Email Games

Marie Jasinski
MindMedia
Douglas Mawson Institute of TAFE, AUSTRALIA
mariejas@dmi.tafe.sa.edu.au

Sivasailam Thiagarajan
Instructional Design Centre
Workshops by Thiagi, Inc., USA
thiagi@thiagi.com

Abstract

During the past three years, we have designed, facilitated, and evaluated a series of Web-based games on a range of topics with over 1000 practitioners mostly within the vocational and corporate training sectors in Australia and the USA. These games incorporate research-based prescriptions from instructional design, game design, and online learning and facilitate dialogue between participants. Our observations and feedback from the players have led us to reinforce what we suspected: that unglamorous, low-tech but highly functional communications technology like email, bulletin boards, and chat can be used as primary tools to promote and encourage collaborative interactive learning online. This article documents our observations and experiences in the use of email games.

Keywords
Email games, Online learning, Instructional design, Game design, Interactivity, Motivation, Voluntary participation, Content generation

Introduction

A recent report on online training for corporate education (Dalton, 2000) identifies three basic types of strategies: HTML-formatted courses, live presentations and Web conferencing. Of these, 79 percent of the clients report they use HTML content, 33 percent use live presentations and 26 percent use conferencing strategies. The same group also identifies their biggest online learning challenge as "uncompelling, static content" associated with the HTML-content that is ironically used by the majority.

Based on our belief that adult learners learn most effectively through people-to-people collaboration and construction of knowledge, we have been designing, facilitating, evaluating and researching a special type of Web conferencing strategy called "email games" (Jasinski & Thiagarajan, 2000). While we have been working independently in e-learning for several years, our collaborative work is now in its third year. This paper presents our conceptual framework, interim results and future plans.

Conceptual Framework

Email games are primarily containers for facilitating dialogue about different problems and issues and for encouraging the construction and sharing of new knowledge, understanding, perspectives, and insights. Three sample email games are described in the next section. Our current collection of 15 email games have all been structured on the basis of prescriptions from different disciplines including communication theory, complexity theory, cognitive sciences, and social psychology. Different sources for prescriptions used in the construction of these games are briefly outlined below under the three topics of instructional design, game design, and online learning.

Instructional Design Elements

The core of email game templates contains real-world problems and issues that are salient to the players. Using a constructivist approach (Knuth & Cunningham, 1993), an email game engages participants in interactive discussion of these problems and issues. Participants bring a variety of diverse experiences and previous knowledge to the task and the facilitator selects and implements appropriate structures for different rounds of the game that encourage the construction and sharing of new perspectives, knowledge, understandings and insights as suggested by Zhu (1998). Different email game templates are designed to facilitate different types of learning outcomes as classified by Gagne (1985). The design, development, formative evaluation and revision of the email games are carried out according to the Instructional Systems Design (ISD) model in its recent versions (Tessmer & Wedman, 1992 and Merrill, 1990).

Game Design Elements

All email game templates include the four critical attributes of a game (Thiagarajan, 1996): *conflict* (which prevents the easy achievement of a specific goal), *control* (rules for taking turns and scoring points), *closure* (special rules that specify how the game ends and who wins) and *contrivance* (an element of playfulness). While there are several types of computer games for training (Prensky, in press), these games tend to represent the categories of fact-recall tell-and-test variety at the one end and elaborate open-ended simulations on the other (Gredler, 1986). Email games do not belong to either of these conventional categories but to a newer knowledge-management approach labelled as structured sharing (Thiagarajan, 1998).

Online Learning Elements

A growing body of literature on computer-based and online learning approaches has contributed to the design of our email game templates. Of special relevance to our work has been recent studies in the area of electronic collaboration (Bonk & King, 1998). For example, a recent study on Web-based case conferencing (Bonk, Malikowski, Angeli, & East, 1998) has provided us data on the tendency of gradual reductions in the quantity and significant improvement in the quality of postings during later rounds of iterative email discussions. Other findings from content researchers (Kirkley, Savery, & Grabner-Hogan, 1998) related to email's democratising effects, differences between text-based communication and verbal communication, scaffolding and support for learning, types of feedback, and behavior patterns of lurkers, have identified likely problems to be prevented and potentials to be utilised. Current literature on online learning has also provided us with validated models and coding systems (Hara, Bonk, & Angeli, 1998) for the content analysis of computer-mediated communication.

Email Games

Most people promote *interactivity* as the most valuable feature of online learning. Focused on the screen, hand on the mouse button, and leaning forward, learners are poised for interaction! There are many different classes of interaction (Gayeski, 1980) ranging all the way from clicking the mouse button to continue or to choose among options, to receiving personalised feedback and branching based on the computer creating a real-time model of the user. A closer look at many instructional offerings online reveals that much of this interactivity merely connects the learner with the content. We do not believe this is enough. Many adult educators agree that the most effective types of interactivity involve people-to-people connections. This model of learning as social collaboration is at the heart of email games.

In an email game, a facilitator and a group of players address a key issue by sending and receiving email messages during several rounds of play spread over days or weeks. Typical email games exploit the ability of the Internet to ignore geographic distances and capitalise on the ability of participants to generate and process content. In the early rounds of play,

the interaction is between players and the facilitator, while in later rounds, players come together to discuss processed content and to debrief.

In addition to training, we use email games for benchmarking and ideas-sharing activities. Some of our games have been played in a professional development context in the LearnScope Virtual Learning Community at www.learnscope.anta.gov.au. (LearnScope is a national Australian professional development program aimed to encourage teachers and trainers in the vocational education and training sector to utilise online technologies to achieve more flexible learning.) Email games have also been played with members of the American Society for Training and Development and the North American Simulation and Gaming Association. In addition, we have created our own email group of volunteer players from different countries around the world. We also provide a design service to teachers and corporate trainers who have adopted and adapted our games for their own training contexts.

Here are brief descriptions of three email games.

Depolariser

This role-playing game uses email and a bulletin board to produce more informed perception of controversial issues as its learning outcome. Depolariser is based on the philosophy that many issues we treat as problems to be solved are actually polarities to be managed. We begin the game with an open-ended question (example: *Do lurkers learn?).* During the six rounds of the game, players explore this issue from both a personal perspective and also from a designated role. By informing the players about the range of positions, we increase their awareness of the spread of opinions around the issue. By having players randomly role-play extreme positions, we encourage them to think about different points of view. By reviewing extremely polarised comments, we help players make more informed decisions. The game typically encourages players at extremes to get closer to the average. Thus, it may not change anyone's opinion, but it increases players' level of awareness of alternative points of view.

Galactic Wormhole

The learning outcome from this email game is a higher-level analysis and understanding of factors that influence specific positive and negative consequences. In this role play game, players participate in a time-travel scenario to explore an issue relevant to their context (example: *the status*

of online learning for vocational training in the year 2004). Each player is given either a utopian scenario in the form of a newspaper headline (*Australian Vocational Education and Training Sector Leads the World in Online Learning*) or a dystopian scenario (*Australian Vocational Education and Training Lags the World in Online Learning*). Players are randomly assigned one of these two scenarios and given one of five stakeholder roles of trainer, learner, manager, decision maker, or industry client. Each player is then asked to submit a 150-word story outlining how his or her designated stakeholder contributed to either this utopian or dystopian future. These scenarios are submitted to the facilitator who collates and posts them in a bulletin board under the stakeholder role. After reviewing all the optimistic and pessimistic scenarios, players submit their five top ideas for ensuring a utopian future. Finally, players vote on critical issues that need to be addressed to ensure the utopian future, then join a facilitated debrief using the bulletin board.

C3PO

The learning outcome from this email game is collaborative problem solving. C3PO stands for *Challenge, Pool, Poll Predict, Outcome*. In Round 1 of C3PO, players receive an open-ended challenge (example: *How do you increase person-to-person interaction in Internet-based training?).* Each player sends three ideas to meet this challenge. In Round 2, the facilitator sends the resulting pool of ideas back to the players and asks them to generate a priority list. Players read through the pool of ideas, select the three that personally appeal to them most, and send them to the facilitator. In Round 3, players review the original pool of ideas, make a prediction of how the entire group would have voted and identify the top set that would have received the most votes.

So during the Round 2 selection process, the players consider how they personally feel and react to the ideas. During the Round 3 prediction process, the players put themselves in other players' positions and estimate the reaction of the population. As one player put it, "*The prediction step forces you to stop thinking wishfully, projecting your preferences, and become absolutely objective*". The player with the closest prediction is the winner! After the results are announced, players participate in an online forum to debrief the game.

Results

During the past three years, we have conducted 64 email game sessions, each lasting an average of 5 rounds spread over a 3-week period. More than 1,250 players have participated in these games, sending us several thousands of email messages on a variety of topics and issues.

In addition to the inputs from the players, we have some additional sources of qualitative data:

- Spontaneous and voluntary feedback from the players about their reactions to the email games and suggestions for improving the structure and the process of the games
- Comments from players in response to email, telephone, and face-to-face interviews
- Comments, suggestions and feedback from a subgroup of players who have accepted our invitation to provide additional information
- Reports from other trainers and facilitators who have adopted and adapted the email game templates for use with their own groups to explore local issues and problems.

Player reactions

Here are some factors related to email games that have emerged consistently in an analysis of comments from different sources.

Email is familiar, available, cost-effective and widely used. User confidence with email means the focus can be on the learning process without being distracted by unfamiliar technology. Email is very inclusive, as online novices and those with more expertise can participate on an equal footing.

Email comes to the desktop. No passwords are needed and there are no download holdups. The game is integrated with the daily work of players, minimising the effort required for participation. The convenience factor of a push technology like email appeals to many players.

Email games promote effective learning. This person-to-person approach is different from the person-to-computer methods used for many computer games. In addition, the games require active participation as players must generate and process the content. If players don't contribute, there is no game.

Email games transcend space and time constraints. The distributed asynchronous process permits colleagues anywhere in the world to share

their expertise and to address common issues. Several of our games have involved players from the US, Australia, Greece, Canada, France, India, Poland, Israel, Argentina, Mexico, and the United Kingdom. As the deadline for each round contains sufficient time, players at different time zones can arrange their participation to suit their personal schedule.

The process is motivating and engaging but not time-consuming or laborious. The division of a game into rounds creates anticipation and is not time demanding. Even if players miss a round, they still receive the results, so can join in the next round without losing too much of the flow.

Players can be anonymous. This aspect of email games attracts active participation by many people who normally "lurk". Anonymity allows people to be more candid and extreme in their opinions without fear of reprisal or ridicule. We have also effectively used play names to increase this anonymity.

Email games achieve productive outcomes. These games generate ideas, solve problems and encourage dialogue on topics and issues that are relevant and salient to the participants.

Email games are continuously improved. The in-built iterative feedback process through structured debriefing provides dynamic formative evaluation for immediate refinements that even better meet user needs.

Email games are versatile and inclusive. We have different game templates suitable for the full range of performance-improvement needs: informing, applying, analysing and synthesising. The games have been used for strategic planning, problem solving, brainstorming, and exploring controversial issues.

Additional findings

Here are some additional findings of a quantitative nature, based on participant responses:

Participation as a function of response requirement. All email game discussions are prompted by one or more open-ended questions or tasks that are similar to those used during brainstorming sessions. In general, the data indicate that the shorter the response required of the participant, the more likely they are to participate.

Timing of responses. Most participants tend to either respond immediately after the instructions for a round of play are posted or just before the deadline for the round. If short responses are required, participants tend to respond immediately. For longer responses, they tend to wait until the last moment. Many players respond well to a prompt.

Total disclosure. Participants prefer to have their inputs displayed, even if they are not selected by peer judges or used for further processing during the ensuing rounds.

Web page support for email messages. If a round of play has lengthy instructions or significant player input, the combination of email and a Web page appears to elicit more participation than a lengthy email alone. In these instances, email provides an overview and summary and then links to a Web page which contains more detailed instructions and/or a complete list of player contributions.

Amount of instructions and text. A key to engaging the participant is to maintain a balance between the rigidity of too much structure and the confusion of too little structure. This optimum state varies from one group to another. However, keeping the text short to minimise reading effort and scrolling seems to increase the response rate.

Keeping score. Although a few participants complain about scores creating unhealthy competition, the majority appears to take these scores seriously as one element of quantitative feedback. Announcing "winners" of a round seems to help sustain interest.

Discrete events. E-games have a start and finish date and a deadline for each round of play. Many participants indicate they prefer this discrete and facilitated learning 'event' rather than the ongoing and unstructured process of many discussion forums.

Extrinsic incentives. Simple recognition and inexpensive prizes tend to increase player participation in a game. Placing the names of top-scoring players in a "Hall of Fame" Web-page and awarding prizes (usually in the form of books or small tokens) to "winners" appear to elicit increased participation. These types of extrinsic incentives are particularly useful during later rounds of a lengthy game.

Designing Email Games

Email games are easy to adopt and adapt. The templates for these games are deliberately designed to permit easy replacement of old content with new. In other words, the content changes, but the process stays the same. Once players have participated in a game, they can easily modify it for use in their own training context.

However, there is much more to a successful email game than plugging in new content and knowing that the process will work. Based on our field experiences and preliminary data, here are some questions to help decide whether an email game is appropriate for a training context.

The task: What to do want your learners to do? Will a game be an appropriate strategy to achieve a learning task?

The technology: Do the learners have the appropriate hardware, software, and technical support to enable them to effectively participate in an email game?

The media: Is a text-based medium like email an appropriate way to achieve the learning task and a suitable technology for the user group?

Players: Does the learning context enable players to effectively participate in email games? Issues to consider include voluntary versus mandatory participation, learning location, access, computer literacy, type of support provided and learning preferences.

Facilitation: Do you have the time, commitment and skill to facilitate a virtual game?

Facilitating an email game

The heart of the matter for a successful email game is effective facilitation. Although players generate and process the content, the facilitator orchestrates the game. Email games change the role of the teacher to a designer and facilitator of learning activities rather than a content expert. To provide a seamless email game, facilitation requires technical, administrative, interpersonal and instructional design functions. Here's a quick look at these factors.

Technical

Facilitators need a working knowledge of the communication technologies they will be using to play virtual games as well as spreadsheets for data management. If players experience technical difficulties or get confused with the forum software, they will most often turn to the facilitator for assistance. Developing a FAQ response file allows the facilitator to be responsive to most queries.

Administrative

As responses to email games arrive they must be processed quickly and accurately in preparation for the next round of play. Accurate and systematic record keeping, like player tracking, collation of input, and sending out of next rounds are critical to the smooth flow of email games.

Interpersonal

While the game templates provide the steps needed to play a game, facilitating a game is more than a mechanical process. Setting the scene, sustaining motivation, and debriefing relies on the human factor and a fair degree of interpersonal skill. Facilitators need to monitor the progress of a game and determine when to change pace, contact individual players and change the tone of the play. Player participation patterns vary. Some players reply promptly, others leave it to the last minute, some miss rounds but contribute to others and some will register and observe but never actively contribute.

Instructional Design

Email games lend themselves to a dynamic instructional process. The facilitator is close to the players and in a position to be responsive to feedback. As the games are played in rounds, it is easy to use a just-in-time instructional design process. If something is not working, it can readily be changed.

Exploring the Instructional Context

Our open-platform approach of inviting colleagues to use our e-game templates in return for sharing their results and modifications, has encouraged spontaneous adoption and improvement of this instructional methodology. While we are excited about creating new e-game structures and templates, we also realise the importance of a systematic study of the factors that influence the process and outcomes of email games. We invite our colleagues in tertiary education to join us in our plans for a specific exploration. So far we have been conducting email games with volunteer groups (usually listservs and learning communities) where participants

have the total choice about their participation. We are curious about the impact of other instructional contexts on the participation rates and learning outcomes. For example, anecdotal data currently suggest positive changes when email games are incorporated in college courses as a mandated requirement. We are planning to explore the optimum integration of these games into vocational and higher education curricula.

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