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# Optimizing learning simulation to support a quinary career development model

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In a competitive global economy, career placement and advancement are based on education, training, and the ability to apply knowledge, skills, and experience within dynamic work environments. While education and training provide the foundation for knowledge and skill development, it is through learning simulation and work-integrated learning that students acquire practical experience and engage in professional development while preparing for new careers, career advancement, or career transition. Therefore, this paper presents (a) a quinary career development model designed by faculty and administrators in the United States, South Africa, Australia, and Sweden; (b) an overview of learning simulation to support career development; and (c) learning simulation activities from the four countries that can be integrated into undergraduate and graduate/post-graduate face-to-face, blended/hybrid, and online programs. (*Asia-Pacific Journal of Cooperative Education*, 2009, 10(2), 99-119).

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Economic and demographic shifts are providing new and increasing challenges to employment sectors and higher education. With the current global economic crisis and unemployment reaching record highs in many countries, millions of individuals are turning to higher education. Colleges and universities provide extensive educational and career development opportunities for individuals seeking to increase job security, displaced and dislocated workers, and the unemployed, as well as those who are now unable to retire or are being forced out of retirement due to the economy.

Recognizing that the employment market has and will continue to become increasingly competitive, higher education institutions must examine and re-develop curricula to meet the needs of traditional and non-traditional students. Curricula must provide students with more than just knowledge and skills. Curricula must support career development through defined learning outcomes and provide innovative opportunities for students to apply and actualize their knowledge and skills in real-life settings through learning simulation and work-integrated learning so ultimately they can apply their acumen and experience within organizations, agencies, corporations, or institutions upon employment. Experience acquired through work-integrated learning is critical to career development and employment.

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According to Dr. Phil Gardner, Director of the Collegiate Employment Research Institute at Michigan State University, "The bottom line is that many companies won't even look at a graduate without work experience," ("Students Turn to Co-op," 2008, ¶6).

## REVIEW OF LITERATURE

A weak global economy and shifting demographics are presenting challenges worldwide for both employers and employees: "In 2008, global financial markets experienced their worst crisis since the 1930s," according to the International Labour Organisation ([ILO], 2009, p. 9). In fact, the ILO reports that "as many as 51 million jobs worldwide could be lost this year because of the global economic crisis" and pushing the "world's unemployment rate to 7.1% by the end of 2009" (ILO, ¶1 & 2). As unemployment reaches new highs across many nations, competition for available positions is greatly increasing.

In addition to increasing unemployment rates, the United Nations reports the global population is aging. Data presented by the United Nations (2001) reveals that in 1950 there were 205 million persons aged 60 or over worldwide. In 2000, 606 million persons were aged 60 or over. While the number of "older persons has tripled over the last 50 years; it will more than triple again over the next 50 years" (United Nations, 2001, p. 11). Furthermore, the United Nations projects that by 2025-2030 the "population over 60 will be growing 3.5 times as rapidly as the total population" (UN, 2001, p. 11).

Recognizing that the global population is aging, industrialized countries will face many future challenges in regard to replacing older employees who retire as well as hiring older employees who decide not to retire but continue their employment or want to transition to a different field as result of the economy. Already in the United States, "Americans are increasingly postponing retirement or getting part-time or even full-time work in other fields after retiring" (Trejos, 2008, ¶6). With more and more retirees expecting to work longer, Trejos (2008) describes this older population as "rewiring" not retiring.

Higher education is at a critical time in history. Shifting economic and demographic factors are increasing competition and pressure on those currently employed as well as those seeking employment, particularly recent college and university graduates. As the number of unemployed, dislocated, and displaced workers increases, so does the number of those applying for positions. Research reveals that higher education institutions and work-integrated learning programs have provided training and career development opportunities at previous times of economic recession and crisis for individuals seeking to enter and re-enter the employment sector (Barbeau, 1973). However, it is critical that higher education institutions today proactively examine and re-develop curricula to educate, train, retrain, 'rewire', and retain a competitive global workforce.

The United States, Australia, South Africa, and Sweden have similar economic and demographic challenges affecting their current and future workforces. Therefore, this paper presents: (a) a quinary career development model designed by faculty and administrators in the United States, South Africa, Australia, and Sweden; (b) an overview of learning simulation to support career development; and (c) learning simulation activities from the four countries that can be integrated into undergraduate and graduate/post-graduate face-to-face, blended/hybrid, and online programs to support career development.

## QUINARY CAREER DEVELOPMENT MODEL

To proactively address global workforce and higher education challenges, a quinary career development model was designed by faculty and administrators in the United States, Australia, South Africa, and Sweden. This quinary model builds upon *five stages* of career development: education, training, learning simulation, work-integrated learning, and career placement, advancement, and transition.

Education and training provide the foundation for the career development model. During these first two stages, students are engaged in active and passive learning activities to acquire knowledge and skills that will be applied through learning simulation activities. It is through learning simulation that students begin to acquire experience in a secure and supported environment as they engage in real-life scenarios through role-plays, sociodramas, psychodramas, gaming, and reflection to develop and reinforce the knowledge and skills learned in the classroom. Through learning simulation and constructive feedback, students gain experience and confidence as they prepare for work-integrated learning (e.g., internships, cooperative education, student teaching, clinical rotations, service learning, etc). It is then through active engagement in work-integrated learning programs as well as reflective practice and feedback that students gain practical experience in preparing for career placement, advancement, or transition. The quinary model also integrates ongoing evaluation to provide critical data and feedback regarding each of the five stages.

Figure 1 illustrates the interconnection between the five stages that support the quinary career development model. While each stage independently contributes to career development, it is when all five stages are strategically integrated into curricula that they fully optimize the conceptual underpinnings of this model. Evaluation further forms an integral part of each of the stages in the quinary career development model.



FIGURE 1  
A quinary career development model developed by the authors

A description of each of the five areas of research that support the quinary career development model is provided to highlight how each stage is interconnected in preparing students for career development for today's global workforce.

### *Education*

Education is an active process involving instruction, guidance, and supervision. As indicated by Erasmus, Loedolff, Mda and Nel (2007), education involves "activities that provide the knowledge, skills, and moral values that individuals will need in the ordinary course of life" (p. 2). Education plays a vital role in today's global society for both the whole of society and for the individuals within society. In the words of Nelson Mandela, "Education is the most powerful weapon which you can use to change the world" (Quoteworld.com, n.d., n.p.). In modern society, education has been linked to economic success, global citizenship, workforce development, and to the creation and maintenance of democratic societies. According to *New Learning: A Charter for Australian Education*, a report by the Australian Council of Deans of Education (2001):

The Council believes that education will become more important not only to economic success, but to the preservation of social cohesion and democracy. The new economy will demand highly trained workers, autonomous learners and citizens both well-connected and secure in their identity. Skills of collaboration will supersede the competitive skills required in the old industrial economy and the focus will shift to interpersonal relations and communications. (p. 1)

The report further states the 'new economy' is more dependent than ever upon education and that the "competitive advantage today is built on the knowledge of a nation's workforce more than upon the old foundations of success – natural resources and fixed capital" (p. 19). Higher education, also referred to as postsecondary education, provides extensive opportunities for career development, advancement, and transition in support of workforce development. According to the *Review of Australian Higher Education Final Report* (2008):

Higher education is the site for the production and transmission of new knowledge and for new applications of knowledge. It is here that the most highly skilled members of the workforce are educated and here too that the intellectual base for new knowledge intensive industries are formed. (p. 5)

Therefore, stage one of the quinary model, *education*, provides a foundation for career development. It is through this active process involving instruction, guidance, and supervision that individuals gain knowledge, skills, and values that can be applied professionally and personally in the course of life.

### *Training*

Training, as defined by the Department of Employment in England, is "the systematic development of the attitude/knowledge/skill or behaviour pattern required by an individual to perform adequately a task or job" (Analoui, 1993, cited in "Training and Transfer of Learning," 1993 p. 4). Swanepoel, Erasmus, Van Wyk and Schenk, (2000) refer to the principal aim of training as "the improvement of employees' skills, knowledge and attitudes so that they can perform their duties according to set standards" (p. 495). Erasmus et al., (2007) refer to training as a "way in which an enterprise uses a systematic process to modify the knowledge, skills and behaviour of employees to enable it to achieve its objectives" (p. 2). From these three definitions, training can be described as a structured or guided process to modify or develop knowledge, skills, attitudes and behavior of an individual to perform a task or job at a specific level. Moreover, if the definition of *education* as provided by Erasmus et al, (2007, p. 2) is taken as "activities that provide" and the definition of *training* is taken as

“process to modify to perform at specific level,” then training could be seen as the further development and/or realignment of a person’s education to fit in with a specific environment or to fit in with a required skills set.

Education and training combined provide the foundation for a competitive workforce. As indicated by Kirby (2000), “Education and training are the main instruments available to governments and the community to prepare individuals for a rapidly-changing, increasingly-demanding world of work and to improve their employability” (p. 37). Therefore, stage two of the quinary career development model, *training*, builds upon education by providing a structured or guided process to modify or develop knowledge, skills, attitudes and behavior to further develop and/or realign a person’s education to fit in with a specific environment or to fit in with a required skills set.

### *Learning Simulation*

The term *learning simulation* was developed in spring 2006 to serve as an umbrella definition for student learning as it relates to pedagogy in the Master of Science in Higher Education in the School of Education at Drexel University. Learning simulation is defined as:

A set of educational and training techniques and strategies that engage individuals in real-life scenarios through role-plays, sociodramas, psychodramas, gaming, and reflection to develop and reinforce knowledge and skills learned in the classroom and workplace relating to problem-solving, decision-making, leadership, collaboration, and communication. (Betts, 2009, p. 20)

While simulation is not a new concept, the term learning simulation was developed to focus on pedagogical techniques and strategies associated with role-plays, sociodramas, psychodramas, gaming, and reflection activities. The term learning simulation should not be confused with course management systems (e.g., Blackboard™, Moodle™, Angel™, etc.) or online Multi-User Virtual Environments (MUVes, e.g., Second Life, Active, Lively, etc.). As noted by Betts (2009), “Learning simulation involves techniques and strategies to develop and reinforce learned skills while course management systems and MUVes support learning simulation” (p. 20).

As an analytical concept, simulation has been defined and deconstructed in many different ways. Rystedt (2002, p.7) suggests that “Simulation, as a generic term, refers to attempts to imitate the course or functioning of a specific composite process,” where the purpose is to understand the process being modeled. While simulation is often associated with information technologies or virtual reality, it has historical roots in gaming that date back as far as 3000 BC to a Chinese war game called Wei-Chi, the game of encirclement (Hsu, 1989). Further research into simulation indicates, “Simulation is a technique, not a technology, to replace or amplify real experiences with guided experiences, often immersive in nature, that evoke or replicate substantial aspects of the real world in a fully interactive fashion” (Gaba, 2004, p. i2).

With computer simulation, Vincent (1998) states, from a design perspective, a simulation consists of three interrelated components. First, the *system* deals with the delimitations of the simulation. Second, the *simulation model* constitutes the actual abstraction of the system where the elements of the simulation and their mutual interaction are specified. Third, a *simulation program* with a user-interface needs to be designed that frames the possibilities of interaction during the simulation. Additionally, the level of *fidelity* (Choi, 1997) of a simulation is important in that fidelity refers to how well the simulation model and the interface mimic the real world phenomenon that is being simulated.

Simulation easily lends itself to educational settings where learners can explore a phenomenon without risks in terms of material and personal damages that exist in a real world setting (Rystedt, 2002). Basically there are two different approaches to the use of simulation for learning purposes (Towne, 1995). First, students can engage in the creation of simulation models and thereby arrive at a better understanding of how the modeled system works (Alessi, 2000), or second, students can engage in interaction with ready-made models and in the process learn how the system functions - *conceptual simulation* (Banks, 1998), or become more skilled in participating in a social setting, or in performing a specific task - *procedural simulation* (Bennet, 1995). According to Betts (2009) "Learning simulation provides innovative opportunities for students to apply acquired knowledge and skills as well as to actualize or test concepts and theories in a variety of settings" (p. 20). Moreover, learning simulation when integrated into curricula builds upon education and training, preparing students for work-integrated learning and ultimately career placement, advancement, and transition. Therefore, stage three of the quinary career development model, *Learning Simulation*, builds upon education and training through integrating learning simulation into curricula to engage individuals in real-life scenarios to develop and reinforce knowledge and skills learned in the classroom and workplace.

#### *Work-Integrated Learning*

Work-integrated learning (WIL) is often used as an umbrella concept to encompass a wide range of educational models with the common denominator that engages students in professional development as part of his or her education. Popular models for WIL include cooperative education, internships, and preceptorship (Budgen & Gamroth, 2008). According to the World Association of Cooperative Education (WACE) (n.d.): "Work Integrated Learning combines professional work experience with classroom studies in many forms, including: research, internships, study abroad, service learning, student teaching, clinical rotations, community service, industry attachments, cooperative education, and professional work placements" (§3).

In a sense, WIL can be viewed as a pedagogical philosophy (Svensson et al. 2007) that emphasizes the values and qualities that come from integrating academic studies with work-life experiences. However, the wide range of WIL models demonstrates there are large differences between countries, and also between different academic fields. Also within a certain WIL tradition the underlying rationale can change over time. Cooperative education (co-op) is a good example, where originally it was developed in the early 20th century as an economic model that would make engineering schools affordable for middle class males. Later the rationale evolved to meet new challenges such as the increased number of women in the labor market post World War II (Houshmand & Papadakis, 2006). Today, discussions on the benefits of co-op tend to emphasize the learning outcomes and the increased employability rather than mere financial arguments.

Stage four of the quinary career development model, *work-integrated learning*, builds upon education, training, and learning simulation so individuals can begin integrating knowledge, skills, and experience into productive work-integrated learning in a field related to their academic or career goals in preparation for career placement, advancement, and transition.

### *Career Placement, Advancement & Transition*

Higher education institutions provide extensive opportunities for individuals to complete degrees, certificates, and/or certification. As the number of non-traditional students enrolled in higher education outpaces the number of traditional students, higher education must extend its programming and career development services to meet the needs of individuals seeking first time career placement, advancement, and transition.

For undergraduate students, career placement is becoming increasingly challenging with the weak global economy and greater competition for fewer positions. Concurrently, the requirement of a master's degree is becoming increasingly more common for career advancement in mid- and senior level management positions. Therefore, higher education provides extensive opportunities for career development, placement, and advancement. Additionally, higher education provides new opportunities for career transition for dislocated workers, displaced workers, individuals who are in fear of losing their jobs, and the unemployed. Career transition is also important for older individuals who must continue working or may be seeking new careers in a different field, particularly, those individuals who are now forced out of retirement due to the economy.

Higher education institutions provide extensive services for career placement, advancement, and transition. Career development centers, such as at Drexel University (United States), Victoria University (Australia), University of Johannesburg, (South Africa), and University West (Sweden), provide extensive career services for students that may include, but are not limited to, career counseling, career workshops, career fairs, group and one-on-one training sessions (interviews, cover letters, portfolios, etc.), and access to national and international employment databases. Additionally, increasing numbers of higher education institutions worldwide are offering career services for recent graduates and alumni that may include seminars, networking events, workshops, career counseling, and online resources. With the ubiquity of technology and advancements in telecommunications, students and alumni readily have access to career services through higher education institutions as they embark on career development, placement, advancement, transition, and ongoing professional development.

The fifth stage of the quinary career development model, *Career Placement, Advancement & Transition*, represents the last of the five stages. However, the model does not end at this point. Following career placement, advancement and transition, the model will begin again at stage one, *Education*, as individuals begin ongoing professional/career development. Education, training, learning simulation, and work-integrated learning will continue to provide new knowledge, skills, and experience needed for career placement, advancement, and transition.

### *Evaluation*

As with any new initiative or program, formative evaluation and summative evaluation provide valuable data for continuous quality improvement. Data driven decision-making is essential in evaluating the efficacy of instruction, course materials, activities, etc. It is also important to assess whether or not learning outcomes are being met through courses and programming. Collected data and feedback enable administrators and faculty to identify strategies, methods, and practices that should be replicated as well as revised. For programs



that integrate new career development strategies and/or new learning simulation activities into curricula, such as presented in this paper, formative and summative evaluation should be incorporated.

Formative evaluation is conducted during a course or program to assist with development and improvement (Scriven, 1967). Summative evaluation is conducted at the end of a course or program to measure effectiveness and value (Scriven, 1967). While formative evaluations are typically internal, summative evaluations are external. According to Trochim (n.d.) formative evaluations examine the delivery of a program or technology, quality of implementation, and assessment of the organizational context, procedures, inputs, etc. Formative evaluation includes needs assessment, process evaluation, implementation evaluation, and so on. Summative evaluations, as indicated by Trochim (n.d.), examine effects, outcomes, overall impact, estimation of costs, and so on. Summative evaluation includes outcome evaluation, impact evaluation, cost-effectiveness and cost benefit analysis. When formative and summative evaluations are integrated into programs, they provide invaluable opportunities to collect benchmarking data and conduct ongoing assessment based on new programs and initiatives to measure engagement, delivery methods, efficacy, cost-effectiveness, and outcomes.

#### OVERVIEW OF LEARNING SIMULATION TO SUPPORT CAREER DEVELOPMENT

Learning simulation is central to career development and in preparing students for work-integrated learning, career placement, advancement, and transition. Typically learning simulation activities mirror current or emerging issues and problems occurring in the workplace, thus challenging students to actively engage in evaluation, decision-making, problem-solving, collaboration, communication, resolution, and so on. Through innovative activities and constructive feedback, students gain experience and confidence in a secure and supportive environment as they prepare for work-integrated learning (e.g., co-ops, internships, clinical rotations, study abroad, etc.) and future career placement. To better understand how learning simulation builds upon education and training, it is important to provide an overview of role-play, sociodramas, psychodramas, gaming, and reflection.

##### *Role-Play*

*Role-play* is used to create simulated scenarios where individuals are assigned specific roles to act out defined situations with a system of rules or guidelines. Role-play allows a student to be exposed to the various sides of an issue and allows students to be more involved in the process of learning (Goad, 1982, p. 17). Through role-play, Hsu (2004) states “It is hoped that students gain a better understanding of the roles and relationships as well as a better awareness of their own activities” (p. 409). Therefore, role-play is then conducted in a “risk free” environment (Eitington, 2002, p. 105).

In a training situation, Eitington (2002) states, role-playing “allows the receipt of adequately objective feedback about one’s performance so that one can learn from what others (peers, the trainer) see, hear, and feel” (p. 105). Role-play also integrates reflection and self-reflection. For example, participants must consider how to carry out the role they have been assigned through their own experience or reflection. Additionally, students must consider how they would act or someone else would act in the assigned role. Based on the role-play, constructive feedback is then provided for further reflection and self-reflection.

Role-play can include *individual* and *interactive* exercises where students research historic, current, or emerging issues from the role of assigned *enactors*. Within *individual role-play*, students can: (a) write position papers, (b) write and deliver speeches, (c) write letters, (d) develop and present problem statements, and so on. With *interactive role-play*, students take on the role of assigned enactors and participate in real-life or hypothetical scenarios that involve: (a) debate, (b) conflict management, (c) persuasion, (d) crisis management, (e) problem solving, and so on. In "Role-Playing Simulations in Urban Planning Education: A Survey of Student Learning Expectations and Outcomes," Meligrana and Andrew (2003) discuss how specific planning skills may be effectively taught through the use of role-playing. They conclude that role-playing can provide a multifaceted learning experience including, multiple perspectives in planning, how to "think on one's feet," and how to relate laws in a particular planning issue (Meligrana & Andrew, 2003, pp.105-106). According to Van Ments (1991), "As a technique, role-play has proved to be very powerful. It is highly motivating and enables students to put themselves in situations they have never experienced before" (p. 10).

#### *Psychodrama and Sociodrama*

The terms *psychodrama* and *sociodrama* were conceived and developed by Dr. Jacob L. Moreno (1889-1974). According to the British Psychodrama Association (BPA), the term psychodrama is defined as follows:

Psychodrama employs guided dramatic action to examine problems or issues raised by an individual. Using experiential methods, sociometry, role theory, and group dynamics, psychodrama facilitates insight, personal growth, and integration on cognitive, affective, and behavioral levels. It clarifies issues, increases physical and emotional well-being, enhances learning and develops new skills. (n.d., ¶1)

The term sociodramas is defined by BPA (n.d.) as follows:

Sociodrama is used with groups wishing to explore common issues in training, organizations, community, educational and political contexts. It uses many of the same techniques as psychodrama to enable individual and group learning and change. (¶6)

According to Sternberg and Garcia (2000), Moreno "viewed each person as a composite of the roles he or she plays" (p. 5). Therefore, "Moreno devised two modalities to facilitate exploration of role: sociodrama for collective components and psychodrama for private components" (Sternberg & Garcia, 2000, p. 5).

Psychodrama is often associated with psychology, psychotherapy, and cathartic therapy; however, it is also used in business and education. Psychodrama, deals with feelings and thoughts. Moreover, psychodrama focuses on the individual and his or her personal problems, issues, and/or challenges while sociodrama focuses on collective issues. While psychodrama is viewed as a therapeutic modality, it can be used for education and training through recreating real situations that individuals act out involving deeply expressed emotions. For example, psychodrama is used by the National Psychodrama Training Center to prepare trial lawyers.

Sociodrama brings together individuals through a collective issue or process that involves spontaneity and creativity. Sociodrama shares similarities to role-play; however, sociodrama involves specific techniques that broaden and deepen the scope of the enactment (Sternberg & Garcia, 2000). Sociodramas may include *mock* trials, sales, board presentations, technical visits, interviews, medical visits, and so on. Both psychodrama and sociodrama are both important to human development.

### Gaming

*Gaming* as defined by Hsu (2004) “consist of interactions among groups of players (decision makers) placed in a prescribed setting and constrained by a set of rules and procedures. The behavior and the interaction can possibly involve competition, cooperation, conflict, or even collusion” (p. 409). El-Shamy (2001) defines a training game as “a competitive activity played according to rules within a given context ... in which the skills required and competencies being built in the game are those that are applicable beyond the game itself to the particular subject matter being studied” (p. 17).

Gaming in the military, education, healthcare, and public policy can assist individuals to gain experience by enacting real-life scenarios. According to Squire (2005), “Over the past few years, games have gone from social pariahs to the darlings of the media, technology, and now educational industries” (¶1). As further noted in USA Today, “Twenty years after video flight simulators first introduced most gamers to the idea that video games could be used to learn real skills, advances in computer graphics and the ready availability of broadband lines have spurred interest in a new generation of ‘serious’ video games” (¶8). Today, gaming is a multibillion-dollar industry that extends beyond the classroom and computer to wireless data usage and the explosive emergence of mobile gaming.

### Reflection

Thinking as described by Dewey (1933) is not a case of *spontaneous combustion*, but rather something that is evoked causing doubt that leads one to carry on systemic and protracted inquiry. Reflective thinking involves overcoming the inclination to accept suggestions at their face value and suspending judgment during further inquiry (Dewey, 1933). While experience plays a critical role in learning, “experience alone is not the key to learning” (Boud, Keogh & Walker, 1985, p. 7). Reflection is also vital to learning, and according to Johns, Joiner, Stenning, Latchford, Madden, Groom and Freshwater (2002), “guided reflection is a process of self-inquiry to enable the practitioner to realize desirable and effective practice within a reflexive spiral of being and becoming” (p. 3). In the text *Guided Reflection*, Johns et al. (2002) write:

Guided reflection is the weaving of being and becoming. *Being* is the reflection of the practitioner’s clinical practice as known through reflection – the stories written in a reflective journal or shared in guided reflection. *Becoming* is the reflection of the practitioner’s journey from where she is at now to where she wants to be, as known by, looking back through the unfolding series of reflected-on experiences to perceive self as transformed or not. (p. x)

Hence, reflection turns experience into learning as well as evokes and fosters systemic and active inquiry.

### LEARNING SIMULATION ACTIVITIES FROM THE USA, SOUTH AFRICA, AUSTRALIA, AND SWEDEN TO SUPPORT CAREER DEVELOPMENT

Learning simulation is integrated into curricula in academic programs in the United States, Australia, South Africa and Sweden to prepare students for work-integrated learning, career placement, advancement, and transition. Examples of learning simulation are provided from Drexel University’s Masters of Science in Higher Education (MSHE) Program (United States), Victoria University’s Bachelor of Sport and Recreation Management Career and Professional Development Program (Australia), University of Johannesburg’s National Diploma: Town and Regional Planning (ND TRP) Programme (South Africa), and University West’s Digital

Media Programme and Information Systems Programme (Sweden). Drexel University's MSHE Program is offered to graduate students through two formats: fully online and blended (also referred to as hybrid). Victoria University's Bachelor of Sport and Recreation Management Career and Professional Development Program is offered to students on campus. University of Johannesburg's ND TRP Programme is offered to undergraduate students on campus. University West's Digital Media programme is offered to undergraduate students on campus, and the Information Systems Programme is offered to undergraduate and graduate students through both on campus and online formats.

#### *Role-Play Examples*

##### Online Weekly Discussion Boards – Drexel University

Role-play is integrated into weekly text and voice discussion boards in Drexel University's MSHE Program. Throughout each 10-week quarter, 50% to 75% of the discussion boards involve role playing where students participate in discussions, debates, or prepare mini-presentations on historic, current, or emerging topics relating to the weekly lectures. The discussion board role-plays are designed to reinforce strong written and oral communication skills on topics that are prevalent across higher education institutions. For the first discussion board posting, students are required to make a position statement with supporting rationale based on the lecture materials, readings, and research outside of the classroom. Students are then required to respond to their classmates, but their postings must focus on the content of the text or voice posting. Therefore, students must either agree, disagree or constructively challenge cited examples from the posting. Students are then encouraged to further respond to classmates to expand the discussion. The discussion board role-plays support and reinforce stated course outcomes relating to research, communication, and knowledge acquisition of lecture materials as well as historic, current, and emerging issues.

##### Role Play Assessments – University West

The Digital Media Programme at University West offers a course that focuses on basic techniques regarding planning, production, and post-production of a video. There is a specific course module on video production in which role-play is connected to course assessment as a project. For the role-play, each student has to produce a video as the primary deliverable. Additionally, the student has to take on multiple roles for this role-play project. First, the students "pitch" their own video production to a panel consisting of two peers, acting the roles as: (a) the customer of the production, and (b) a journalist who is supposed to review/critique the video. Then, the students act out the roles of: (c) a customer and (d) a reviewer of videos produced by two of their peers. The shift in perspectives as each learner is forced to undergo when articulating their views on a video widens and enhance the learners' reflections on how to view video production. While the role-play, at present is acted out in face-to-face settings, there are plans to move the concept into a distance educational setting where a learning environment such as Second Life may be used in the near future.

### *Psychodrama Examples*

#### Mock Interviews – Victoria University

Students enrolled in the Bachelor of Sport and Recreation Management Career and Professional Development Program at Victoria University are required to participate in a face-to-face psychodrama on campus in preparation for job interviewing. For this activity, students attend a two-day workshop and are told they each have a formal interview scheduled for the second day. In preparation for the interview, students are asked to reflect on their past and consider which achievements they can use to effectively self-market themselves. Students are encouraged to prepare and rehearse a script for the interviews as well as dress appropriately for the interview. A “before” photograph of each student is taken on Day One of the workshop. On Day Two, students come to class as if they were going to a corporation or organization for an actual interview. Interviews are first conducted on Day Two in front of a panel of three students and then they are conducted in front of the entire class with all of the students serving as part of the search committee. After the first small panel interview, the students provide coaching for one another. For the interview performed in front of the entire class, the lecturer and all students provide written critiques of the interview.

The collected feedback is gathered and provided to the students for reflection. A photograph is taken of each student on Day Two, the day of the interview. Students are given a hard copy of the “pre-interview” photo and the “interview-day photo” so they can see their transformation from student to professional. As part of their own reflection, students are asked to provide a self-critique of their own interview and to critique their professional image photograph with a grade and comments/suggestions for any improvements. Playing the role of interview coach and supporting peers as well as the interviewer enables students to gain valuable insights from one another and use the feedback and self-reflection to refine their own interview skills.

#### Job Application & Mock Interviews – Drexel University

Drexel University’s MSHE Program incorporates psychodrama into EDHE 606: Higher Education Career Development. In EDHE 606 students are required to identify and apply for a *real job* posted in the Chronicle of Higher Education that would be considered as their *next professional career step* upon graduation (e.g., new career placement, advancement, or transition). Students submit a cover letter, resume, and professional biography along with an ePortfolio to Drexel’s Steinbright Career Development Center (SCDC). Upon submission of the *application*, students receive an email from the SCDC stating they are finalists for the position; however, due to the economy and budget cuts, they will have to participate in a “live” synchronous interview through Horizon Wimba Classroom or Second Life. They present to a search committee a PowerPoint™ presentation including: (a) a self-introduction, (b) highlights of their professional skills and experience, and (c) why they are the best candidates for the job. Upon completion of the live interviews, the search committee members provide students with evaluations and constructive feedback on the submitted application and the interview.

### *Sociodrama Examples*

#### Mock Planning Hearings – University of Johannesburg

The ND TRP Programme at the University of Johannesburg incorporates sociodrama into the course LPS211: Legal Procedures 2 through Mock Hearings. For the sociodrama, the lecturer designs a scenario for the assignment. An example of a scenario is as follows:

Client X, being the owner of property A, wants to change the zoning of his/her property. S/he approaches you to compile the necessary application(s) for the change in land use. However, there will be objections. A mock hearing will be held on a specific date. Moreover, a specific land use would be allocated that needs to be applied for.

Students are divided into groups and each is assigned a specific role. The roles typically include: (a) the Consultant team (the applicant team), (b) Objectors from the Community (Residents), (c) Objectors from Businesses, and (d) the Local Authority. The number of role-enactors can be extended depending on the size of the group with for example environmental groups, Ratepayer Associations, and Chamber's of Commerce.

Each group has to investigate relevant legislative frameworks, policy documents, site-specific issues, and so on, in preparation of the mock hearing to be held. The students will inter alia have to ensure that the correct legislation is used and the correct processes are followed. Students are required to obtain real data pertaining to the application site (e.g., policies applicable to the area, property title deeds, existing uses, surrounding uses and existing property rights). A site inspection is also required to obtain such information. Documents must then be submitted on a predetermined date and these documents are circulated to the other parties (groups) in preparation of the hearing. All the groups must prepare their presentations/arguments to be presented in front of a Hearing Panel. Those groups that simulate the residents are normally given much more flexibility in their approach, as they represent so-called non-professionals. They typically do not stay within the framework set for the professional and are much more receptive to social and emotional reactions to issues raised by the consultant team.

The panel, consisting of the lecturer(s) and practitioners, then evaluate the proposals and arguments made by the different groups in favour of the application as well as against the application. The evaluation is made in terms of comprehensiveness and appearance of the documentations submitted, process followed, the validity of the arguments, presentation skills, the ability to convince the panel of their viewpoint or argument and the existing policies applicable in the area. The mock hearing follows the same rules as at a proper development hearing. Through this process, students learn to implement legislation and the processes set out in the legislation as well as followed at hearings. Additionally, they learn to address issues and arguments made at the hearings (thus to think on their feet) and to react to "emotional" arguments from the residents group.

#### Peer-Reviewed Research Conference – University West

In first and second year courses of the Information Systems and Digital Media Programme at University West, a sociodrama replicating a peer-reviewed research conference is assigned. Prior to the beginning of the sociodrama, students are instructed briefly how to prepare for an actual research conference by reading and referencing academic texts as well as how to structure a scientific paper.

For this peer-reviewed research conference, each student is required to write a research paper that is framed by an overall topic (e.g., future use of Information Technology, contemporary internet culture, understanding social software, etc.). In addition to submitting a research paper, the student also takes on the role of a conference reviewer. There are six distinct steps to the sociodrama.

- First, a specific deadline is disseminated to students with dates for the submission of draft papers using a document template that is restricted with respect to number of words and other format guidelines;
- Second, a double-blind review process is organized where every submitted paper is reviewed by three randomly assigned students/reviewers. Reviewers must articulate the major strengths and weaknesses of the paper, along with detailed recommendations for improvements. Furthermore, the reviewer grades the paper with respect to readability, contribution to science, methodology and whether they recommend the paper for plenary presentation or not. Finally, based on the quality of the paper, the reviewer states: accept as is, accept with minor revisions, accept with major revisions, or reject;
- Third, the instructor then plays the role of the conference editor and consequently summarizes the incoming reviews into editorial reports that are distributed to all authors. Each author can then reflect on the received reviews and prepare for the next stage of the process;
- Fourth, a new deadline is sent to the authors/students for submission of the final version of each paper. The final papers must include comments outlining to the editor on how reviewers' issues were addressed;
- Fifth, the instructor/editor selects which papers are to be presented in plenary sessions, and decides on which papers need to be supplemented in order to pass the course, including comments to the authors are framed as a second editorial letter; and
- The sixth and final step is the actual acting out of the conference where four selected papers are presented as keynote addresses, and the remaining papers are discussed in parallel sessions in smaller groups of students.

### *Gaming Examples*

#### Automotive Industry Training Game – University West

At University West, a research project on virtual training has developed into an online game that focuses on training automotive industry operators. A simulated model is accessed through the Internet that enables users to take on the virtual role of an automotive industry operator since no physical hardware is accessible prior to a new car model actually appearing on the assembly line. The model involves the virtual automotive operator in both cognitive and practical dimensions to develop and reinforce skills in order to enhance the operators' motivation and engagement through ongoing training.

Each gaming session involves users in choosing correct operations in the correct order for a given configuration of a car. Prior to engaging in the simulation, students are provided with the correct sequence for each station on the assembly line as described in a standard operating sheet (SOS) since the SOS serves as a foundation for each game session. Users are then presented with four alternatives on what would be the next correct operation, and receive feedback corresponding to the status of his/her answer.

This gaming assignment is essential to training automotive operators since it requires students to learn the sequence of operation – the correct tool, for the correct operation, in the correct order. Moreover, students must master the assembly sequence in a sufficiently short period of time. The gaming simulation replicates the cognitive aspects in automotive

industry in a fairly realistic way, but practical training to improve in speed still relies on having access to physical hardware. The score of the session is based on the number of correct choices as well as the time used. Performances are also logged in a high-score list where operators of the same shift compete with each other. In the advanced mode of the game, the operators can also train the “finesse” of their station to target various markets such as Europe or North America that may require different automotive specifications. All game variations and scores are documented in a Job Element Sheet (JES) which is the template for this simulation game. The game simulation is at present used for training assembly operators at the SAAB plant in Trollhättan, Sweden, and is planned to be integrated into the Production Engineering programme at University West in the fall of 2009.

#### Future Gaming Options - Drexel University

To date, the MSHE Program at Drexel University has not incorporated gaming into the curriculum. However, the MSHE Program is currently reviewing two gaming simulation programs. The first program is EthicsGames.com (see, [www.ethicsgame.com](http://www.ethicsgame.com)). This program provides students with ethics simulations through short, relevant training scenarios through a secure server in which students enter a class or game code to access one or more simulations via the Internet. “EthicsGame simulations teach students how to recognize ethical situations, analyze multiple options for action, identify the best solution, pause for reflection and communicate the solution to interested stakeholders” (Ethics Game, n.d., n.p.). The MSHE Program is also reviewing Virtual University (Virtual U - [www.virtual-u.org](http://www.virtual-u.org)). Virtual U is a software tool that “models the attitudes and behaviors of an academic community” and provides students with an opportunity to take on the role of various players (e.g., president, vice president, dean, etc.) (Virtual University, n.d., ¶1). With the Virtual U gaming software:

Players determine tuition cost and allocate resources for all components of the university including teaching, research, financial aid, faculty salaries, facilities, intercollegiate athletics, and fund raising. Players check their progress as time goes by and receive a letter of review from the university board every ‘year,’ according to the rate of time passage established by the player. (Virtual-U, n.d., ¶2)

There are 10 simulation scenarios that can be selected, such as, improve research performance, reduce tuition, respond to enrollment shifts, enroll more minority students, balance the budget, and so on.

#### *Reflection Examples*

##### Mock Hearing Reflection – University of Johannesburg

As previously described, the ND TRP Program at University of Johannesburg requires students to participate in a sociodrama mirroring a real-life planning approval process concluding with a mock hearing. As a separate but connected assignment, students are required to engage in reflection. Following the mock hearing, students submit a reflective paper highlighting what they learned during the sociodrama activity. Additionally, the class as a whole participates in a reflection activity in which the lecturer asks the students to reflect on their experience of the process, of obtaining information, compiling arguments, and of the process followed at the hearing. As the students collaboratively reflect on their experiences and the process, the lecturer addresses specific aspects in each group’s presentation to initiate further discussion and reflection.



### Key Learning Points & Reflective Learning-based Course – Drexel University

Drexel University's MSHE Program integrates reflective learning into all courses through Key Learning Points (KLPs) in Week 5 and Week 10. Students have 3-4 minutes to provide a recorded voice reflection in a discussion board highlighting what they have learned and applied professionally and/or academically over the first five weeks and second five weeks of the course. Students are told not to write out and read their KLPs; however, they can use notes. The purpose of the KLPs is to have students reflect on course content as well as how they have synthesized and applied new knowledge and skills in a professional environment. Additionally, the KLPs reinforce the development and application of oral communication and reflective practice.

Reflection is integrated into EDHE 600: Human and Organizational Performance in the MSHE Program. During this course, students conduct interviews nine of the ten weeks during the quarter with different divisions and/or departments within their place of employment or other higher education institutions to learn more about how the divisions and/or departments function as well as their role within the institution/organization. At the end of weeks 3, 6 and 10, students are required to write a 3 to 5 page reflection on what they learned through the interviews. As part of the week 10 reflection, students are required to provide a summative reflection of the quarter and their professional growth through the interviewing process. Through interviews and reflection, students learn first-hand about the organizational structure of higher education institutions as well as their own professional growth over a 10-week period.

### FINDINGS

Feedback and data collected from programs in the United States, Australia, South Africa, and Sweden indicate that the integration of learning simulation into curricula does optimize education and training, thus preparing students for work-integrated learning, and career placement, advancement, and transition.

Drexel University's MSHE Program was launched in fall 2005. To date, 44% of MSHE students who completed their co-ops between 2007 and 2008 were promoted, transitioned into new positions, or had their job responsibilities increased based on their co-op experience. Comments shared through reflective papers by students who were enrolled in EDHE 606: Higher Education Career Development in 2008 illustrate how learning simulation supports professional growth and development:

- The mock interview left me with a greater understanding of what is expected in the professional world. I have been on several interviews in my lifetime and I have to say that the mock interview helped me better prepare for future professional endeavors;
- The most beneficial learning experience for me has been developing the e-Portfolio and participating in the mock interview in the Live Classroom. It has been more than twelve years since anyone has critiqued my resume or interviewed me for a position in higher education;
- The higher education career development course was filled with practical information that one could utilize in his or her career. The most valuable experience for me was the e-Portfolio experience because all the documentation was electronic, the required documentation was of practical relevance, and the follow-up mock interview and feedback helped identify strengths and weaknesses in this process; and
- EDHE606 has been one of my favorite courses that I have taken and has easily been one of the most important classes that I have taken on any level of education.

Lastly, the 2009 MSHE Annual Student Survey, which included 186 students and had a 62% response rate, revealed that 97% of students would recommend the MSHE Program to individuals seeking career advancement in higher education and 91% of the students would recommend the MSHE Program to individuals seeking to transition into higher education.

At Victoria University, a 2006 career survey of graduates from the School of Sport and Exercise Science was conducted and 200 graduates responded. Respondents were from the three discipline areas in the School of Sport and Exercise Science at Victoria University. Responses revealed high employment outcomes with 85% of Recreation Management students, 100% of Human Movement/Physical Education students, and 98% of Sports Administration students reporting they were currently employed. Career satisfaction was also reported as fairly high with 78% Recreation Management graduates satisfied and 14% neutral; 82% Human Movement/Physical Education students satisfied and 15% neutral; and 83% Sports Administration satisfied and 10% neutral. When asked about the degree of difficulty finding employment after graduation, respondents gave the following responses that indicate that job hunting after graduation was reasonably difficult and hence the importance of self-marketing training to prepare students to transition successfully from university to employment. Thirty percent of Recreation Management students reported that it was difficult to find employment and 23% stated neutral; 21% of Human Movement/Physical Education graduates reported it difficult while 13% stated neutral, and 39% of Sports Administration students reported it difficult and 18% stated neutral (Dressler et al., 2008).

At the University of Johannesburg, it can be inferred from discussions with employers that they would prefer to appoint a student/graduate from the ND TRP Programme based on previous hiring of ND TRP students and knowing that these students are able to handle a certain caseload from the date that they are appointed. Course evaluations from ND TRP students are traditionally very high in terms of satisfaction with the instruction, assignments, and overall course. It should be noted the ND TRP Programme is currently discussing the design of a data collection process to gather quantitative and qualitative data and feedback regarding the use of learning simulation in the curricula from students and employers.

At University West, learning simulation has been evaluated through post-course questionnaires in three groups of students, and results indicate that the authenticity and the relevance of the examination are high. Furthermore, learners have articulated how the shift in perspective gradually makes their peer-reviews more and more mature. However, some students also raised concerns regarding how the quality of their work is not objectively assessed, since it involves the performance of other students. Additionally, the automotive training game has been evaluated in four different stations at the SAAB plant in Trollhättan, Sweden through both interviews with operators as well as quality measures regarding the number of assembly mistakes the operators make after game training. The interviews show that all operators are positive towards training through gaming, even though the attitudes are slightly less positive for older operators. The quality measures show a significant improvement regarding finesse for gamers compared to non-gamers.

## RECOMMENDATIONS

Education and training provide a strong foundation for knowledge and skill acquisition; however, it is through building upon education, training, and learning simulation that students can more actively prepare for work-integrated learning and ultimately career

placement, advancement, or career transition. Therefore, it is recommended that higher education institutions, governments, businesses, and organizations collaborate to develop curricula that prepare students for *careers*, not just jobs, where they can successfully apply their knowledge, skills, and experience within dynamic work environments.

With the ubiquity of technology and advancements in telecommunications, online and blended (hybrid) education is becoming more prevalent in higher education. Therefore, higher education institutions must consider how to optimize curricula and career development in online and blended formats. It is also recommended that higher education institutions develop strategies to extend student career development services, as well as other support services, to students enrolled in online and blended programs. Through conceptual frameworks, such as Online Human Touch, higher education institutions can personalize the online and blended education experience by *bringing the campus* worldwide to engage, connect, and retain the increasing number of students returning to colleges and universities for career development (Betts, 2008).

Lastly, it is critical to incorporate evaluation into curricula and programming to gather feedback and benchmarking data from students, employers, and faculty, lectures, and adjuncts. The data provided from the four institutions regarding the quinary career development model is limited since it is descriptive and much is qualitative. However, evaluative question sets are being developed that can be integrated into courses and programs to gather more formative and summative robust data relating to the quinary career development model. It is through the evaluation process that faculty and administrators can examine the effectiveness of instruction, lecture materials, and learning simulation as they prepare students for work-integrated learning, career placement, career advancement, and career transition.

## CONCLUSIONS

Higher education is at a pivotal time in history. With a weak global economy and an aging population, it is critical that higher education institutions provide new opportunities for those seeking first-time employment and those seeking retraining through outcomes-based curricula and experiential learning. Students today need more than knowledge, skills, and a degree to gain employment – they need *experience*. Individuals who are unemployed are particularly vulnerable in this economic crisis and many are turning to higher education for retraining opportunities. As revealed by the ILO (2009), “Experience shows that the longer people stay out of work the more their *employability* deteriorates, making it progressively harder to get back into work” (p. 7). Dislocated and displaced workers as well as older workers opting not to retire are also turning to higher education for retraining and *rewiring* opportunities. Higher education institutions must examine and re-develop curricula to provide students with the necessary knowledge, skills, and experience for career placement, advancement, or transition. Additionally, students graduating from higher education institutions need to be globally competitive. As stated by Professor Derek van der Merwe (2008), Pro Vice-Chancellor and Vice-Principal of the University of Johannesburg:

It simply is a fact that our students have to be globally competitive. They have to be able to learn independently, in order to increase their skills and their knowledge base. But they also need to be connected with peers, not only in their own classroom, but with students in similar situations in other parts of the world. (Freedman, p. 10)

Career development is essential for preparing students to work in a competitive global economy. It is through innovative curricula and career development that higher education

institutions can positively contribute to workforce development and global economic stability.

## REFERENCES

- Alessi, S. (2000). Designing educational support in system-dynamics interactive learning environments. *Simulation & Gaming*, 31(2), pp. 178-196.
- Analoui, F. (1993). *Training and transfer of learning*. Hants, UK: Avebury Ashgate.
- Australian Bureau of Statistics. (2008) *Population projections, Australia, 2006-2101*. Retrieved February 1, 2009, from <http://acde.edu.au/publications.html>
- Australian Council of Deans of Education. (2001). *New learning: A charter for education in Australia*. Canberra. Retrieved December 9, 2008, from <http://acde.edu.au/publications.html>
- Australian Government Department of Education, Employment and Workplace Relations. (2008). *Australian jobs 2008*. Retrieved November 24, 2008, from [www.workplace.gov.au/NR/rdonlyres/FA91FB91-73A8-4F5D-83CF-D391BEDF3538/0/AustralianJobsforWorkplace.pdf](http://www.workplace.gov.au/NR/rdonlyres/FA91FB91-73A8-4F5D-83CF-D391BEDF3538/0/AustralianJobsforWorkplace.pdf)
- Australian Government Department of Education, Employment and Workplace Relations. (2008). Review of Australian higher education final report. Retrieved on January 15, 2008, from [http://www.deewr.gov.au/HigherEducation/Review/Documents/PDF/Higher%20Education%20Review\\_one%20document\\_02.pdf](http://www.deewr.gov.au/HigherEducation/Review/Documents/PDF/Higher%20Education%20Review_one%20document_02.pdf)
- Australian Government Department of Immigration and Citizenship. (2008). Fact sheet 4-More than 60 years of post-war immigration. Retrieved January 16, 2009, from <http://www.immi.gov.au/media/fact-sheets/04fifty.htm#today>
- Australian Government Department of Immigration and Citizenship. (2008). Fact sheet 15-Population projections. Retrieved December 16, 2008, from <http://www.immi.gov.au/media/fact-sheets/15population.htm>
- Australian Government Department of Treasury. (2004). *Australia's demographic challenges*. Retrieved December 8, 2008, from [http://demographics.treasury.gov.au/content/\\_download/australias\\_demographic\\_challenges/australias\\_demographic\\_challenges.pdf](http://demographics.treasury.gov.au/content/_download/australias_demographic_challenges/australias_demographic_challenges.pdf)
- Aversa, J. (2009). Top bank predicts further worsening of economy in '09. AP Economics. Retrieved on March 1, 2009, from <http://finance.yahoo.com/news/Forecasters-Economy-worse-in-apf-14440000.html>
- Banks, J. (1998) *Handbook of simulation: Principles, advances, applications, and practice*. New York: Wiley.
- Bennet, B.S. (1995) *Simulation fundamentals*. Mampstead, NJ: Prentice Hall.
- Barbeau, J.E. (1973). *Cooperative education in America: Its historical development, 1906-1971*. Washington, DC: Education Resources Information Center. Institute of Education Sciences. US Department of Education.
- Bernstein, R., & Edwards, T. (2008). An older and more diverse nation by midcentury. US Census Bureau, Washington, DC. Retrieved on January 6, 2009, from <http://www.un.org/esa/population/publications/worldageing19502050/>
- Betts, K.S. (2008). Online human touch (OHT) instruction and programming: A conceptual framework to increase online student engagement and retention in online education, Part 1. *Journal of Online Learning and Teaching*, 4(3), pp. 399-418. Retrieved on March 25, 2009, from [http://jolt.merlot.org/vol4no3/betts\\_0908.pdf](http://jolt.merlot.org/vol4no3/betts_0908.pdf)
- Betts, K.S. (2008). Beam me up Scotty: Online graduate co-op and professional development through simulation. World Association of Cooperative Education (WACE) & National Executive of the Australian Collaborative Education Network (ACEN) E-Proceedings, Sydney, Australia, 35-40. Retrieved on March 1, 2009, from [http://www.acen.edu.au/images/resources/conferences/wace\\_conference\\_08/e-proceedings.pdf](http://www.acen.edu.au/images/resources/conferences/wace_conference_08/e-proceedings.pdf)
- Betts, K.S. (2009). Changing higher education landscape: Increasing demand for online and blended Education. *Student Success*, April 2009, 11-14. Educational Policy Institute: Virginia Beach, VA. Retrieved on June 11, 2009, from <http://www.educationalpolicy.org/pub/default.htm>
- Betts, K.S. (2009). Charting new frontiers: A conceptual framework for online students in Drexel University's master of science in higher education graduate co-op. *Journal of Cooperative Education and Internships*, 43(2), 17-31.
- Boud, D., Keogh, R., & Walker, D. (1985). *Reflection: Turning experience into learning*. London: Kogan Page.
- Bradley, D., Noona, P., Nugent, H., & Scales, B. (2008). Review of Australian Higher Education Discussion Paper. Retrieved December 15, 2008, from [http://www.dest.gov.au/NR/rdonlyres/06C65431-8791-4816-ACB9-6F1FF9CA3042/22465/08\\_222\\_Review\\_AusHEd\\_Internals\\_100pp\\_FINAL\\_WEB.pdf](http://www.dest.gov.au/NR/rdonlyres/06C65431-8791-4816-ACB9-6F1FF9CA3042/22465/08_222_Review_AusHEd_Internals_100pp_FINAL_WEB.pdf)
- British Psychodrama Association. (n.d.). What is psychodrama? Retrieved on February 14, 2009, from <http://www.psychodrama.org.uk/>
- Budgen, C., & Gamroth, L. (2008). An overview of practice education models. *Nurse Education Today*, 28, 273-283.
- Central Intelligence Agency. (2009). The world factbook. Retrieved December 15, 2008, from <https://www.cia.gov/library/publications/the-world-factbook/print/us.html>
- Choi, I. (1998) *Optimal shifting of fidelity levels in computer-based instructional simulation*. National Convention of the Association for Educational Communications and Technology (AECT). (ERIC Document Reproduction Service No. ED 423829). Retrieved February 11, 2009, from <http://www.eric.ed.gov/>
- Costello, P. (2007). *Intergenerational Report 2007*. Retrieved December 15, 2008 [http://www.treasury.gov.au/documents/1239/PDF/IGR\\_2007\\_final\\_report.pdf](http://www.treasury.gov.au/documents/1239/PDF/IGR_2007_final_report.pdf)

- Co-op Centennial Celebration. (2006). University of Cincinnati, Division of Professional Practice. Retrieved October 20, 2008, from <http://www.uc.edu/propractice/centennial/>
- Cranton, A., & Legge, L. H. (1978). Program evaluation in higher education. *The Journal of Higher Education*, 49(5), 464-471.
- Department of Economic and Social Affairs. (2004). World Population to 2300. New York: United Nations. Retrieved March 26, 2009, from <http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf>
- Department of Economic and Social Affairs. (2001). *World population ageing: 1950-2050*. United Nations, New York. Retrieved February 15, 2009 from, <http://soer.deat.gov.za/indicator.aspx?m=615>
- Department of Environmental Affairs and Tourism. (2006). *Projected change in projected population*. Retrieved February 6, 2009 from, <http://www.un.org/esa/population/publications/worldageing19502050/>
- Dewey, J. (1933). *Democracy and education*. New York: Macmillan Company.
- Dressler, A., Funk, R., Symons, C., Elliot, J., Parnell, C., & Mesagno, C. (2008) *Career outcomes: Graduates of human movement, recreation and performance*. Melbourne, Australia, Victoria University.
- Drexel University Online. (2009). Master of science in higher education. Retrieved February 12, 2009 from, <http://www.drexel.com/online-degrees/education-degrees/ms-he/index.aspx>
- Dunn, W.F. (2004). Simulators in critical care education and beyond. *Society of Critical Care Medicine*. In Simulation in healthcare. (n.d.). Society for Simulation in Healthcare. Retrieved September 1, 2008, from [http://www.ssih.org/public/index.php?ijejifeijfeijfwf=qhuihqwiduhqwiufe&page=website\\_simulation](http://www.ssih.org/public/index.php?ijejifeijfeijfwf=qhuihqwiduhqwiufe&page=website_simulation)
- EarthTrends Country Profiles. (2003). Population, health, and human well-being, South Africa. Retrieved March 9, 2009, from [http://earthtrends.wri.org/pdf\\_library/country\\_profiles/pop\\_cou\\_710.pdf](http://earthtrends.wri.org/pdf_library/country_profiles/pop_cou_710.pdf)
- Eittington, J.E. (2002). *The winning trainer: Winning ways to involve people in learning* (4th ed.) Woburn, UK: Butterworth-Heinemann.
- El-Shamy, S. (2001). *Training games: Everything you need to know about using games to reinforce learning*. Virginia, VA: Stylus Publishing, LLC.
- Erasmus, B.J., Loedolff, P.v.Z, Mda, T., & Nel, P.S. (2007). *Managing training and development in South Africa*. (4th ed.) Cape Town: Oxford University Press Southern Africa (Pty) Ltd.
- EthicsGames.com. (n.d.). EthicsGames, LLC. Retrieved August 20, 2009, from <http://www.ethicsgame.com/Exec/GGEG/Index.html?>
- Freedman, G. (n.d.). Unlocking the global education imperative: Core challenges & critical responses. Blackboard Inc. Retrieved January 12, 2009, from <http://www.blackboard.com/research>
- Gaba, D.M. (2004). The future vision of simulation in healthcare. *Quality & Safety in Health Care*. 13 (Suppl 1), i2-i10. Retrieved August 15, 2008, from [http://qshc.bmj.com/cgi/content/abstract/13/suppl\\_1/i2](http://qshc.bmj.com/cgi/content/abstract/13/suppl_1/i2)
- Goad, T.W. (1982). *Delivering effective training*. California: University Associates, Inc.
- Holzer, H. (2008). Economic costs of inadequate investments in workforce Development. Testimony of Harry J. Holzer to Subcommittee on Labor, Health and Human Services, Education and Related Agencies Committee on Appropriations, US House of Representatives. Retrieved March 1, 2009, from [http://www.urban.org/UploadedPDF/901149\\_Holzer\\_workforce.pdf](http://www.urban.org/UploadedPDF/901149_Holzer_workforce.pdf)
- Horizon Wimba. (2008). Wimba classroom. Retrieved on December 18, 2008, from <http://www.wimba.com/products/wimbaclassroom/>
- Houshmand, A.A., & Papadakis, C. (2006). *One century of cooperative education in the United States: 1906-2006*. Philadelphia, PA: Drexel University.
- Hsu, E. (1989). Role-event gaming simulation in management education: A conceptual framework and review. *Simulation Gaming*, (20), 409-438.
- International Labour Organisation. (2009). Global employment trends, January 2009. International Labour Office, Geneva, Switzerland. Retrieved on March 15, 2009, from [www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms\\_101461.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_101461.pdf)
- Johns, C., Joiner, A., Stenning, A., Latchford, Y., Madden, B., Groom, J., & Freshwater, D. (2002). *Guided reflection: Advancing practice*. Oxford, UK: Wiley.
- Kalantzis, M., & Cope, B. (2001). *New learning: A charter for education in Australia*. Canberra. Australian Council of Deans of Education.
- Kirby, P. (2000). *Ministerial review of post compulsory education and training pathways in Victoria: Final report*. Melbourne, Australia: Department of Education, Employment and Training retrieved March 18, 2009, from <http://www.eduweb.vic.gov.au/edulibrary/public/teachlearn/student/KirbyReport.pdf>
- Kolb, D. A., & Fry, R. E. (1975). Toward an applied theory of experiential learning. In C. Cooper (Ed), *Theories of group processes*. London: Wiley.
- Lehohla, P. (n.d.). State of the world population: 2004. Retrieved March 5, 2009, from [http://www.statssa.gov.za/news\\_archive/17sep2004\\_1.asp](http://www.statssa.gov.za/news_archive/17sep2004_1.asp)
- Macroeconomic News. (2009). Swedish unemployment rises to 4.5 percent in January. Thomas Reuters. Retrieved February 25, 2009, from [http://www.lse.co.uk/MacroEconomicNews.asp?ArticleCode=slu0kf79e33cn29&ArticleHeadline=swedish\\_unemployment\\_rises\\_to\\_45\\_pct\\_in\\_jan\\_-spes](http://www.lse.co.uk/MacroEconomicNews.asp?ArticleCode=slu0kf79e33cn29&ArticleHeadline=swedish_unemployment_rises_to_45_pct_in_jan_-spes)

- Meligrana, J.F., & Andrew, J.S. (2003). Role-playing simulations in urban planning education: A survey of student learning expectations and outcomes. *Planning Practice & Research*, 18(1), 95–107.
- National Commission for Cooperative Education. (1994). *The cooperative education model*. Retrieved October 15, 2008, from <http://www.co-op.edu/aboutcoop.htm>
- National Institute on Aging. (2009). US population aging 65 years and older: 1990 to 2050. US National Institutes of Health. Retrieved January 16, 2009, from <http://www.nia.nih.gov/ResearchInformation/ConferencesAndMeetings/WorkshopReport/Figure4.htm>
- PEW Hispanic Center. (2008). US Population Projections: 2005-2050. Retrieved December 9, 2008, from <http://pewhispanic.org/reports/report.php?ReportID=85>
- Propper, H. (2004). Psychodrama as experiential education: Exploring literature and enhancing a cooperative learning environment. In J. Gershoni (Ed.), *Psychodrama in the 21<sup>st</sup> century* (pp. 229-248). New York: Springer.
- Quoteworld.com. (n.d.). Retrieved on March 21, 2009, from <http://www.quoteworld.org/quotes/8643>
- Rystedt, H. (2002) *Bridging practices: simulations in education for the health-care professions*. Doctoral dissertation series, No 187. Göteborgs Universitet. Faculty of Education.
- Joubert, J., & Bradshaw, D. (2006). *Growing numbers of older persons in South Africa*. South African HealthInfo. Retrieved January 6, 2009, from <http://www.sahealthinfo.org/bod/older.htm>
- Scriven, M. (1967). The methodology of evaluation. *AERA Monograph Series on Curriculum Evaluation: Perspectives of Curriculum Evaluation*. Chicago: Rand McNally.
- Seria, N., & Cohen, M. (2008). *South African Job Growth Slows as Economy Slumps* (Update2). Bloomberg.com. Retrieved March 15, 2009, from <http://www.bloomberg.com/apps/news?pid=20601116&sid=ap0YoEssNh1A&refer=africa>
- Statistics Sweden. (2008). The future population of Sweden 2006-2050. Statistics Sweden, Forecasting Institute. Retrieved on February 20, 2009, from [http://www.scb.se/statistik/\\_publikationer/BE0401\\_2006I50\\_BR\\_BE51BR0602ENG.pdf](http://www.scb.se/statistik/_publikationer/BE0401_2006I50_BR_BE51BR0602ENG.pdf)
- Sternberg, P. & Garcia, G. (2000). *Sociodrama: who's in your shoes?* (2nd ed.). Westport, CN: Praeger.
- Squire, K. (2005). Changing the game: What happens when video games enter the classroom? *Innovate. Journal of Online Education*, 1(6). Retrieved on February 21, 2009, from <http://innovateonline.info/?view=article&id=82>
- Students turn to co-op for competitive edge. (2008). *Herald-Dispatch*. Huntington, WV. Retrieved August 25, 2008, from <http://www.herald-dispatch.com/homepage/x1484854921/Students-turn-to-co-op-for-competitive-edge>
- Swanepoel, B., Erasmus, B., Van Wyk, M., & Schenk, H. (2000). *South African human resource management: Theory and practice*. (2nd ed.) Kelwyn: Juta & Co.
- Towne, D.M. (1995). Learning and instruction in simulation environments. Engelwood Cliffs, NJ: Educational Technology Publications.
- Training: a short history. (n.d.). Retrieved November 28, 2008, from [www.cipd.co.uk/subjects/lnanddev/general/thistory](http://www.cipd.co.uk/subjects/lnanddev/general/thistory)
- Trejos, N. (2008, October, 15). *Will you retire?* Washington Post, p. H01. Retrieved on March 1, 2009, from <http://www.washingtonpost.com/wp-dyn/content/article/2008/10/13/AR2008101302398.html>
- Trochim, W. (n.d.). Introduction to evaluation. *Research Methods Knowledge Base*. Retrieved January 17, 2009, from <http://www.socialresearchmethods.net/kb/intreval.htm>
- United Nations. (2001). *World population ageing: 1950-2050*. Department of Economic and Social Affairs, Population Division. New York. Retrieved March 28, 2009, from <http://www.un.org/esa/population/publications/worldageing19502050/>
- Vincent, S. (1998). Input data analysis. In J. Banks (Ed.), *Handbook of simulation: principles, advances, applications, and practice* (pp. 55-93). New York: Wiley.
- World Association of Cooperative Education. (n.d.). Retrieved February 19, 2009 from, <http://www.waceinc.org/about.html>

## ABOUT THE JOURNAL

The Asia-Pacific Journal of Cooperative education (APJCE) arose from a desire to produce an international forum for discussion of cooperative education issues for practitioners in the Asia-Pacific region and is intended to provide a mechanism for the dissemination of research, best practice and innovation in work-integrated learning. The journal maintains close links to the biennial Asia-Pacific regional conferences conducted by the World Association for Cooperative Education. In recognition of international trends in information technology, APJCE is produced solely in electronic form. Published papers are available as PDF files from the website, and manuscript submission, reviewing and publication is electronically based.

Cooperative education in the journal is taken to be work-based learning in which the time spent in the workplace forms an integrated part of an academic program of study. Essentially, cooperative education is a partnership between education and work, in which enhancement of student learning is a key outcome. More specifically, cooperative education can be described as a strategy of applied learning which is a structured program, developed and supervised either by an educational institution in collaboration with an employer or industry grouping, or by an employer or industry grouping in collaboration with an educational institution. An essential feature is that relevant, productive work is conducted as an integral part of a student's regular program, and the final assessment contains a work-based component. Cooperative education programs are commonly highly structured and possess formal (academic and employer) supervision and assessment. The work is productive, in that the student undertakes meaningful work that has economic value or definable benefit to the employer. The work should have clear linkages with, or add to, the knowledge and skill base of the academic program.

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The editorial board welcomes contributions from authors with an interest in cooperative education. Manuscripts should comprise reports of relevant research, or essays that discuss innovative programs, reviews of literature, or other matters of interest to researchers or practitioners. Manuscripts should be written in a formal, scholarly manner and avoid the use of sexist or other terminology that reinforces stereotypes. The excessive use of abbreviations and acronyms should be avoided. All manuscripts are reviewed by two members of the editorial board. APJCE is produced in web-only form and published articles are available as PDF files accessible from the website <http://www.apjce.org>.

Research reports should contain; an introduction that describes relevant literature and sets the context of the inquiry, a description and justification for the methodology employed, a description of the research findings-tabulated as appropriate, a discussion of the importance of the findings including their significance for practitioners, and a conclusion preferably incorporating suggestions for further research. Essays should contain a clear statement of the topic or issue under discussion, reference to, and discussion of, relevant literature, and a discussion of the importance of the topic for other researchers and practitioners. The final manuscript for both research reports and essay articles should include an abstract (word limit 300 words), and a list of keywords, one of which should be the national context for the study.

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