List of Authors & abstracts of presentations of ISAGA2008

25.05.2008

ID	Name	Paper	Abstract	Country
15	Adrian CJF Mallon	**Pleasure, Responsibility and the Ideated Author in Virtual-World Gaming**	This paper explores how notions of authorial presence can affect players' experiences of virtual-world games. The paper presents a reflective rather than a summative analysis of issues such as authorial presence and style, but has practical implications for present VR game-design and in demarcating future research pathways. It focusses on recent entertainment games (those published in the last eighteen-month period) to illustrate how new opportunities for extending the dramatic possibilities of immersive gaming are currently being implemented to extend computer-interactive gaming as a commercial artform. It explores some of the implications of those trends for the player-reader in terms of consumer satisfaction in the wider context of an area where art and market interests intertwine. Short high-definition video extracts from such titles as the following will be used to illustrate points: Uncharted: Drake's Fortune, Heavenly Sword, Assassin's Creed, Oblivion, Call of Duty IV, Resistance: Fall of Man, Okami.	Ireland
25	Akihiko Fujinawa	**Libra 2: a Gaming Simulation for Learning Evacuation during Volcanic Eruption Crises**	The authors present a new game "Libra 2", a gaming simulation of evacuation from volcanic eruption. A common situation of volcanic crises is that scientists know that an eruption is likely to occur but do not know what size and kind of eruption will occur. Libra 2 was developed to teach uncertainty of volcanic hazard to citizens and students and to train civil authorities for future eruption. "Libra 2" game set includes a playing board, five kinds of playing pieces, four sets of activity level cards, six eruption site cards, a dice, money cards and some items to understand the situation of the virtual volcano named "Arisu". Playing board is designed like a simplified hazard map. Playing pieces symbolize inhabitants around volcano. If the player wants to put inhabitant pieces to the distant and safe place, he must pay some costs for evacuation. State of volcanic activity changes from turn to turn by cards and a dice. Internet version of Libra 2 is playable (in Japanese) in the website (http://vulcania.jp/arisu/). By playing this game, players can experience many virtual eruptions and will aware of benefits and costs of precaution evacuation.	Japan
62	Akira Baba	**Are Tendencies in Real-World Social Behavior Reproduced in the Virtual World? - Investigation and Implications**	Using the example of help-seeking behavior and tactics, this paper investigates if tendencies in real-world social behavior are reproduced in a virtual world and discusses the possibilities as to how the virtual environment can be used to facilitate or inhibit a certain social behavior. A dataset from an online game was analyzed. The result indicated that the real-world tendencies in help-seeking behavior and tactics also existed in the virtual world. The use of virtual environments in reducing the obstacles for help-seeking by men is proposed.	Japan
25	Akira Tasune	**Libra 2: a Gaming Simulation for Learning Evacuation during Volcanic Eruption Crises**	The authors present a new game "Libra 2", a gaming simulation of evacuation from volcanic eruption. A common situation of volcanic crises is that scientists know that an eruption is likely to occur but do not know what size and kind of eruption will occur. Libra 2 was developed to teach uncertainty of volcanic hazard to citizens and students and to train civil authorities for future eruption. "Libra 2" game set includes a playing board, five kinds of playing pieces, four sets of activity level cards, six eruption site cards, a dice, money cards and some items to understand the situation of the virtual volcano named "Arisu". Playing board is designed like a simplified hazard map. Playing pieces symbolize inhabitants around volcano. If the player wants to put inhabitant pieces to the distant and safe place, he must pay some costs for evacuation. State of volcanic activity changes from turn to turn by cards	Japan

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19	Amparo García-Carbonell	**Solving group dysfunctions through debriefing and participation assessment**	The use of simulation and gaming methodology in education often entails group work. Student variables such as previous knowledge, attitude, learning style or personality, among others, may be cause for conflict. In this sense, early detection of group dysfunction, through debriefing and short surveys of the members of the group, with the help of the facilitator, can be helpful in easing the tension that can split a group apart and, in consequence, lead to failure in team work. This paper presents the experiment carried out in a course given to engineering students to improve their English language communication skills. Working in teams, students in the course were immersed in a large-scale telematic simulation, with other participants from different countries and disciplines. The main objective of this paper is to study the level of group participation and verify in what measure dysfunctions can be avoided in the learning community that team dynamics generate. Participation was assessed through brief questionnaires given to all of the work groups, followed by group debriefing sessions after each survey. The first poll revealed 2 teams with dysfunctions, the second only one and the third verified that all six groups were operating properly, thus showing fulfillment of the debriefing and assessment objective. The questionnaires, answered anonymously by all the individuals in each group, contained questions on the quantity and quality of contributions, on proposals for improvement and, in the last questionnaire, on the student's perception of what they had learned. The study also includes the qualitative analysis of student reflections on the collaborative work carried out during the course. This analysis reinforces the results observed upon examination of the responses to the questionnaires.	Spain
28	Angeline van Gils	**Simulation games as safe environments. Are they really?"**	Simulations games are often promoted as safe environments for learning. This attribute is used as a kind of unique selling point of simulation games. But we as game designers and facilitators find it difficult to explain to potential participants and clients what this phrase really means. It is our experience that these situations are not always safe. Of course, poor decisions in the simulation game do not directly affect the real world. The game system seems to be completely separated from the real life system. But is that true? The participants in the game are also members of the real life system and through their experiences and expectancies in link is made between the two systems. When playing simulation games we feel and see that not all participants feel completely at ease; some of them feel insecure because of the demands of the simulation game for their performance, or because they think of the consequences a poor performance in the simulation game may have for them when back in the real life situation. In our paper we will explore the concepts of 'safety' and 'security' , based on our experiences, observations and interviews with participants, game designers and facilitators. When does an adequate level of tension for the learning process turn into a counterproductive feeling of insecurity? What factors and conditions evoke such a feeling? What can game designers and facilitators do to prevent this kind of feelings?	The Netherlands
39	Anne Villems	**Mullivelled - Wrapping Computer Games into Educational Gaming Environments**	Cooperation and collaboration need a lot of positive experience and training for their devel-opment. Software production is nowadays a work where team collaboration is needed, but university teachers claim, that computer science students prefer to communicate with com-puters, not with other human beings. This article describes the attempt to use a computer game to facilitate computer science students to develop a better attitude to collaboration. For this we propose a game frame with three phases: playing alone, playing with random team members, and playing with a real collaborating team.	Estonia

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			Any existing computer game, which satisfies our prerequisites can be used in this frame. We describe an example in which we redesigned the game Bub's Brothers. We present and discuss test runs and describe our future plans.	
23	Ann-Marie Wolff	**Got Focus?: The FOCUS Game**	The FOCUS Game is a one-of-a-kind interactive game for assisting children and adults in managing the effects of ADHD. Built on the well-known adage that 'practice makes perfect', FOCUS aids in establishing a successful learning environment for individuals who struggle with lack of concentration and self-discipline. The skills and abilities acquired through the regular playing of FOCUS help in identifying and overcoming the distractions of life.	United States
64	Arata Ichikawa	**A Game: real and virtual worlds**	The community of gaming research is a network of diverse disciplines involving all types of social sciences. In general, it is customary for researchers in gaming simulation to describe its elusive features and to avoid, intentionally or unintentionally, not only the development of a theory of gaming but also the defining of the minimal terminology. The reason for this long-lasting state-of–art is that a shared definition of gaming simulation among gaming researchers themselves is so ambiguous that researchers outside this world will hold themselves disdainfully at arm's length. Since ISAGA2003, I have been struggling to overcome a worn-out phase, the state-of-art, by presenting historical reviews and basic postulates based on them. At ISAGA2008, the following definition of gaming will be used. A gaming simulation is a conceptually constructed, communication activity with specific goal, a set of rules and constraints, which is located in a true whole being created greater than the sum of initial contexts. Gaming is about reality but a game itself is not reality. Virtual means a construction that resembles part of reality. Gaming may not necessitate complexity. With these contexts, I will present a very simple game of icebreaker and team-building, PROFILE GAME. PROFILE GAME is conceptually designed as an initial relationship gaming in social groups. It is presumed that human behaviour is constrained by the role people play to establish what we call social networks within their given social context. As recent communications technology advances, the world of social networks is being dramatically expanded into a blend of the real world and the virtual world. PROFILE GAME is constructed to enable players to understand not only conventional relationships in the real world but also human relationships in virtual space. A game has fundamentally two phases, the face-to-face context phase and the electronic visual-audio meeting context phase. Also, the experiment was conducted and examined on the assumption that the qualities of human relationships in virtual space can be understood only when compared with those of human relationship in the real world. This experiment was supported by the Ministry of Education of Japan, financially and in the use of the Japanese Educational Satellite Communications Network, and the ministry selected 40 excellent school-teachers as gaming players all over Japan. This presentation will focus on real and virtual worlds in the gaming context and discuss reality and virtual reality. What I would like to emphasize in my knowledge of the PROFILE GAME experiment, is that gaming is only for already experienced people. In another word, gaming for people without any real experience can be a waste of time because of Shannon's and Weaver's theory of communication.	Japan
13	Arthur van Bilsen	**Understanding complex infrastructure systems by playing games: Is it possible?**	Infrastructure systems can be considered as complex systems. Managers and designers of infrastructures have to deal with this complexity. Simulation games are known for their value in understanding complexity. However, seldom a link is made with complexity theory. The goal of this paper is twofold: first, to provide a complex adaptive system lens with which one may identify characteristics of complex infrastructure systems. Second, we present examples of games that can help show characteristics of complex infrastructure systems. The multiplayer computer game SimPort-	The Netherlands

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			about the extension of the Port of Rotterdam-is used to illustrate how a game can be used to elucidate complex characteristics in the development process of a large port. Based on examples it is shown that games can be used to provide insight in infrastructures. The complex adaptive system lens proved to facilitate a more fundamental understanding of infrastructure systems.	
20	Begoña Montero-Fleta	**Research on the Assessment of Individual Contributions to Groupwork**	Traditionally, educational approaches have paid more attention to individual work than to group work. However, group work such as that found in simulation and gaming environments is today considered more effective for promoting student learning and retention than traditional methods. Those who are involved in research in simulation and gaming find problems in the criteria to be used in assessing: group? Individuals? And in getting every participant equally involved in the group. In this paper we report on the outcomes of our research on active learning based on group work with a role-play format in a university environment in which students play the role of tutors and get collaboratively involved in the production of teaching materials in support of class learning objectives. As part of an ongoing study first presented at ISAGA'07, the paper aims to analyze the process and the students' individual contribution to group work. To promote student participation in meeting the task objectives and to overcome the problems of unequal participation or "free riders", self and peer assesment have been used. Assessment should support equity principles and the criteria and standards by which performance is to be judged should be made clear to students from the outset. For this reason, problems regarding fairness in self and peer assessment will be discussed with the participants at the session. Results obtained show that if students are personally involved in the teaching process, motivation is higher and learning is more successful. The study identifies salient issues of constructing effective contributions to group work, facilitating the group's ability to regulate group processes and participation	Spain
20	Beverly Rising	**Research on the Assessment of Individual Contributions to Groupwork**	Traditionally, educational approaches have paid more attention to individual work than to group work. However, group work such as that found in simulation and gaming environments is today considered more effective for promoting student learning and retention than traditional methods. Those who are involved in research in simulation and gaming find problems in the criteria to be used in assessing: group? Individuals? And in getting every participant equally involved in the group. In this paper we report on the outcomes of our research on active learning based on group work with a role-play format in a university environment in which students play the role of tutors and get collaboratively involved in the production of teaching materials in support of class learning objectives. As part of an ongoing study first presented at ISAGA'07, the paper aims to analyze the process and the students' individual contribution to group work. To promote student participation in meeting the task objectives and to overcome the problems of unequal participation or "free riders", self and peer assesment have been used. Assessment should support equity principles and the criteria and standards by which performance is to be judged should be made clear to students from the outset. For this reason, problems regarding fairness in self and peer assessment will be discussed with the participants at the session. Results obtained show that if students are personally involved in the teaching process, motivation is higher and learning is more successful. The study identifies salient issues of constructing effective contributions to group work, facilitating the group's ability to regulate group processes and participation	Spain
19	Beverly Rising	**Solving group dysfunctions through debriefing and participation assessment**	The use of simulation and gaming methodology in education often entails group work. Student variables such as previous knowledge, attitude, learning style or personality, among others, may be cause for conflict. In this sense, early detection of group dysfunction, through debriefing and short	Spain

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			surveys of the members of the group, with the help of the facilitator, can be helpful in easing the tension that can split a group apart and, in consequence, lead to failure in team work. This paper presents the experiment carried out in a course given to engineering students to improve their English language communication skills. Working in teams, students in the course were immersed in a large-scale telematic simulation, with other participants from different countries and disciplines. The main objective of this paper is to study the level of group participation and verify in what measure dysfunctions can be avoided in the learning community that team dynamics generate. Participation was assessed through brief questionnaires given to all of the work groups, followed by group debriefing sessions after each survey. The first poll revealed 2 teams with dysfunctions, the second only one and the third verified that all six groups were operating properly, thus showing fulfillment of the debriefing and assessment objective. The questionnaires, answered anonymously by all the individuals in each group, contained questions on the quantity and quality of contributions, on proposals for improvement and, in the last questionnaire, on the student's perception of what they had learned. The study also includes the qualitative analysis of student reflections on the collaborative work carried out during the course. This analysis reinforces the results observed upon examination of the responses to the questionnaires.	
53	Bimlesh WADHWA	**In-process Assessments in Serious Games**	Games become serious when at least one of the people involved in their development, design or facilitation has a more 'serious' motive that is not pure entertainment driven. Most of the time, that motive is educational. Researchers and practitioners in simulation and gaming have long been focusing on serious games that have clear identifiable educational values. The increasing popularity of entertainment games in the last twenty years has made these games important artifact of youth culture that concerned educational practitioners have to take them seriously into examining their cognitive worth in learning. There are now increasing number of reports that explore into their gaming elements that may provide motivation, reflection, communicative and collaborative facilitation and other effects that enhance learning. While there may be positive reviews, such investigations are time and effort consuming. In-process third-party, stand-aside observations and process-completion questions-and-answers are invariably used in the research methodology. In-process assessments other than those pertaining directly to gaming strategies that result in winning the games are never incorporated into the entertainment games for obvious reason. On the other hand, assessments are important requirement if games are to become serious. In this paper, we describe our attempts in integrating some in-process assessments into a web-based simulation game. It is hoped that the insights would be helpful to others serious in incorporating assessments in serious games in general.	Singapore
41	Brian Mac Namee	**Mixed Reality Table Top Games**	Mixed reality applications use techniques from computer vision, augmented reality and virtual reality to allow real and virtual objects interact physically together on a user's computer screen. This paper will describe two mixed reality applications which allow the user to play games that appear to take place on top of their physical desk. The games described are a desktop racing game and a desktop based game of ten pin bowling. In the desktop racing game virtual cars, controlled by the user, interact with both virtual (such as trees, walls and lampposts) and real objects (such as ramps and blocks). In the bowling game the player throws a real ball at a set of virtual bowling pins which react realistically as the ball appears to hit them. The paper will first describe the field of mixed reality applications, then move on to describe the development of the two aforementioned applications, and finally describe the evaluations that have been carried out so far on these games.	Ireland
20	Carmen Pérez-	**Research on the Assessment of**	Traditionally, educational approaches have paid more attention to individual work than to group work.	Spain

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	Sabater	**Individual Contributions to Groupwork**	However, group work such as that found in simulation and gaming environments is today considered more effective for promoting student learning and retention than traditional methods. Those who are involved in research in simulation and gaming find problems in the criteria to be used in assessing: group? Individuals? And in getting every participant equally involved in the group. In this paper we report on the outcomes of our research on active learning based on group work with a role-play format in a university environment in which students play the role of tutors and get collaboratively involved in the production of teaching materials in support of class learning objectives. As part of an ongoing study first presented at ISAGA'07, the paper aims to analyze the process and the students' individual contribution to group work. To promote student participation in meeting the task objectives and to overcome the problems of unequal participation or "free riders", self and peer assesment have been used. Assessment should support equity principles and the criteria and standards by which performance is to be judged should be made clear to students from the outset. For this reason, problems regarding fairness in self and peer assessment will be discussed with the participants at the session. Results obtained show that if students are personally involved in the teaching process, motivation is higher and learning is more successful. The study identifies salient issues of constructing effective contributions to group work, facilitating the group's ability to regulate group processes and participation	
14	Casper Harteveld	**Understanding Virtual Worlds as Next Generation Infrastructures**	Virtual worlds like Second Life are three-dimensional, audiovisual and persistent representations of space and objects in which users roam with avatars. Paradoxically, this definition still does not offer an understanding of what a virtual world is. Our experience with research into next generation infrastructures inspired us to explain virtual worlds as infrastructures. This article analyzes three levels of virtual worlds: technology, functionality and content. First, on the level of technology, virtual worlds consist of arrays of servers interacting with client applications. Besides the physical infrastructure, management and legislation are elements of the technological level. On the second level, virtual worlds are considered as a tool for communication. Many people use these worlds to meet others and present themselves three-dimensionally, similar as they do using chat software and personal websites. Finally, on the design level, virtual worlds consist of pre-defined and emerging infrastructures, like respectively a teleporting capability and an economy. With these new insights of the infrastructures of virtual worlds, several recommendations are given for the design of games, simulations and other serious applications in virtual worlds.	The Netherlands
21	Casper Harteveld	**Bringing concepts alive in Second Life**	This paper describes our experiences with designing and developing concepts in Second Life in an innovative way, foremost related to a research program called Next Generation Infrastructures and Delft University of Technology. The objective of this experience was to explore the conceptual and technical possibilities of this virtual world as an education, research, communication and collaboration platform. Furthermore, the aim was to be innovative, to go beyond the mere virtualization of existing concepts, and to avoid the pitfalls of non-interactivity and non-uniformity. The end result consists of a coherent, interlinked and interactive environment, in which visitors are able to explore certain concepts by navigation and game-like interaction. Based on this experience, it is concluded that an innovative implementation of concepts poses many technical challenges. In addition, it involves a number of managerial and perceptual challenges as well.	The Netherlands
56	Catalina Ciuce	**The development of a frame-game designed for organizational change management processes**	Organizational change is one of the most important challenges organizational researchers and consultants have to deal with. This is partly because of the great diversity within change processes from one organization to another, because of their length and the general lack of immediate results.	Romania

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			Another key issue is the impact that such a process has on employees. Resistance to change is one of the first outcomes, while also being one of the main concerns consultants have to deal with. It is very easily formed and, once there, very hard to get past it and thus improve the overall acceptance of the change process itself. Although changes vary widely, there still are a few general aspects of great importance that can be addressed in order to improve the whole management of the change situation. This article describes the attempt to create a frame game that would help participants (organizational members) to understand the benefits of taking on a participatory approach in organizational change management processes. The game has three main phases. Throughout the steps employees and management have to work separately at first, and collaborate later on in order to obtain a shared vision of the change process. Being part of the planning and the implementation stages of change, employees get to reduce their resistance and have an overall better image of the process, which in turn provides a more efficient management of the situation. The article is going to present the steps in designing the game, and the results of the tests done so far. Also we shall discuss the implications it might have for organizational researchers and consultants and our future plans for the game.	
57	Chee-Kong CHUI	**Training Hand-eye Coordination in Laparoscopic Surgeries using Computer Games**	Simulation games with advanced human-computer interfaces and event driven simulation engine have been used in military training as well as medical/surgical training. Our focus is on surgical training, in particular, laparoscopic surgery. Laparoscopic surgery is a common surgical procedure that is much less invasive compared to open surgery. However, there are limitations due to poor hand-eye coordination. Advanced surgical simulators using virtual reality technologies have been developed to train the surgeons on their hand-eye coordination capabilities. They are expensive systems with sophistical hardware and software. A more cost effective alternative to these advanced simulation systems may be conventional computer games that require the player to "shoot" the "bad guys" down. We first hypothesized that a regular computer game player has better hand-eye coordination skills than that of a non computer game player. A group of volunteers were recruited in the studies. They were instructed to perform specific surgical tasks that required hand-eye coordination using a surgical simulator. Their performance in terms of accuracy and speed in performing these tasks were measured and recorded. The volunteers who have been playing computer games consistently performed better than those who do not or rarely play computer games. When the latter group has more experience with the simulator, it is expected that the difference in performance between the two groups will narrow. Nevertheless, the hand-eye coordination skills acquired from playing computer games clearly made a difference in this study. Computer gaming can complement conventional training of surgeon in their hand-eye coordination capabilities. The computer game does not have to be complex. We describe the design of a simple computer game that focuses on hand-eye coordination training for surgeries. A force feedback interfacing device appears to be useful in this computer game.	Singapore
57	Chee-Leong Teo	**Training Hand-eye Coordination in Laparoscopic Surgeries using Computer Games**	Simulation games with advanced human-computer interfaces and event driven simulation engine have been used in military training as well as medical/surgical training. Our focus is on surgical training, in particular, laparoscopic surgery. Laparoscopic surgery is a common surgical procedure that is much less invasive compared to open surgery. However, there are limitations due to poor hand-eye coordination. Advanced surgical simulators using virtual reality technologies have been developed to train the surgeons on their hand-eye coordination capabilities. They are expensive systems with sophistical hardware and software. A more cost effective alternative to these advanced simulation systems may be conventional computer games that require the player to "shoot" the "bad guys" down.	Singapore

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51	Claude Bourles	**Playing with CSS and Javascript : The three levels of the Web**	The users of simulation games need documents for their job. This includes anything from rule booklets to role sheets. The recent evolution of new technologies for displaying documents are considered. Document display has moved from paper to screen (and back.) The possibilities of display have evolved with PC's performances. This evolution has lasted a few decades. New possibilities have appeared. Simple text documents became hypermedia documents. The numerous possibilities of hypermedia documents are explored and considered for use in the design of training games, both on-line or indoors/outdoors. The importance of structure is stressed. A minimal knowledge of web standards could be of interest for the authors.	France
23	Courtney M Droms	**Got Focus?: The FOCUS Game**	The FOCUS Game is a one-of-a-kind interactive game for assisting children and adults in managing the effects of ADHD. Built on the well-known adage that 'practice makes perfect', FOCUS aids in establishing a successful learning environment for individuals who struggle with lack of concentration and self-discipline. The skills and abilities acquired through the regular playing of FOCUS help in identifying and overcoming the distractions of life.	United States
29	Dennis Martens	**Why do games work? In search for th eactive substance**	During the ISAGA2007 conference in Nijmegen, The Netherlands, the foundation was laid for a book that tries to find answers to the questions "Why do games work? What is the active substance that makes them do what they do?" Now, one year later, over 20 authors from different fields, from different disciplines and from all over the world have tried to answer this question from their own specific perspective. You can imagine that this has resulted in a wide range of explanations, based on theory, applications and practice. The explanations have been sought in disciplines such as psychodrama, culture, change, learning, narratives, military, communication, homo ludens, management and many more. In a workshop session we want to present and discuss (some of) these answers to the question why games work. In the end we hope to reassure Dick Duke that the statement he once had to made: 'It works, that's all we have', can now be changed in: 'It works, and maybe we start to understand a little why!'	The Netherlands
46	Diny Peters-van Gorp	**A business case for educational games; the Cyberdam-story**	Cyberdam is an open source platform that facilitates teachers to use self developed educational games in their teaching. It is developed by teachers for teachers with the help of considerable government contributions. The original developers are not able to carry the costs for the advanced development. Financing of new releases with new subsidies is an unattractive option that guarantees insufficient continuity. Therefore is looked for a financing model that suits the open source character of	The Netherlands

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			the program and at the same time generates sufficient income to guarantee the further development for at least five years. A struggle for life!	
31	Dmitry Kavtaradze	**What is Uncertainty in Games and Simulations**	Use of activity theory of Russian school of psychology can help to analyse simulations and games. This approach to Gaming-simulation includes meaning acquisition as a mechanism for uncertainty overcome	Russian Federation
63	Eberhard Auchter	**EVALUATION OF SIMULATION GAMES IN THE GERMAN ENTREPRENEURSHIP EDUCATION PROGRAM "EXIST-PRIME-CUP"**	The paper presented here is mainly based on the results of applying simulation games under the auspices of the German Federal Ministry for Economy and leading companies. For entrepreneurship education a nationwide competition "exist-priMEcup" is carried out. The aim of this program (running from 2007 to 2009) is to foster entrepreneurial competencies and to influence the intention of the participants to start up an own company. Using different starup and business simulation games more than 3000 students of more than 100 universities compete in four levels (Campus, Master, Professional and Champions Cups, altogether more than 150 cups). On "Campus Cup" level teams of students compete within the same university. The best two teams of each university are allowed to enter the next level of "Master Cup" in which teams from different universities compete. Again the two winning teams of each Master Cup enter the next level of "Professional Cup" and the last level is the final cup ("Champions Cup"). In each cup level the same simulation methodology is used, but with increasing complexity of scenarios and simulated variables. For the evaluation a questionnaire is used that is handed out after the cup. However, partly different items were used in the different cup levels. We used a special codification system for the participants. This allows to link individual participants data of different cup levels (for those participants that qualify for the next levels) and makes possible to calculate paired sample results. In addition expert interviews are carried out. In the paper we describe the program, the simulation games used and the evaluation method and results of the first and part of the second year of the program. The results support major findings of entrepreneurship research about the importance of certain bundles of competencies, motivation and personality factors in predicting performance (in the simulation), increase of competencies and entrepreneurial intention through the simulation game. In general simulation games can be considered a very effective educational method for entrepreneurship training. The program has an outstanding high degree of acceptance in the perspective of the teachers, the students and the managers of companies who acted as members of the jury in the cup-system.	Germany
31	Elena Yurievna Likhacheva	**What is Uncertainty in Games and Simulations**	Use of activity theory of Russian school of psychology can help to analyse simulations and games. This approach to Gaming-simulation includes meaning acquisition as a mechanism for uncertainty overcome	Russian Federation
49	Elena Victorovna Zarukina	**Simulation and gaming methods in educational process at a higher school: enhancing students' scientific research activity**	The article is devoted to possible use of S&G methods in resolving issues of students' scientific research intensification at a higher school. The business-game "Step to Science" is presented here. It aims at the formation of students' interest to scientific research and primary scientific research skills, as well as setting up creative cooperation between students and teaching staff, all of which constitute actual prerequisites for enhancing students' scientific research activity.	Russian Federation
55	Eli Lindblad Rem	**How can the multi-focused methodology applied to role plays (RPG) improve educational learning/professional knowledge in higher education?**	The focus will be on the use of role playing games (RPG), to heighten student interactivity and reflection. The application of RPG in the global learning perspective has been shown both to improve educational learning and professional knowledge. And that learning and knowing within a given context creates development. The work is mainly inspired by and grounded on Kolb's experiential learning theory. And through teaching the subject of 'Organisation and Leadership' for students in	Norway

ID	Name	Paper	Abstract	Country
			Business Administration at the Bergen University College, three different role playing games has been applied.	
54	Elisabet M Nilsson	**Building sustainable cities in SimCity. An empirical study on students playing computer games in science education**	This proposed paper presents an empirical study involving students (age 12-15 years) collaboratively playing the city-building simulation computer game SimCity 4 (Maxis, 2003) in science education. The students take on the role as urban planners with the mission to create a sustainable city by considering matters such as the infrastructure, building constructions, how citizens are to transport themselves and communicate with each other, how energy should be obtained and clean water distributed. Previous literature (c.f. Barab & Dede 2007, Gee 2003, Egenfeldt-Nielsen 2005, 2006, Kirriemuir & McFarlan 2004, Malone 1981, Schaffer 2007, Squire 2005) bring forth the learning potentials of computer games and other digital media with interactive and visually driven learning environments. These types of learning environments are claimed to be challenging the more traditional modes of communication as they are better suited to the school generation in a contemporary society. From a sociocultural point of view a computer game can be described as a carrier of culture with certain affordances and restraints that enables the gamers to do, experience and learn things that they cannot achieve without the tool (Gee 2003). To learn how to master a computer game and consequently, to learn how to communicate and act on a higher level, is assumed to carry great motivational potential for learning. Also, previous literature (c.f. De Freitas 2007, Egenfeldt-Nielsen 2005, 2006, 2007, Linderoth et al. 2002, Mitchell & Savill-Smith 2004, Rutter & Bryce 2006, Squire 2005) state that there is a lack of empirical evidence supporting the idea that computer games are advantageous to use in educational contexts, as well as lack of understanding of how computer games could be used in practice. The overall aim of the empirical study presented in the proposed paper is to contribute to the games and learning research field by exploring what characterises a science learning context supported by SimCity 4. The paper brings forth a work-in-progress presenting an analytical description of such science learning context, starting out from the students' own descriptions and reflections upon the design of their cities. The case studied is Future City (www.futurecity.com) which is a national competition for Swedish students in grade 6-9 organised by some twenty Swedish organisations within the building trade. More than 40 schools and a thousand students participate in the competition. SimCity 4 is one of the tools used when designing the city, but the students also build physical models of a section of their computer cities, and write essays describing their creations. BRIEFLY ABOUT METHODS - Data gathering methods: focus group interviews (with 19 students groups), documentation of cities created in SimCity 4, documentation of the physical city models, questionnaire. - Empirical data sets: video, transcripts, screen images, photographs, quantitative data from the questionnaire. - Data analysis: the analytical stance towards the empirical data gathered assumes a qualitative approach. Methods used within the fields of interaction analysis (Jordan & Henderson 1995) and conversation analysis (Hutchby & Wooffitt 1998) are applied. REFERENCES Barab, Sasha & Dede, Chris (2007). Games and Immersive Participatory Simulations for Science Education: An Emerging Type of Curricula. Journal of Science Education and Technology, 16(1), 1-3. De Freitas, Sara (2007). The Learning in Immersive Worlds: a review of game based learning report. UK: JISC e-Learning Programme, Higher Education Funding Council for England (HEFCE). Egenfeldt-Nielsen, Simon (2007). "Att skapa ljuv musik: Det pedagogiska anv"andandet av datorspel". Datorspelandet dynamik. Lek och roller i digitala kulturer. Lund: Studentlitteratur. 185-199. Egenfeldt-Nielsen, Simon (2006). Overview of research on the educational use of video games. Digital Kompetanse, 1(3), 184-213. Egenfeldt-Nielsen, Simon (2005). Beyond	Sweden

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			edutainment: Exploring the educational potential of computer games. Dissertation. IT-University, Copenhagen. Gee, James Paul (2003). What video games have to teach us about learning and literacy. New York: Palgrave Macmillan. Hutchby, Ian & Wooffitt, Robin (1998). Conversation analysis: principles, practices and applications. Oxford: Polity. Jordan, Brigitte & Henderson, Austin (1995). Interaction analysis: Foundations and practice. The Journal of the Learning Sciences, 4(1) 39-103. Linderoth, Jonas; Lantz-Andersson, Annika & Lindstr"om, Berner (2002). Electronic exaggerations and virtual worries: Mapping research of computer games relevant to the understanding of children's game play. Contemporary Issues in Early Childhood, 3(2) 226-250. Kirriemuir, John & McFarlan, Angela (2004). Literature review in games and learning. Bristol: FutureLab series. Malone, Thomas (1981). What makes things fun to learn? A study of instrinsically motivating computer games. Palo Alto, CA: Xerox. Maxis (2003). SimCity 4 Deluxe Edition. Redwood City, CA: Electronic Arts. Mitchell, Alice & Carol Savill-Smith (2004). The use of computer and video games for learning: A review of the literature. London: Learning and Skills Development Agency. Rutter, Jason & Bryce, Jo (2006). Understanding digital games. London: Sage. Schaffer, David W. (2007). How computer games help children learn. New York, NY: Palgrave Macmillan. Squire, Kurt (2005). Replaying history: Learning world history through Playing Civilization III. Bloomington, IN: Indiana University.	
9	Elizabeth J Tipton Murff	**Business simulation complexity and effective learning**	There have been many studies attempting to show that learning is either faster, more efficient, more effective or has more efficacy when using simulations as compared to the use of case studies and classic lectures in the business studies classrooms. But the hypothesis that simulations are superior teaching methodologies has rarely been supported. Most serious gamers believe in the phrase "If I hear, I forget; If I see, I remember; If I do, I understand." If one believes that action-learning or learning-by-doing is a better method of teaching and that students learn more and remember it longer when they experience simulations in the classroom environments, why has this superiority hypothesis been so difficult to support? This paper looks at many of these studies and concludes that the prior researches may have selected inappropriate simulations to study the relationship between learning and simulations. The problem may have been linked to game complexity. If the simulations used in teaching environments are too complex then participant learning is reduced and/or not enlightened; if the games are too simple, the learning is only emergent. This essay supports the use of several shorter and less complex simulations in classrooms (and training programs) instead of one large, complex simulation. This essay suggests that that there may indeed be a link between simulations and learning and that the hypothesis that the use of business games in the classroom (or in the training rooms) are superior to other methodologies used in teaching business studies.	United States
24	Elizabeth J Tipton Murff	**Unexpected multicultural experiential learning**	When the players differ culturally from those for which a game is originally designed, unexpected lessons may emerge. The game "So Long Sucker" has been used in an applied game theory course in the United States to allow students to discover how potentially unethical behavior necessary for winning was inherent in the structure of the game. When the enrollment demographics of the course shifted, an insightful and far-reaching experiential lesson on culturally motivated behaviors occurred instead.	United States
40	Elizabeth JT Murff	**Confounded learning in business simulations**	Most serious education gamers believe in the phrase "If I hear, I forget; If I see, I remember; If I do, I understand." Yet many studies have failed in their attempts to show that simulations in the business classroom result in faster or more efficient or more effective learning when compared with case studies and classic lectures. Why has the superiority of action-learning or learning-by-doing been so difficult to support? This paper suggests that Maslow's hierarchy of needs may be confounded with	United States

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			Bloom's taxonomy of learning, resulting in difficulties in assessing the efficacy of business simulations. Furthermore, it suggests that the complexity of many business games may also be inhibiting learning.	
28	Ellen Hijmans	**Simulation games as safe environments. Are they really?"**	Simulations games are often promoted as safe environments for learning. This attribute is used as a kind of unique selling point of simulation games. But we as game designers and facilitators find it difficult to explain to potential participants and clients what this phrase really means. It is our experience that these situations are not always safe. Of course, poor decisions in the simulation game do not directly affect the real world. The game system seems to be completely separated from the real life system. But is that true? The participants in the game are also members of the real life system and through their experiences and expectancies in link is made between the two systems. When playing simulation games we feel and see that not all participants feel completely at ease; some of them feel insecure because of the demands of the simulation game for their performance, or because they think of the consequences a poor performance in the simulation game may have for them when back in the real life situation. In our paper we will explore the concepts of 'safety' and 'security' , based on our experiences, observations and interviews with participants, game designers and facilitators. When does an adequate level of tension for the learning process turn into a counterproductive feeling of insecurity? What factors and conditions evoke such a feeling? What can game designers and facilitators do to prevent this kind of feelings?	The Netherlands
5	Eugenijus Bagdonas	**Internet based busines game "HARD NUT" for multidisciplinary using**	Internet based business game is second version of BG "HARD NUT". The architecture of BG allows integrating it in different modules of Business administration study program. The unique database of all users and of all teams allows students not only to analyse, to forecast data, but also to understand structure of information system of the enterprise. Gamers could adopt it for simulated workplace.	Lithuania
18	Eva Keeris	**Combining concepts from Modeling and Simulation and Game research: Realismic Virtual Environments**	This paper combines the field of Modeling & Simulation with the field of game studies in order to learn from each other when it comes to concepts like reality, realism, fidelity and validity. We propose the new word 'realismic' in order to bring these to fields together.	The Netherlands
19	Frances Watts	**Solving group dysfunctions through debriefing and participation assessment**	The use of simulation and gaming methodology in education often entails group work. Student variables such as previous knowledge, attitude, learning style or personality, among others, may be cause for conflict. In this sense, early detection of group dysfunction, through debriefing and short surveys of the members of the group, with the help of the facilitator, can be helpful in easing the tension that can split a group apart and, in consequence, lead to failure in team work. This paper presents the experiment carried out in a course given to engineering students to improve their English language communication skills. Working in teams, students in the course were immersed in a large-scale telematic simulation, with other participants from different countries and disciplines. The main objective of this paper is to study the level of group participation and verify in what measure dysfunctions can be avoided in the learning community that team dynamics generate. Participation was assessed through brief questionnaires given to all of the work groups, followed by group debriefing sessions after each survey. The first poll revealed 2 teams with dysfunctions, the second only one and the third verified that all six groups were operating properly, thus showing fulfillment of the debriefing and assessment objective. The questionnaires, answered anonymously by all the individuals in each group, contained questions on the quantity and quality of contributions, on proposals for improvement and, in the last questionnaire, on the student's perception of what they had learned. The study also includes the qualitative analysis of student reflections on the collaborative work carried out during the course. This analysis reinforces the results observed upon examination of	Spain

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			the responses to the questionnaires.	
52	Gee Kin Yeo	**Towards an ontologically-supported collaborative SGX**	SGX is a domain-specific information clearinghouse (DSIC) of simulation and gaming technology. A DSIC is a central web-based resource repository which stores information in almost any form related to a particular domain or subject matter. It is managed and run by domain experts, known as providers; people who are very well versed in a particular field. It is typically a central database from which information pertaining to the main topic or subject can be found by the consumers. The type of information is unrestricted, meaning it can be in the form of articles, web links, pictures, videos or downloadable files. Providers in a DSIC are generally very experienced in their fields, and will thus be able to contribute first-hand 'expert' information. This is where DSIC differs from regular web directories, in that they do not merely index words and search criteria, but allow the indexing of only relevant information with regards to a topic. A core taxonomy may initiate such an information structure. Over time, the domain ontology will evolve as providers sharpen their understanding and contribute to the knowledge in DSIC about the domain. A simulation and gaming technology resource ranges from fully-operational, online simulation and gaming systems, to specific functional modules, to testing data and generated scenarios, and to announcement and information on research, development and training opportunities. The scope and range will be as broad as possible within the limits of simulation technlogies including theories, models, test data sets, etc., together with academic gaming, modeling and experiential learning. This paper describes the the ontological framework and a Content-Management System (CMS) implementation of SGX. Reference: http://www.ssagsg.org/sgx/	Singapore
53	Gee Kin Yeo	**In-process Assessments in Serious Games**	Games become serious when at least one of the people involved in their development, design or facilitation has a more 'serious' motive that is not pure entertainment driven. Most of the time, that motive is educational. Researchers and practitioners in simulation and gaming have long been focusing on serious games that have clear identifiable educational values. The increasing popularity of entertainment games in the last twenty years has made these games important artifact of youth culture that concerned educational practitioners have to take them seriously into examining their cognitive worth in learning. There are now increasing number of reports that explore into their gaming elements that may provide motivation, reflection, communicative and collaborative facilitation and other effects that enhance learning. While there may be positive reviews, such investigations are time and effort consuming. In-process third-party, stand-aside observations and process-completion questions-and-answers are invariably used in the research methodology. In-process assessments other than those pertaining directly to gaming strategies that result in winning the games are never incorporated into the entertainment games for obvious reason. On the other hand, assessments are important requirement if games are to become serious. In this paper, we describe our attempts in integrating some in-process assessments into a web-based simulation game. It is hoped that the insights would be helpful to others serious in incorporating assessments in serious games in general.	Singapore
13	Geertje Bekebrede	**Understanding complex infrastructure systems by playing games: Is it possible?**	Infrastructure systems can be considered as complex systems. Managers and designers of infrastructures have to deal with this complexity. Simulation games are known for their value in understanding complexity. However, seldom a link is made with complexity theory. The goal of this paper is twofold: first, to provide a complex adaptive system lens with which one may identify characteristics of complex infrastructure systems. Second, we present examples of games that can help show characteristics of complex infrastructure systems. The multiplayer computer game SimPort-about the extension of the Port of Rotterdam-is used to illustrate how a game can be used to elucidate complex characteristics in the development process of a large port. Based on examples it is shown	The Netherlands

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			that games can be used to provide insight in infrastructures. The complex adaptive system lens proved to facilitate a more fundamental understanding of infrastructure systems.	
14	Geertje Bekebrede	**Understanding Virtual Worlds as Next Generation Infrastructures**	Virtual worlds like Second Life are three-dimensional, audiovisual and persistent representations of space and objects in which users roam with avatars. Paradoxically, this definition still does not offer an understanding of what a virtual world is. Our experience with research into next generation infrastructures inspired us to explain virtual worlds as infrastructures. This article analyzes three levels of virtual worlds: technology, functionality and content. First, on the level of technology, virtual worlds consist of arrays of servers interacting with client applications. Besides the physical infrastructure, management and legislation are elements of the technological level. On the second level, virtual worlds are considered as a tool for communication. Many people use these worlds to meet others and present themselves three-dimensionally, similar as they do using chat software and personal websites. Finally, on the design level, virtual worlds consist of pre-defined and emerging infrastructures, like respectively a teleporting capability and an economy. With these new insights of the infrastructures of virtual worlds, several recommendations are given for the design of games, simulations and other serious applications in virtual worlds.	The Netherlands
29	Gert Jan Hofstede	**Why do games work? In search for th eactive substance**	During the ISAGA2007 conference in Nijmegen, The Netherlands, the foundation was laid for a book that tries to find answers to the questions "Why do games work? What is the active substance that makes them do what they do?" Now, one year later, over 20 authors from different fields, from different disciplines and from all over the world have tried to answer this question from their own specific perspective. You can imagine that this has resulted in a wide range of explanations, based on theory, applications and practice. The explanations have been sought in disciplines such as psychodrama, culture, change, learning, narratives, military, communication, homo ludens, management and many more. In a workshop session we want to present and discuss (some of) these answers to the question why games work. In the end we hope to reassure Dick Duke that the statement he once had to made: 'It works, that's all we have', can now be changed in: 'It works, and maybe we start to understand a little why!'	The Netherlands
54	Gunilla Svingby	**Building sustainable cities in SimCity. An empirical study on students playing computer games in science education**	This proposed paper presents an empirical study involving students (age 12-15 years) collaboratively playing the city-building simulation computer game SimCity 4 (Maxis, 2003) in science education. The students take on the role as urban planners with the mission to create a sustainable city by considering matters such as the infrastructure, building constructions, how citizens are to transport themselves and communicate with each other, how energy should be obtained and clean water distributed. Previous literature (c.f. Barab & Dede 2007, Gee 2003, Egenfeldt-Nielsen 2005, 2006, Kirriemuir & McFarlan 2004, Malone 1981, Schaffer 2007, Squire 2005) bring forth the learning potentials of computer games and other digital media with interactive and visually driven learning environments. These types of learning environments are claimed to be challenging the more traditional modes of communication as they are better suited to the school generation in a contemporary society. From a sociocultural point of view a computer game can be described as a carrier of culture with certain affordances and restraints that enables the gamers to do, experience and learn things that they cannot achieve without the tool (Gee 2003). To learn how to master a computer game and consequently, to learn how to communicate and act on a higher level, is assumed to carry great motivational potential for learning. Also, previous literature (c.f. De Freitas 2007, Egenfeldt-Nielsen 2005, 2006, 2007, Linderoth et al. 2002, Mitchell & Savill-Smith 2004, Rutter & Bryce 2006, Squire 2005) state that there is a lack of empirical evidence supporting the idea that computer games are	Sweden

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			advantageous to use in educational contexts, as well as lack of understanding of how computer games could be used in practice. The overall aim of the empirical study presented in the proposed paper is to contribute to the games and learning research field by exploring what characterises a science learning context supported by SimCity 4. The paper brings forth a work-in-progress presenting an analytical description of such science learning context, starting out from the students' own descriptions and reflections upon the design of their cities. The case studied is Future City (www.futurecity.com) which is a national competition for Swedish students in grade 6-9 organised by some twenty Swedish organisations within the building trade. More than 40 schools and a thousand students participate in the competition. SimCity 4 is one of the tools used when designing the city, but the students also build physical models of a section of their computer cities, and write essays describing their creations. BRIEFLY ABOUT METHODS - Data gathering methods: focus group interviews (with 19 students groups), documentation of cities created in SimCity 4, documentation of the physical city models, questionnaire. - Empirical data sets: video, transcripts, screen images, photographs, quantitative data from the questionnaire. - Data analysis: the analytical stance towards the empirical data gathered assumes a qualitative approach. Methods used within the fields of interaction analysis (Jordan & Henderson 1995) and conversation analysis (Hutchby & Wooffitt 1998) are applied. REFERENCES Barab, Sasha & Dede, Chris (2007). Games and Immersive Participatory Simulations for Science Education: An Emerging Type of Curricula. Journal of Science Education and Technology, 16(1), 1-3. De Freitas, Sara (2007). The Learning in Immersive Worlds: a review of game based learning report. UK: JISC e-Learning Programme, Higher Education Funding Council for England (HEFCE). Egenfeldt-Nielsen, Simon (2007). "Att skapa ljuv musik: Det pedagogiska anv"andandet av datorspel". Datorspelandet dynamik. Lek och roller i digitala kulturer. Lund: Studentlitteratur. 185-199. Egenfeldt-Nielsen, Simon (2006). Overview of research on the educational use of video games. Digital Kompetanse, 1(3), 184-213. Egenfeldt-Nielsen, Simon (2005). Beyond edutainment: Exploring the educational potential of computer games. Dissertation. IT-University, Copenhagen. Gee, James Paul (2003). What video games have to teach us about learning and literacy. New York: Palgrave Macmillan. Hutchby, Ian & Wooffitt, Robin (1998). Conversation analysis: principles, practices and applications. Oxford: Polity. Jordan, Brigitte & Henderson, Austin (1995). Interaction analysis: Foundations and practice. The Journal of the Learning Sciences, 4(1) 39-103. Linderoth, Jonas; Lantz-Andersson, Annika & Lindstr"om, Berner (2002). Electronic exaggerations and virtual worries: Mapping research of computer games relevant to the understanding of children's game play. Contemporary Issues in Early Childhood, 3(2) 226-250. Kirriemuir, John & McFarlan, Angela (2004). Literature review in games and learning. Bristol: FutureLab series. Malone, Thomas (1981). What makes things fun to learn? A study of instrinsically motivating computer games. Palo Alto, CA: Xerox. Maxis (2003). SimCity 4 Deluxe Edition. Redwood City, CA: Electronic Arts. Mitchell, Alice & Carol Savill-Smith (2004). The use of computer and video games for learning: A review of the literature. London: Learning and Skills Development Agency. Rutter, Jason & Bryce, Jo (2006). Understanding digital games. London: Sage. Schaffer, David W. (2007). How computer games help children learn. New York, NY: Palgrave Macmillan. Squire, Kurt (2005). Replaying history: Learning world history through Playing Civilization III. Bloomington, IN: Indiana University.	
21	Harald Warmelink	**Bringing concepts alive in Second Life**	This paper describes our experiences with designing and developing concepts in Second Life in an innovative way, foremost related to a research program called Next Generation Infrastructures and Delft University of Technology. The objective of this experience was to explore the conceptual and	The Netherlands

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			technical possibilities of this virtual world as an education, research, communication and collaboration platform. Furthermore, the aim was to be innovative, to go beyond the mere virtualization of existing concepts, and to avoid the pitfalls of non-interactivity and non-uniformity. The end result consists of a coherent, interlinked and interactive environment, in which visitors are able to explore certain concepts by navigation and game-like interaction. Based on this experience, it is concluded that an innovative implementation of concepts poses many technical challenges. In addition, it involves a number of managerial and perceptual challenges as well.	
14	Harald Warmelink	**Understanding Virtual Worlds as Next Generation Infrastructures**	Virtual worlds like Second Life are three-dimensional, audiovisual and persistent representations of space and objects in which users roam with avatars. Paradoxically, this definition still does not offer an understanding of what a virtual world is. Our experience with research into next generation infrastructures inspired us to explain virtual worlds as infrastructures. This article analyzes three levels of virtual worlds: technology, functionality and content. First, on the level of technology, virtual worlds consist of arrays of servers interacting with client applications. Besides the physical infrastructure, management and legislation are elements of the technological level. On the second level, virtual worlds are considered as a tool for communication. Many people use these worlds to meet others and present themselves three-dimensionally, similar as they do using chat software and personal websites. Finally, on the design level, virtual worlds consist of pre-defined and emerging infrastructures, like respectively a teleporting capability and an economy. With these new insights of the infrastructures of virtual worlds, several recommendations are given for the design of games, simulations and other serious applications in virtual worlds.	The Netherlands
63	Helmut Wittenzellner	**EVALUATION OF SIMULATION GAMES IN THE GERMAN ENTREPRENEURSHIP EDUCATION PROGRAM "EXIST-PRIME-CUP"**	The paper presented here is mainly based on the results of applying simulation games under the auspices of the German Federal Ministry for Economy and leading companies. For entrepreneurship education a nationwide competition "exist-priMEcup" is carried out. The aim of this program (running from 2007 to 2009) is to foster entrepreneurial competencies and to influence the intention of the participants to start up an own company. Using different starup and business simulation games more than 3000 students of more than 100 universities compete in four levels (Campus, Master, Professional and Champions Cups, altogether more than 150 cups). On "Campus Cup" level teams of students compete within the same university. The best two teams of each university are allowed to enter the next level of "Master Cup" in which teams from different universities compete. Again the two winning teams of each Master Cup enter the next level of "Professional Cup" and the last level is the final cup ("Champions Cup"). In each cup level the same simulation methodology is used, but with increasing complexity of scenarios and simulated variables. For the evaluation a questionnaire is used that is handed out after the cup. However, partly different items were used in the different cup levels. We used a special codification system for the participants. This allows to link individual participants data of different cup levels (for those participants that qualify for the next levels) and makes possible to calculate paired sample results. In addition expert interviews are carried out. In the paper we describe the program, the simulation games used and the evaluation method and results of the first and part of the second year of the program. The results support major findings of entrepreneurship research about the importance of certain bundles of competencies, motivation and personality factors in predicting performance (in the simulation), increase of competencies and entrepreneurial intention through the simulation game. In general simulation games can be considered a very effective educational method for entrepreneurship training. The program has an outstanding high degree of acceptance in the perspective of the teachers, the students and the managers of companies who	Germany

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			acted as members of the jury in the cup-system.	
21	Igor Mayer	**Bringing concepts alive in Second Life**	This paper describes our experiences with designing and developing concepts in Second Life in an innovative way, foremost related to a research program called Next Generation Infrastructures and Delft University of Technology. The objective of this experience was to explore the conceptual and technical possibilities of this virtual world as an education, research, communication and collaboration platform. Furthermore, the aim was to be innovative, to go beyond the mere virtualization of existing concepts, and to avoid the pitfalls of non-interactivity and non-uniformity. The end result consists of a coherent, interlinked and interactive environment, in which visitors are able to explore certain concepts by navigation and game-like interaction. Based on this experience, it is concluded that an innovative implementation of concepts poses many technical challenges. In addition, it involves a number of managerial and perceptual challenges as well.	The Netherlands
14	Igor Mayer	**Understanding Virtual Worlds as Next Generation Infrastructures**	Virtual worlds like Second Life are three-dimensional, audiovisual and persistent representations of space and objects in which users roam with avatars. Paradoxically, this definition still does not offer an understanding of what a virtual world is. Our experience with research into next generation infrastructures inspired us to explain virtual worlds as infrastructures. This article analyzes three levels of virtual worlds: technology, functionality and content. First, on the level of technology, virtual worlds consist of arrays of servers interacting with client applications. Besides the physical infrastructure, management and legislation are elements of the technological level. On the second level, virtual worlds are considered as a tool for communication. Many people use these worlds to meet others and present themselves three-dimensionally, similar as they do using chat software and personal websites. Finally, on the design level, virtual worlds consist of pre-defined and emerging infrastructures, like respectively a teleporting capability and an economy. With these new insights of the infrastructures of virtual worlds, several recommendations are given for the design of games, simulations and other serious applications in virtual worlds.	The Netherlands
5	Irena Patasiene	**Internet based busines game "HARD NUT" for multidisciplinary using**	Internet based business game is second version of BG "HARD NUT". The architecture of BG allows integrating it in different modules of Business administration study program. The unique database of all users and of all teams allows students not only to analyse, to forecast data, but also to understand structure of information system of the enterprise. Gamers could adopt it for simulated workplace.	Lithuania
39	Ivar Männamaa	**Mullivelled - Wrapping Computer Games into Educational Gaming Environments**	Cooperation and collaboration need a lot of positive experience and training for their devel-opment. Software production is nowadays a work where team collaboration is needed, but university teachers claim, that computer science students prefer to communicate with com-puters, not with other human beings. This article describes the attempt to use a computer game to facilitate computer science students to develop a better attitude to collaboration. For this we propose a game frame with three phases: playing alone, playing with random team members, and playing with a real collaborating team. Any existing computer game, which satisfies our prerequisites can be used in this frame. We describe an example in which we redesigned the game Bub's Brothers. We present and discuss test runs and describe our future plans.	Estonia
25	Yoshio Hayashi	**Libra 2: a Gaming Simulation for Learning Evacuation during Volcanic Eruption Crises**	The authors present a new game "Libra 2", a gaming simulation of evacuation from volcanic eruption. A common situation of volcanic crises is that scientists know that an eruption is likely to occur but do not know what size and kind of eruption will occur. Libra 2 was developed to teach uncertainty of volcanic hazard to citizens and students and to train civil authorities for future eruption. "Libra 2" game set includes a playing board, five kinds of playing pieces, four sets of activity level cards, six eruption	Japan

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			site cards, a dice, money cards and some items to understand the situation of the virtual volcano named "Arisu". Playing board is designed like a simplified hazard map. Playing pieces symbolize inhabitants around volcano. If the player wants to put inhabitant pieces to the distant and safe place, he must pay some costs for evacuation. State of volcanic activity changes from turn to turn by cards and a dice. Internet version of Libra 2 is playable (in Japanese) in the website (http://vulcania.jp/arisu/). By playing this game, players can experience many virtual eruptions and will aware of benefits and costs of precaution evacuation.	
30	Yoshio Hayashi	**Teaching Innovations at the University Level Based on the Use of Gaming-Simulation:--- A Case Study at Akita University, Japan ---**	We have been promoting a project called "Toward the Construction of a Gaming-Simulation Type of Instruction: A Project for Experience-based Learning to Foster Students' Social and Practical Abilities" in Akita University, Japan. This project was accepted as one of the projects to improve Japanese university education and has been financially supported by the Japanese Ministry of Education, Culture, Sports, Science and Technology since 2006. This project is an attempt to innovate classroom teaching by incorporating experience-based learning that is applicable and feasible both in the classroom and on campus as a whole, using gaming-simulation techniques and constructing collaborative systems for learning by students and teachers. The technique of gaming-simulation is a teaching method designed to lead students to an understanding of or a solution to various problems through activities such as simulation, role-playing or other various games. Our university has been endeavoring to boost student's practical social skills to conduct themselves with confidence and a constructive attitude by revolutionizing classroom teaching through this problem-solving technique. This project would be effective for reforming classroom teaching in university education. Please refer to following Uniform Resource Locator about this project. http://bonden.is.akita-u.ac.jp/	Japan
62	Yosuke Nagashima	**Are Tendencies in Real-World Social Behavior Reproduced in the Virtual World? - Investigation and Implications**	Using the example of help-seeking behavior and tactics, this paper investigates if tendencies in real-world social behavior are reproduced in a virtual world and discusses the possibilities as to how the virtual environment can be used to facilitate or inhibit a certain social behavior. A dataset from an online game was analyzed. The result indicated that the real-world tendencies in help-seeking behavior and tactics also existed in the virtual world. The use of virtual environments in reducing the obstacles for help-seeking by men is proposed.	Japan
28	Jeannette Heldens	**Simulation games as safe environments. Are they really?"**	Simulations games are often promoted as safe environments for learning. This attribute is used as a kind of unique selling point of simulation games. But we as game designers and facilitators find it difficult to explain to potential participants and clients what this phrase really means. It is our experience that these situations are not always safe. Of course, poor decisions in the simulation game do not directly affect the real world. The game system seems to be completely separated from the real life system. But is that true? The participants in the game are also members of the real life system and through their experiences and expectancies in link is made between the two systems. When playing simulation games we feel and see that not all participants feel completely at ease; some of them feel insecure because of the demands of the simulation game for their performance, or because they think of the consequences a poor performance in the simulation game may have for them when back in the real life situation. In our paper we will explore the concepts of 'safety' and 'security' , based on our experiences, observations and interviews with participants, game designers and facilitators. When does an adequate level of tension for the learning process turn into a counterproductive feeling of insecurity? What factors and conditions evoke such a feeling? What can game designers and facilitators do to prevent this kind of feelings?	The Netherlands

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36	Jyldyz Tabyldy kyzy	**"World of Uncertainty", - computer game for Decision Makers.**	Ability to handle uncertainty effectively is very important in almost any decision making. Weather we are uncertain about external information, accuracy of our own knowledge or possible outcomes we often avoid or oversimplify uncertainties while taking decisions, especially when there are time or resource restrictions. Complex models, simulations and decision aids are not always applicable. In cases where objective probability distributions are not obtainable, Bayesian approach allows to operate with decision maker's subjective probabilities. Using strictly proper scoring rules our game will encourage players to improve their probabilistic forecasts. The game is aimed to change player's perception of uncertainty and to improve their skills in estimating, quantifying and communicating subjective probabilities and degrees of confidence. The paper will look at psychological aspects of decision making in uncertainty and its implications in the structure, design and evaluation of the game. The approach can be applied in the variety of contexts: public and business decision making, market forecasting, consumer choice research, betting and gambling, etc. A multidisciplinary team including David Newman, Bride Malone, Jyldyz Tabyldy kyzy (Queens University Belfast), Philip Dawid (University of Cambridge), Damian Green, Mellisa Cole and Tony Elliman (Brunel University) is working on this project supported by EPSRC. Initial Proposal for the project and participants can be seen at http://is.mgt.qub.ac.uk/research/uncertainty/world_of_uncertainty.pdf website.	UK
23	Joan K Teach	**Got Focus?: The FOCUS Game**	The FOCUS Game is a one-of-a-kind interactive game for assisting children and adults in managing the effects of ADHD. Built on the well-known adage that 'practice makes perfect', FOCUS aids in establishing a successful learning environment for individuals who struggle with lack of concentration and self-discipline. The skills and abilities acquired through the regular playing of FOCUS help in identifying and overcoming the distractions of life.	United States
12	Joan K. Teach	**TEACHING TEACHERS TO TEACH: A Game-Frame approach**	DEVELOPMENT:The development of this Game-Frame Building the Children a New Village(c) stemmed from the challenge given by the War Child Organization in 2007 to develop a game which would enable them to teach their teachers and volunteers. Therefore, the object of this game became to teach participants (teacher/trainers) the methods and means to facilitate a change in the coping mechanism of children subjected to the ravages of war. Conceptually, teacher/trainers must interact with the children providing means to change the low self-esteem, self-awareness, fear of failure, fear of future into a positive self-imagery. This change of imagery is identified and signified when a child develops trust, an ability to take chances, and is more willing to learn, to try out, and/or to attempt new avenues of learning through activities (Rubenstein 2007, Giles & Hargreaves 2006). All of these factors are necessary to develop a healthy feeling of self-confidence. In order to provide for this challenge a Game-Frame was developed. DEFINING A GAME FRAME: A Game-Frame was developed in order to create a program with a structural outline, containing flexible internal activities that could be adapted to meet the needs of varied situations, and at the same time address the unique influence of local cultures. The Game-Frame had to be flexible enough so that the tasks presented could be added to, changed, and adapted according to the country, culture or situation in which the teaching will be taking place. Therefore, the requirement for each training session can be tailored to the situation found at a specific location, and will address the specific needs according to the tragedy that has occurred. War Child has already developed activities it uses, and a frame would allow them to freely utilize these and more. GAME OVERVIEW The title of the Game Frame is Building the Children a New Village(c) . The game board consists of a large none-descript plot of land that can soon develop trails, paths and open areas upon which a village can be built. Teacher/trainers are divided into four teams. Each team is responsible for learning activities to present to the children. These activities are	United States

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			divided into areas of basic need and therefore provide a basis for developing competence in the areas of Shelter = the basic need for a place to live Nourishment = the need for food Joy = the need to have fun Renewal = the need to replenish the soul Trust = the need to be cared for These five areas provide the basis of the Game-Frame upon which the training takes place. Participants are divided into four teams. These four teams compete by teaching each other those activities they will eventually use to train the children. This Game-Frame: Building the Children a New Village(c) includes five sets of activity and skill training modules, one for each of the areas to be developed; Shelter, Nourishment, Joy, Renewal, and Trust. Each module consists of a variety of skills and activity projects that can be used as teacher training, tools, and will provide activities to use with the children when the training is complete. These are purposely not designed to be all-inclusive, but as samples upon which the War Child Staff can build. In this way the training staff can gear the activities to the environment, age level of the children, the kind of trauma and other factors the teacher trainers are likely to encounter. When a team completes a teaching module, they receive points from their partner Team. These points are then used to select the attributes they can begin to provide items for the children as they build the village. Attributes are selected according to the competency area from which the activity was presented. Attributes are stickers that are placed on an Object Tent. The Team chooses a plot of land and decides where in the village to build, where they want pathways, what they want to provide. For instance, if the activity chosen is from the category of Shelter, they may begin by selecting a foundation. If the activity is from the Nourishment category, they may choose segments of a healthy meal. If the activity is from Joy, the Team may choose to build a simple swing. Small sandwich-board tents are placed around the board indicating what the teams have earned and determine how these can benefit the total community. The obvious goal is to provide the children with a well-balanced environment where their basic needs of shelter and food have been supplied, where activities of support and trust have been developed and where self esteem and joy can be a part of a brighter tomorrow. The underlying goal is to train the teachers to be sensitive to the needs of others, to work together in teams, to be aware of their own strengths and weaknesses. Training staff and players all have the opportunity to reward the behavior of individuals who exemplify these attributes. These points are rewarded by earning the aesthetic parts of the community including trees, bushes, flowers, park benches and the like. Another less obvious goal includes understanding the behaviors and interactions of others. Dilemma cards were created to portray everyday interactions between student and teacher, as well as to raise consciousness of the possible behavioral implications of a child dealing with trauma and crisis. These occasions provide constant reminder of the kinds of situations the teacher may be facing and create deliberation as to what they may do to work through the situation. Again, the teaching staff can add any typically occurring event to make the experience as worthwhile and realistic as possible. As is necessary in any game situation, this Game-Frame has a build in routine of debriefing. When training teachers, this activity is probably the most beneficial as it is a time of evaluating, reflecting, and reassessment of skill and reaction. It is also at this time that the participating teacher gains recognition, positive point rewards that will enable the teacher to contribute to Building the Children a New Village(c). Because this is developed as a Game-Frame, the length and duration of play can last from three days to two weeks. The prior skill level of the teachers to be trained and their cognitive understanding of the situation directly dictate the interactive time necessary for training. Again, this is a flexibility that can be built upon by the training staff. The design creates an interaction pattern so that in one day, each team interacts with every other team and rewards build as the day	

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61	Jussi Holopainen	**Gameplay Design Patterns for Motivation and Engagement**	In this paper we look at gameplay design patterns related to motivation and engagement. Based upon games focusing on planning and reflection a deeper analysis of already identified patterns is given as well as several new patterns describing more abstract aspects of this subsection of the design space for gameplay. Besides building a better understanding of the core mechanics underlying the appeal of gameplay, this more detailed examination is intended to support how gameplay design can be used design games also for other things than entertainment. Although based upon entertainment games, we argue that the current level of abstraction make the patterns applicable in other use domains while the chosen starting point ensures that the traditional autotelic aspects of games are maintained. Examples of revisited patterns include Player-Designed Characters, Planned Character Development, Social Status, and Player Defined Goals, while new design patterns include Overlapping Closure Arcs and Memorabilia.	Finland
27	Klaus-Peter Schulz	**Playing and Reflecting the Firm**	Combining Process Simulation and Business Game as a Tool to Learn Production and Logistics	Germany
39	Külli Kalamees-Pani	**Mullivelled - Wrapping Computer Games into Educational Gaming Environments**	Cooperation and collaboration need a lot of positive experience and training for their devel-opment. Software production is nowadays a work where team collaboration is needed, but university teachers claim, that computer science students prefer to communicate with com-puters, not with other human	Estonia

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			beings. This article describes the attempt to use a computer game to facilitate computer science students to develop a better attitude to collaboration. For this we propose a game frame with three phases: playing alone, playing with random team members, and playing with a real collaborating team. Any existing computer game, which satisfies our prerequisites can be used in this frame. We describe an example in which we redesigned the game Bub's Brothers. We present and discuss test runs and describe our future plans.	
29	Léon de Caluwé	**Why do games work? In search for th eactive substance**	During the ISAGA2007 conference in Nijmegen, The Netherlands, the foundation was laid for a book that tries to find answers to the questions "Why do games work? What is the active substance that makes them do what they do?" Now, one year later, over 20 authors from different fields, from different disciplines and from all over the world have tried to answer this question from their own specific perspective. You can imagine that this has resulted in a wide range of explanations, based on theory, applications and practice. The explanations have been sought in disciplines such as psychodrama, culture, change, learning, narratives, military, communication, homo ludens, management and many more. In a workshop session we want to present and discuss (some of) these answers to the question why games work. In the end we hope to reassure Dick Duke that the statement he once had to made: 'It works, that's all we have', can now be changed in: 'It works, and maybe we start to understand a little why!'	The Netherlands
34	Maaike Martha de Jong	**The world your playground; students at play in reconstructing reality**	How do students (BBA) perceive, describe and construct reality, once they're invited to use it as their playground? In the spring of 2008 80 students of Stenden University in The Netherlands took the course 'Imagineering'. The term Imagineering was first coined by Disney, describing the process of both the imagining and engineering involved in creating experiences that themeparks like Disneyland are known for. During this course students are required to come up with a new experience for Disney. This assigment involves both research and creative skills, both of which are trained during this module. Part of the focus in the research assignment is on creativity, creative techniques and how to use them to collect ideas and information. The paper adresses the part of the research assigment called: 'the world your playground'. While students explore their own concepts of reality, virtuality and all the hidden assumptions in dealing with everyday life, the author uses their responses to analyze both the way they construct reality and the elements of playfulness involved. Building from both philosophical and psychological theoretical frameworks regarding simulation, playfulness and virtual reality, an assesment is made of the creativity involved in defining reality. This may provide further insight into the distinction between real and virtual worlds. At this moment the students are performing the assigment, their deadline is at the end of March	The Netherlands
8	Maria Angeles Andreu-Andres	**A Problem-Based Task becoming a Simulation**	This paper describes the procedure followed to turn a problem-based task into a simulation carried out by several groups of students of engineering from different nationalities, as well as the steps chased to pursue its goal: the students' presentation of a new instrument developed by every group that will facilitate, in their opinion, the Technical Engineer in Topography's task enormously.	Spain
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28	Marleen van de Westelaken	**Simulation games as safe environments. Are they really?"**	Simulations games are often promoted as safe environments for learning. This attribute is used as a kind of unique selling point of simulation games. But we as game designers and facilitators find it	The Netherlands

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			difficult to explain to potential participants and clients what this phrase really means. It is our experience that these situations are not always safe. Of course, poor decisions in the simulation game do not directly affect the real world. The game system seems to be completely separated from the real life system. But is that true? The participants in the game are also members of the real life system and through their experiences and expectancies in link is made between the two systems. When playing simulation games we feel and see that not all participants feel completely at ease; some of them feel insecure because of the demands of the simulation game for their performance, or because they think of the consequences a poor performance in the simulation game may have for them when back in the real life situation. In our paper we will explore the concepts of 'safety' and 'security' , based on our experiences, observations and interviews with participants, game designers and facilitators. When does an adequate level of tension for the learning process turn into a counterproductive feeling of insecurity? What factors and conditions evoke such a feeling? What can game designers and facilitators do to prevent this kind of feelings?	
5	Martynas Patasius	**Internet based busines game "HARD NUT" for multidisciplinary using**	Internet based business game is second version of BG "HARD NUT". The architecture of BG allows integrating it in different modules of Business administration study program. The unique database of all users and of all teams allows students not only to analyse, to forecast data, but also to understand structure of information system of the enterprise. Gamers could adopt it for simulated workplace.	Lithuania
25	Masami Ido	**Libra 2: a Gaming Simulation for Learning Evacuation during Volcanic Eruption Crises**	The authors present a new game "Libra 2", a gaming simulation of evacuation from volcanic eruption. A common situation of volcanic crises is that scientists know that an eruption is likely to occur but do not know what size and kind of eruption will occur. Libra 2 was developed to teach uncertainty of volcanic hazard to citizens and students and to train civil authorities for future eruption. "Libra 2" game set includes a playing board, five kinds of playing pieces, four sets of activity level cards, six eruption site cards, a dice, money cards and some items to understand the situation of the virtual volcano named "Arisu". Playing board is designed like a simplified hazard map. Playing pieces symbolize inhabitants around volcano. If the player wants to put inhabitant pieces to the distant and safe place, he must pay some costs for evacuation. State of volcanic activity changes from turn to turn by cards and a dice. Internet version of Libra 2 is playable (in Japanese) in the website (http://vulcania.jp/arisu/). By playing this game, players can experience many virtual eruptions and will aware of benefits and costs of precaution evacuation.	Japan
30	Masami Ido	**Teaching Innovations at the University Level Based on the Use of Gaming-Simulation:--- A Case Study at Akita University, Japan ---**	We have been promoting a project called "Toward the Construction of a Gaming-Simulation Type of Instruction: A Project for Experience-based Learning to Foster Students' Social and Practical Abilities" in Akita University, Japan. This project was accepted as one of the projects to improve Japanese university education and has been financially supported by the Japanese Ministry of Education, Culture, Sports, Science and Technology since 2006. This project is an attempt to innovate classroom teaching by incorporating experience-based learning that is applicable and feasible both in the classroom and on campus as a whole, using gaming-simulation techniques and constructing collaborative systems for learning by students and teachers. The technique of gaming-simulation is a teaching method designed to lead students to an understanding of or a solution to various problems through activities such as simulation, role-playing or other various games. Our university has been endeavoring to boost student's practical social skills to conduct themselves with confidence and a constructive attitude by revolutionizing classroom teaching through this problem-solving technique. This project would be effective for reforming classroom teaching in university education. Please refer to following Uniform Resource Locator about this project. http://bonden.is.akita-u.ac.jp/	Japan

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22	Michael Fox	**Creating Understanding and Meaning across Cultures: Playing a Business Game with Groups from the US, South Africa and Germany**	In the proposed paper we will discuss the option of learning across cultures through playing a business game. We will refer to a case study of realizing a business game with students from three different nations, the US, South Africa and Germany. We see the contribution of our paper first in discussing business games as a forum for intercultural learning of organizational practice and second in providing an answer to the question what the added value of such intercultural learning experience compared to societal homogeneous business games is? In the paper we argue that in globalized economies the ability to communicate and cooperate across cultures is essential in management processes. From a practitioners position question arises how such intercultural communication and cooperation can be learned in work processes. We see business games that focus social processes as an excellent forum to learn communication, cooperation and coordination, since they represent a form of practice which is close to operational work. The more different backgrounds of cooperation partners are, the more important and difficile it is to create collectively shared understanding. Based on this understanding mutual meaning of artifacts can be developed, which provides a basis for corporate acting. Apart from these textual aspects we consider, from a methodological position, business games as a powerful context to observe and (collectively) reflect such creation of understanding and meaning in an intercultural background. From the theoretical background of intercultural cooperation we will discuss outcomes in the light of the GLOBE-study on culture, leadership and organizations (House et al. 2004). This study delivers among others empirical background data of the three countries (societies) from which participants of the business game originate from. The business game represents a suitable forum either to learn communication, cooperation and coordination across cultures and further it provides the opportunity to research such issue as action research in a type of practice that provides, together with the participant's pre experience, characteristics of real work practice. Hence, practice at the business game will be considered through the analytical lens "community of practice" by Lave and Wenger (1991; Wenger 2003). The students, participants of a summer school, pursued the task to reorganize a global acting enterprise. The group represented different disciplines and different levels of professional experience. The game lasts for two and a half days. Participants are divided in ethnical mixed groups that represent different units and management functions of the enterprise. Basic information is provided through a general manual with data of the company. Further each group is confronted with specific objectives that are likely to be contradictive with other groups. As an overall goal the group has to present an overall transformation strategy for the enterprise. A group of supervisors accompanies the game and gives feedback about the proceedings in several interim meetings. The business game was systematically observed by participatory observation. The game was suspended by several reflection meetings where social behavior was reflected. In a final reflection participants discussed communication, cooperation and leadership within their societal group. Particularly we will discuss following aspects: - How do views on communication, cooperation and leadership issues differ? - How does communication take place on these different issues? - How is collectively shared meaning and understanding created across cultures? - How does pre-experience influence the creation of understanding? - How do participants assess the learning effects of this intercultural experience?	Germany
21	Michele Fumarola	**Bringing concepts alive in Second Life**	This paper describes our experiences with designing and developing concepts in Second Life in an innovative way, foremost related to a research program called Next Generation Infrastructures and Delft University of Technology. The objective of this experience was to explore the conceptual and technical possibilities of this virtual world as an education, research, communication and collaboration	The Netherlands

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			platform. Furthermore, the aim was to be innovative, to go beyond the mere virtualization of existing concepts, and to avoid the pitfalls of non-interactivity and non-uniformity. The end result consists of a coherent, interlinked and interactive environment, in which visitors are able to explore certain concepts by navigation and game-like interaction. Based on this experience, it is concluded that an innovative implementation of concepts poses many technical challenges. In addition, it involves a number of managerial and perceptual challenges as well.	
8	Miguel Garcia-Casas	**A Problem-Based Task becoming a Simulation**	This paper describes the procedure followed to turn a problem-based task into a simulation carried out by several groups of students of engineering from different nationalities, as well as the steps chased to pursue its goal: the students' presentation of a new instrument developed by every group that will facilitate, in their opinion, the Technical Engineer in Topography's task enormously.	Spain
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58	Mika Igarashi	**Developing a Research Methodology for Quantitative Analysis of In-Game Social Behavior**	There is increasing interest in how social behavior is conducted during game play. Examination of in-game social behavior is important for two reasons: for the improvement of game development techniques, and for deepening our understanding of games. However, due to the unique characteristics of game log data, social scientists investigating in-game behavior face challenges identifying appropriate research methodologies. There is a strong need for new methodologies designed for analyzing game log data in order to take advantage of its richness to the fullest. Therefore, this paper demonstrates how to transform game log data into a dataset for quantitative research of in-game social behavior. As an example, it shows how to extract helping behavior from the log data and conduct quantitative analysis on it. This is done in following four steps: 1) breaking down helping behavior into a cognitive and behavioral procedure, 2) identifying a speech act that indicates the occurrence of helping behavior, 3) developing assessment standards for evaluating the occurrence of helping behavior, and 4) using multiple extractors and assuring the consistency of the extraction methodology.	Japan
62	Mika Igarashi, Yosuke Nagashima, Akira Baba	**Are Tendencies in Real-World Social Behavior Reproduced in the Virtual World? - Investigation and Implications**	Using the example of help-seeking behavior and tactics, this paper investigates if tendencies in real-world social behavior are reproduced in a virtual world and discusses the possibilities as to how the virtual environment can be used to facilitate or inhibit a certain social behavior. A dataset from an online game was analyzed. The result indicated that the real-world tendencies in help-seeking behavior and tactics also existed in the virtual world. The use of virtual environments in reducing the obstacles for help-seeking by men is proposed.	Japan
52	Nam Chi CHOW	**Towards an ontologically-supported collaborative SGX**	SGX is a domain-specific information clearinghouse (DSIC) of simulation and gaming technology. A DSIC is a central web-based resource repository which stores information in almost any form related to a particular domain or subject matter. It is managed and run by domain experts, known as providers; people who are very well versed in a particular field. It is typically a central database from which information pertaining to the main topic or subject can be found by the consumers. The type of information is unrestricted, meaning it can be in the form of articles, web links, pictures, videos or downloadable files. Providers in a DSIC are generally very experienced in their fields, and will thus be able to contribute first-hand 'expert' information. This is where DSIC differs from regular web directories, in that they do not merely index words and search criteria, but allow the indexing of only	Singapore

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			relevant information with regards to a topic. A core taxonomy may initiate such an information structure. Over time, the domain ontology will evolve as providers sharpen their understanding and contribute to the knowledge in DSIC about the domain. A simulation and gaming technology resource ranges from fully-operational, online simulation and gaming systems, to specific functional modules, to testing data and generated scenarios, and to announcement and information on research, development and training opportunities. The scope and range will be as broad as possible within the limits of simulation technlogies including theories, models, test data sets, etc., together with academic gaming, modeling and experiential learning. This paper describes the the ontological framework and a Content-Management System (CMS) implementation of SGX. Reference: http://www.ssagsg.org/sgx/	
37	Nicola Lettieri	**Throwing rocks into a pond: serious games and emerging models of legal education**	Latest trends analysis in the field of learning technologies shows a growing attention towards didactical use of computer games and simulations. Serious games (i.e. software applications for learning purposes developed by using game technology and based on game design principles) represent the new frontier of learning methodologies. Usually based on the simulation of real activities, serious games allow new forms of experiential learning in which knowledge and skills are acquired through dynamics of action and feedbacks between learners and simulated scenarios created by the computer. There are numerous reasons to consider serious games as a profitable method of teaching law. As a matter of fact, legal education consists not only in teaching theoretical concepts (i.e. principles of law and legal ethics) but also in ensuring the acquirement of "practical" legal skills (understanding and writing juridical texts; solving juridical problems; relational skills etc.) which are essential for a jurist. The use of serious games as a tool in legal studies is still rather rare, probably also because of the conservative attitude of legal education. Starting from a brief analysis of existing experiences in this field, this paper aims at drawing an essential roadmap for designing legal serious games. The paper highlights main issues which are to be deepened for designing new learning tools and methodologies devoted to undergraduate and vocational legal learning.	Italy
32	Pieter van der Hijden	**From learning design to game design and back; the Cyberdam example**	Game designers have a whole arsenal of tools to design and build attractive games. However, the relation between these tools (or components, patterns, concepts) with the external goal of the game, e.g. learning, is often rather vague. Learning designers use other tools and concepts and it is not clear where and how these two worlds can meet. With the advent of "serious gaming" educational institutes ask for educational arguments to justify the use of games. When a new game has to be developed, they formulate elaborated requirements on learning objectives, the game has to meet. The Cyberdam project had to deal with these issues and resulted in some clarification and recommended practices.	The Netherlands
41	Qingqing Dong	**Mixed Reality Table Top Games**	Mixed reality applications use techniques from computer vision, augmented reality and virtual reality to allow real and virtual objects interact physically together on a user's computer screen. This paper will describe two mixed reality applications which allow the user to play games that appear to take place on top of their physical desk. The games described are a desktop racing game and a desktop based game of ten pin bowling. In the desktop racing game virtual cars, controlled by the user, interact with both virtual (such as trees, walls and lampposts) and real objects (such as ramps and blocks). In the bowling game the player throws a real ball at a set of virtual bowling pins which react realistically as the ball appears to hit them. The paper will first describe the field of mixed reality applications, then move on to describe the development of the two aforementioned applications, and finally describe the evaluations that have been carried out so far on these games.	Ireland
27	Ralph Riedel	**Playing and Reflecting the Firm**	Combining Process Simulation and Business Game as a Tool to Learn Production and Logistics	Germany

ID	Name	Paper	Abstract	Country
9	Richard D. Teach	**Business simulation complexity and effective learning**	There have been many studies attempting to show that learning is either faster, more efficient, more effective or has more efficacy when using simulations as compared to the use of case studies and classic lectures in the business studies classrooms. But the hypothesis that simulations are superior teaching methodologies has rarely been supported. Most serious gamers believe in the phrase "If I hear, I forget; If I see, I remember; If I do, I understand." If one believes that action-learning or learning-by-doing is a better method of teaching and that students learn more and remember it longer when they experience simulations in the classroom environments, why has this superiority hypothesis been so difficult to support? This paper looks at many of these studies and concludes that the prior researches may have selected inappropriate simulations to study the relationship between learning and simulations. The problem may have been linked to game complexity. If the simulations used in teaching environments are too complex then participant learning is reduced and/or not enlightened; if the games are too simple, the learning is only emergent. This essay supports the use of several shorter and less complex simulations in classrooms (and training programs) instead of one large, complex simulation. This essay suggests that that there may indeed be a link between simulations and learning and that the hypothesis that the use of business games in the classroom (or in the training rooms) are superior to other methodologies used in teaching business studies.	United States
40	Richard Teach	**Confounded learning in business simulations**	Most serious education gamers believe in the phrase "If I hear, I forget; If I see, I remember; If I do, I understand." Yet many studies have failed in their attempts to show that simulations in the business classroom result in faster or more efficient or more effective learning when compared with case studies and classic lectures. Why has the superiority of action-learning or learning-by-doing been so difficult to support? This paper suggests that Maslow's hierarchy of needs may be confounded with Bloom's taxonomy of learning, resulting in difficulties in assessing the efficacy of business simulations. Furthermore, it suggests that the complexity of many business games may also be inhibiting learning.	United States
23	Roosevelt Standifer	**Got Focus?: The FOCUS Game**	The FOCUS Game is a one-of-a-kind interactive game for assisting children and adults in managing the effects of ADHD. Built on the well-known adage that 'practice makes perfect', FOCUS aids in establishing a successful learning environment for individuals who struggle with lack of concentration and self-discipline. The skills and abilities acquired through the regular playing of FOCUS help in identifying and overcoming the distractions of life.	United States
37	Sebastiano Faro	**Throwing rocks into a pond: serious games and emerging models of legal education**	Latest trends analysis in the field of learning technologies shows a growing attention towards didactical use of computer games and simulations. Serious games (i.e. software applications for learning purposes developed by using game technology and based on game design principles) represent the new frontier of learning methodologies. Usually based on the simulation of real activities, serious games allow new forms of experiential learning in which knowledge and skills are acquired through dynamics of action and feedbacks between learners and simulated scenarios created by the computer. There are numerous reasons to consider serious games as a profitable method of teaching law. As a matter of fact, legal education consists not only in teaching theoretical concepts (i.e. principles of law and legal ethics) but also in ensuring the acquirement of "practical" legal skills (understanding and writing juridical texts; solving juridical problems; relational skills etc.) which are essential for a jurist. The use of serious games as a tool in legal studies is still rather rare, probably also because of the conservative attitude of legal education. Starting from a brief analysis of existing experiences in this field, this paper aims at drawing an essential roadmap for designing legal serious games. The paper highlights main issues which are to be deepened for designing new learning tools and methodologies devoted to undergraduate and vocational legal learning.	Italy

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43	Shinnosuke Kawakami	**Science Rooms: Developing a new Digital Game to Learn Science**	In this paper I propose a efficient use of Digital Game to learn science aims to encourage student who is hard to deal with science experiment, and give them an opportunity of virtual science experiment. I developed a new game "Science Rooms" which consist of five stages for simulation and one stage for analysis. This contains five region:mechanics, fluid mechanics, sound, electric, cosmic science. Generally, a learning procedure of science experiment education is firstly learning the theory, secondly carrying out experiment, finally analyze the data. This Game gives a oppotunity and experience of a virtual science experiment and analysis with easy operation.	Japan
30	Shintaro Hayashi	**Teaching Innovations at the University Level Based on the Use of Gaming-Simulation:--- A Case Study at Akita University, Japan ---**	We have been promoting a project called "Toward the Construction of a Gaming-Simulation Type of Instruction: A Project for Experience-based Learning to Foster Students' Social and Practical Abilities" in Akita University, Japan. This project was accepted as one of the projects to improve Japanese university education and has been financially supported by the Japanese Ministry of Education, Culture, Sports, Science and Technology since 2006. This project is an attempt to innovate classroom teaching by incorporating experience-based learning that is applicable and feasible both in the classroom and on campus as a whole, using gaming-simulation techniques and constructing collaborative systems for learning by students and teachers. The technique of gaming-simulation is a teaching method designed to lead students to an understanding of or a solution to various problems through activities such as simulation, role-playing or other various games. Our university has been endeavoring to boost student's practical social skills to conduct themselves with confidence and a constructive attitude by revolutionizing classroom teaching through this problem-solving technique. This project would be effective for reforming classroom teaching in university education. Please refer to following Uniform Resource Locator about this project. http://bonden.is.akita-u.ac.jp/	Japan
25	Shintaro Hayashi	**Libra 2: a Gaming Simulation for Learning Evacuation during Volcanic Eruption Crises**	The authors present a new game "Libra 2", a gaming simulation of evacuation from volcanic eruption. A common situation of volcanic crises is that scientists know that an eruption is likely to occur but do not know what size and kind of eruption will occur. Libra 2 was developed to teach uncertainty of volcanic hazard to citizens and students and to train civil authorities for future eruption. "Libra 2" game set includes a playing board, five kinds of playing pieces, four sets of activity level cards, six eruption site cards, a dice, money cards and some items to understand the situation of the virtual volcano named "Arisu". Playing board is designed like a simplified hazard map. Playing pieces symbolize inhabitants around volcano. If the player wants to put inhabitant pieces to the distant and safe place, he must pay some costs for evacuation. State of volcanic activity changes from turn to turn by cards and a dice. Internet version of Libra 2 is playable (in Japanese) in the website (http://vulcania.jp/arisu/). By playing this game, players can experience many virtual eruptions and will aware of benefits and costs of precaution evacuation.	Japan
61	Staffan Björk	**Gameplay Design Patterns for Motivation and Engagement**	In this paper we look at gameplay design patterns related to motivation and engagement. Based upon games focusing on planning and reflection a deeper analysis of already identified patterns is given as well as several new patterns describing more abstract aspects of this subsection of the design space for gameplay. Besides building a better understanding of the core mechanics underlying the appeal of gameplay, this more detailed examination is intended to support how gameplay design can be used design games also for other things than entertainment. Although based upon entertainment games, we argue that the current level of abstraction make the patterns applicable in other use domains while the chosen starting point ensures that the traditional autotelic aspects of games are maintained. Examples of revisited patterns include Player-Designed Characters, Planned Character Development, Social Status, and Player Defined Goals, while new design patterns include Overlapping Closure Arcs	Sweden

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			and Memorabilia.	
57	Stephen Chang	**Training Hand-eye Coordination in Laparoscopic Surgeries using Computer Games**	Simulation games with advanced human-computer interfaces and event driven simulation engine have been used in military training as well as medical/surgical training. Our focus is on surgical training, in particular, laparoscopic surgery. Laparoscopic surgery is a common surgical procedure that is much less invasive compared to open surgery. However, there are limitations due to poor hand-eye coordination. Advanced surgical simulators using virtual reality technologies have been developed to train the surgeons on their hand-eye coordination capabilities. They are expensive systems with sophistical hardware and software. A more cost effective alternative to these advanced simulation systems may be conventional computer games that require the player to "shoot" the "bad guys" down. We first hypothesized that a regular computer game player has better hand-eye coordination skills than that of a non computer game player. A group of volunteers were recruited in the studies. They were instructed to perform specific surgical tasks that required hand-eye coordination using a surgical simulator. Their performance in terms of accuracy and speed in performing these tasks were measured and recorded. The volunteers who have been playing computer games consistently performed better than those who do not or rarely play computer games. When the latter group has more experience with the simulator, it is expected that the difference in performance between the two groups will narrow. Nevertheless, the hand-eye coordination skills acquired from playing computer games clearly made a difference in this study. Computer gaming can complement conventional training of surgeon in their hand-eye coordination capabilities. The computer game does not have to be complex. We describe the design of a simple computer game that focuses on hand-eye coordination training for surgeries. A force feedback interfacing device appears to be useful in this computer game.	Singapore
39	Ulrich Norbisrath	**Mullivelled - Wrapping Computer Games into Educational Gaming Environments**	Cooperation and collaboration need a lot of positive experience and training for their devel-opment. Software production is nowadays a work where team collaboration is needed, but university teachers claim, that computer science students prefer to communicate with com-puters, not with other human beings. This article describes the attempt to use a computer game to facilitate computer science students to develop a better attitude to collaboration. For this we propose a game frame with three phases: playing alone, playing with random team members, and playing with a real collaborating team. Any existing computer game, which satisfies our prerequisites can be used in this frame. We describe an example in which we redesigned the game Bub's Brothers. We present and discuss test runs and describe our future plans.	Estonia
5	Valentina Dagiene	**Internet based busines game "HARD NUT" for multidisciplinary using**	Internet based business game is second version of BG "HARD NUT". The architecture of BG allows integrating it in different modules of Business administration study program. The unique database of all users and of all teams allows students not only to analyse, to forecast data, but also to understand structure of information system of the enterprise. Gamers could adopt it for simulated workplace.	Lithuania
29	Vincent Peters	**Why do games work? In search for th eactive substance**	During the ISAGA2007 conference in Nijmegen, The Netherlands, the foundation was laid for a book that tries to find answers to the questions "Why do games work? What is the active substance that makes them do what they do?" Now, one year later, over 20 authors from different fields, from different disciplines and from all over the world have tried to answer this question from their own specific perspective. You can imagine that this has resulted in a wide range of explanations, based on theory, applications and practice. The explanations have been sought in disciplines such as psychodrama, culture, change, learning, narratives, military, communication, homo ludens, management and many	The Netherlands

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			more. In a workshop session we want to present and discuss (some of) these answers to the question why games work. In the end we hope to reassure Dick Duke that the statement he once had to made: 'It works, that's all we have', can now be changed in: 'It works, and maybe we start to understand a little why!'	
28	Vincent Peters	**Simulation games as safe environments. Are they really?"**	Simulations games are often promoted as safe environments for learning. This attribute is used as a kind of unique selling point of simulation games. But we as game designers and facilitators find it difficult to explain to potential participants and clients what this phrase really means. It is our experience that these situations are not always safe. Of course, poor decisions in the simulation game do not directly affect the real world. The game system seems to be completely separated from the real life system. But is that true? The participants in the game are also members of the real life system and through their experiences and expectancies in link is made between the two systems. When playing simulation games we feel and see that not all participants feel completely at ease; some of them feel insecure because of the demands of the simulation game for their performance, or because they think of the consequences a poor performance in the simulation game may have for them when back in the real life situation. In our paper we will explore the concepts of 'safety' and 'security' , based on our experiences, observations and interviews with participants, game designers and facilitators. When does an adequate level of tension for the learning process turn into a counterproductive feeling of insecurity? What factors and conditions evoke such a feeling? What can game designers and facilitators do to prevent this kind of feelings?	The Netherlands
5	Vytautas Skvernys	**Internet based busines game "HARD NUT" for multidisciplinary using**	Internet based business game is second version of BG "HARD NUT". The architecture of BG allows integrating it in different modules of Business administration study program. The unique database of all users and of all teams allows students not only to analyse, to forecast data, but also to understand structure of information system of the enterprise. Gamers could adopt it for simulated workplace.	Lithuania
63	Willy C. Kriz	**EVALUATION OF SIMULATION GAMES IN THE GERMAN ENTREPRENEURSHIP EDUCATION PROGRAM "EXIST-PRIME-CUP"**	The paper presented here is mainly based on the results of applying simulation games under the auspices of the German Federal Ministry for Economy and leading companies. For entrepreneurship education a nationwide competition "exist-priMEcup" is carried out. The aim of this program (running from 2007 to 2009) is to foster entrepreneurial competencies and to influence the intention of the participants to start up an own company. Using different starup and business simulation games more than 3000 students of more than 100 universities compete in four levels (Campus, Master, Professional and Champions Cups, altogether more than 150 cups). On "Campus Cup" level teams of students compete within the same university. The best two teams of each university are allowed to enter the next level of "Master Cup" in which teams from different universities compete. Again the two winning teams of each Master Cup enter the next level of "Professional Cup" and the last level is the final cup ("Champions Cup"). In each cup level the same simulation methodology is used, but with increasing complexity of scenarios and simulated variables. For the evaluation a questionnaire is used that is handed out after the cup. However, partly different items were used in the different cup levels. We used a special codification system for the participants. This allows to link individual participants data of different cup levels (for those participants that qualify for the next levels) and makes possible to calculate paired sample results. In addition expert interviews are carried out. In the paper we describe the program, the simulation games used and the evaluation method and results of the first and part of the second year of the program. The results support major findings of entrepreneurship research about the importance of certain bundles of competencies, motivation and personality factors in predicting performance (in the simulation), increase of competencies and entrepreneurial intention	Austria

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			through the simulation game. In general simulation games can be considered a very effective educational method for entrepreneurship training. The program has an outstanding high degree of acceptance in the perspective of the teachers, the students and the managers of companies who acted as members of the jury in the cup-system.	
41	Zhongyi Sun	**Mixed Reality Table Top Games**	Mixed reality applications use techniques from computer vision, augmented reality and virtual reality to allow real and virtual objects interact physically together on a user's computer screen. This paper will describe two mixed reality applications which allow the user to play games that appear to take place on top of their physical desk. The games described are a desktop racing game and a desktop based game of ten pin bowling. In the desktop racing game virtual cars, controlled by the user, interact with both virtual (such as trees, walls and lampposts) and real objects (such as ramps and blocks). In the bowling game the player throws a real ball at a set of virtual bowling pins which react realistically as the ball appears to hit them. The paper will first describe the field of mixed reality applications, then move on to describe the development of the two aforementioned applications, and finally describe the evaluations that have been carried out so far on these games.	Ireland