seeks the players' commitment to this obligation throughout the intended period when RPS will be running (including the debriefing stage). It is better to have frequent short connections than long but infrequent connections. RPS is 'quasi-asynchronous'. Players can participate at any time of the day (asynchronous). In order to maintain the richness of the experience, all stakeholders' views should be explored. This requires the game to advance in steps with full participation of all roles (quasi part). If one role fails to participate, other roles may be affected and hence the need for "participation obligation".

\*Role selection\*: Potential players, after agreeing to the participation obligation, need to submit preferred roles based on minimum role information. Typically, the role information will only include role names and possibly a job title. At this stage, it is important that the private agenda given to the role be kept secret so that meaningful communication and interaction among roles can occur during the development stage.

\*Game rules\*: While technically Fablusi™ will support sim-mail with an unlimited number of recipients, it would be a good idea to establish a maximum number of recipients in each sim-mail. In the real world, a role cannot broadcast to the whole world. When a role would like to take a "violent" action which may limit the ability of other roles to participate, the permission of the MOD is required. Game rules like these are NOT enforced by the underlying software and depend on the MOD to make them clear to the roles. These game rules must be explained to players at this stage.

### **Early Stage**

Time spent in this stage can be very rewarding later. It requires a fair amount of research and writing for the learners. But it is at this stage that MOD the administrator begins to recede and the 'Resident Teaching/Learning Resource' dimension begins to take shape. Both the Guardian Angel and the Manipulative Devil dimensions of MOD also begin to appear.

\*Understand role\*: Simulation designers (subject matter experts) deliberately create only sketchy descriptions of the roles. This is to promote the ownership of the role by allowing learners/participants to embellish the character, research the stakeholder viewpoints and establish operational public and private agenda. At this stage, learners should be told their assigned roles and begin research and write up of a 'role profile' for other roles to read. Through out this phase MODs can expect participants' queries about sources of information.

A fixed date for posting the role profile will establish the quasi-asynchronous nature. This date may match the date when the MOD releases the initial kick-start episode of the scenario. The public agenda of the role can be published as part of the role profile, however, the MOD may request the players to send the private agenda as sim-mail to the MOD. There is a significant learning opportunity at this stage and the MOD may choose to make the write up of the role profile part of the assessment.

\*Identifying issues\*: As part of their task in researching and writing their role profile, participants need to identify some of the issues and formulate a strategy to achieve and advance the roles' public and private agenda. Understanding of issues may include researching, reading cases, sharing experiences both within and outside the simulation. A lot of the "traditional" learning functions occur at this stage. However the strength of RPS as a learning environment is the ability of the roles to execute (practice) the strategy and try to advance the roles' agenda in a safe environment in the next stage.

\*Understand scenario & engage\*: In the second part of this stage, roles need to have a compelling reason to act. The MOD releases the kick-start episode of the scenario. One design objective of the kick-start episode is to create the compelling reasons for sufficient number of roles to act immediately. As roles are engaged, the MOD needs to start monitoring the sim-mail and sim-conference regularly and exercise the various MOD duties.

### **Development**

This is the key stage of the experience building process. For an RPS lasting for 4 weeks, this stage may start at the beginning of the second week and will last for about 2 weeks. The duration should depend on the complexity of the issue and the frequency of connection in the agreed participation obligation.

\*Pursuit agenda\*: Roles interact in order to pursue their public and private agenda using the various communication channels available in RPS. They will be using tactics such as forming alliances, explaining positions, threats or exercising legal rights. MOD is now the guardian angel, the manipulative devil, the 'resident teaching/learning resource', improvising storyteller and the administrator. The focus is to allow roles to experience and have time to consider every move.

These are some of the most powerful features of RPS as a learning environment: building experience while having time to reflect on each move. Case-based learning provides ample opportunities to understand issues, and discuss and debate possible strategies. RPS integrates the unique opportunity for roles to execute the strategy and advance the roles' agenda. Learners are motivated to study various cases and use them as guides or examples (or counter examples). They also have ample time to research best approaches to tackle the issues or advance the roles' agenda.

### **Final Stage: Debriefing, Assessment & Evaluation**

Disengage: After playing a character for two weeks or more, participants will be thinking and acting as a role in the RPS. One of the key objectives of this stage is to disengage and help the players re-engage in the real world. We cannot stress the importance of disengagement. It is very important that participants realise the difference between the simulated world and the real world. By analysing and reflecting on the experience, participants are now in a position in which the light of "Sartori" will begin to turn on.

To help achieve this, the MOD can suggest that individual participants reflect on their experience from three points of view: a) from their own personal point of view: how well did they do in playing the role? what problems did they have in playing the role? what could they have done better to play that role? b) from the point of view of the 'roles': to what extent was the role able to reach some or any of its original objectives? what difficulties did the role encounter in attempting to achieve their goal? What aspects of the strategy to reach their objectives would the role consider changing in light of the overall results? And c) from the point of view of an 'objective observer': this could be from a theoretical point of view, in the case where understanding theory is part of the pedagogical objectives - to what extent are different theoretical models able to explain the events in the simulation and reality? What biases emerged in the simulation or/and in reality? or from a student point of view - what was learned from the simulation about reality if anything?

### **Conclusion**

Moderating RPS is itself a wondrous experience, on wild and exciting tour through an amazing array of ingenuity and imaginative strategies developed by participants to reach their goals. In the process MODs not only serve and guard the pedagogical objectives, as a resource related to their teaching roles, but are themselves challenged, requiring them to respond in imaginative ways in an indescribable simulated world. Often MODs, who have usually already played in simulations, find it very hard to stay above the fray. They too want to be in the midst of it. However, tempting as it may be, a good moderator has to harness the equanimity of a Zen monk. Sometime in the face of the most outrageous, and improbable actions taken by roles, MOD has to remain silent. At other times in the face of over conservative actions MOD themselves have to invent stories that would make contributors to the Arabian Nights proud.

To moderate an RPS means transforming oneself into a multidimensional resource. If the structure of RPS provides an empty space for participant to try out their suspicions, biases, hopes and fears, if it helps to test the extent to which they can apply their incomplete knowledge and understanding and in the process discover new realities both about themselves and the world, the role of the moderator is to intervene between the 'emptiness' which is there and the pedagogical objectives that are not there. MODs mediate between the safe anonymous space of RPS with its chaotic agendas and goals and the institutional-organization environment of 'traditional' teaching. The most effective way of doing this is for the MOD to be everywhere within the simulation but the presence should be no heavier than the touch of a feather. There and not there, inside and out, pointing to different possibilities yet deciding as few as is pedagogically possible. The greatest satisfaction that MOD could have is to hear participants exclaim: "aha.. ha.. now I got it!"

Now we got it!

### **References**

Berge, Z. L., & Collins, M. P. (Eds.). (1995). Computer-mediated communication and the on-line classroom in Distance Education. Cresskill, NJ: Hampton Press.

- Brown, M. (1998, 27-30 September,). Teacher for a New Age: The Myths and realities of the Global Classroom. Paper presented at the Apple University Consortium Conference, University of Melbourne.
- Collins, M. P., & Berge, Z. L. (1996, October 24-26, 1996.). Mailing lists as a venue for adult learning. Paper presented at the Eastern Adult, Continuing and Distance Education Research Conference, Pennsylvania State University.
- Durham, M. (1998, 27-30 September,). Working at Virtual Records - a simulated workplace. Paper presented at the Apple University Consortium Conference, University of Melbourne.
- Eastmond, D. V. (1992). Effective facilitation of computer conferencing. *Continuing Higher Education Review*, 56, 155-167.
- Florini, B. (1989). Teaching styles and technology. In E. R. Hayes (Ed.), *Effective teaching styles (New Directions for Adult and Continuing Education (Vol. 43, pp. 41-53)*. San Francisco: Jossey-Bass.
- Gamson, W. (1966). *SimSoc: Participant's Manual with Selected Readings*. New York: The Free Press.
- Harasim, L. (1989). Online education: A new domain. In R. Mason & A. Kaye (Eds.), *Mindweave: Communication, computers, and distance education (pp. 5-62)*. Oxford, UK: Pergamon Press.
- Hedberg, J., & Harper, B. (1998, 27-30 September,). Supporting flexible thinking with interactive multimedia. Paper presented at the Apple University Consortium Conference, University of Melbourne.
- Hiltz, S. R. (1984). *Online Community*. New Jersey: Ablex Publishing Corporation.
- Hyman, R. T. (1980). *Improving Discussion Leadership*. New York: Teachers College Press.
- Ip, A. (1989). *A Study of the Potential of Electronic Bulletin Boards as Perceived by Teachers*. Unpublished M.Ed, The University of Hong Kong, Hong Kong.
- Ip, A., & Linser, R. (1999). *Web-based Simulation Generator: Empowering Teaching and Learning Media in Political Science*. [HREF3]
- Ip, A., Linser, R., & Naidu, S. (2001, 22nd - 25th April 2001). *Simulated Worlds: Rapid Generation of Web-Based Role-Play*. Paper presented at the AusWeb01, Novotel Opal Cove Resort, Coffs Harbour.
- Ip, A., & Naidu, S. (2001). Experienced-Based Pedagogical Designs for eLearning. *Education Technology*, XLI(5), 53-58.
- Jonassen, D. H., & Reeves, T. C. (1996). Learning with technology: Using computers as cognitive tools. In D. H. Jonassen (Ed.), *Handbook of research for educational communications and technology (pp. 693-719)*. New York: Macmillan.
- Kaye, A. (1989). Computer-mediated communication and distance education. In R. Mason & A. Kaye (Eds.), *Mindweave: Communication, computers, and distance education (pp. 3-21)*. Oxford, UK: Pergamon Press.
- Linser, R., Naidu, S., & Ip, A. (1999). *Pedagogical Foundations of Web-based Simulations in Political Science*. Paper presented at the ASCILITE, University of Wollongong, Wollongong, NSW, Australia.
- Linser, R. N., S. (1999). *Web-based Simulations As Teaching And Learning Media In Political Science*. Paper presented at the AusWeb99,.
- Loughlin, T. W. (1993). *VIRTUAL RELATIONSHIPS: THE SOLITARY WORLD OF CMC*. *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*, 1(1).
- Price, B. A. (1998, 27-30 September). From global scalable distance teaching to high Bandwidth classroom resources in local schools. Paper presented at the Apple University Consortium Conference,, University of Melbourne.

Rieber, L. (1996). Seriously Considering Play: Designing Interactive Learning Environments Based on the Blending of Microworlds, Simulations and Games. *Education and Training Resource and Development*, 44, 42-58.

Rohfeld, R. W., & Hiemstra, R. (1995). Moderating Discussions in the Electronic Classroom. In Z. L. Berge & M. P. Collins (Eds.), *Computer-mediated communication and the on-line classroom in Distance Education*. . Cresskill, NJ: Hampton Press.

Schank, R. C., & Cleary, C. (1995). *Engines for Education*, Hillsdale, NJ: Lawrence Erlbaum Associates Publishers,.

Vincent, A., & Shepherd, J. (1998). Experiences in Teaching Middle East Politics via Internet-based Role-Play Simulations. *Journal of Interactive Media in Education*,(11).

Wills, S., Ip, A., & Bunnett, A. (2000). Complementary Pedagogical Strategies for Online Design. Paper presented at the 17th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education, Coffs Harbour NSW Australia.

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