

COMPETITIVENESS: DOCTORAL USER-CENTERED LEARNING GAMES



Alumni Association Network

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DOCTORAL USER-CENTERED LEARNING GAMES**

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September 2011

Track: Mini Track on User-Centered Learning Game Design

Keywords: Competitiveness, Knowledge-Sharing, Games, Virtual Learning, Teamwork, Global Learning Team

Interest to Audience: Doctoral learners experience anxiety while attempting to acquire new knowledge because of personal and professional obligations. The attrition rate, consequently, continues to increase as a result of anxieties. An audience may gain a better understanding from this study of how doctoral user-centered learning games may create “warm” learning environments while realizing that adult learning is a derivative of competitive games played during childhood. The development and deployment of academic related games for doctoral learners may enhance learning capacity while reducing anxieties, which subsequently may decrease the attrition rate.

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**Competitiveness:
Doctoral User-Centered Learning Games
By Alumni Association Network**

**Designed by
The Art Connoisseur**



ABSTRACT

The development of user-centered games may prompt leaders of higher education institutions and learners from diverse occupations and geographical locations to share and gain knowledge demonstrating the global learning team concept. Competitive games, commonly known as board games (though the games may be digital, electronic, telephonic, and so forth), have always relied on a base of common facts known by the player (user). The player applies the facts, often with an element of chance, moves forward in the game, competing against another player, and finally wins or loses.



The qualitative research involved reviewing peer-reviewed literature that centers on games, development, and behaviors. The research expands on how the youth processes information through competitive game activities, like International Spelling Bees. The field research involved observing and noting the interaction on how the youth from different school systems interacts and learns while engaging in board game activities. Results from the literature and research show how competitive childhood game activities mode the learning process for adults.

Describing the association between the interaction of children playing and games scholars from various disciplines at the post-doctoral level engaged in over their lifespan may assist higher education leaders to determine if traditional board games as well as virtual games are more effective learning tools than traditional activities, like role-play, for players of all ages. Findings were derived from inductive analysis using the grounded theory approach. Major themes identified that through competitive games, scholars with diverse educational backgrounds share similar learning values. The results further provide a model for development for learning games for doctoral learners using an inquiry approach without eliminating the competitive nature, which games are based.

TABLE OF CONTENT

List of Tables	6
List of Figures	6
Competitiveness: Doctoral User-Centered Learning Games	8
Data Collection	9
Observation Study of Children Performing Magic Tricks.....	10
Attributes of Doctoral Graduates	11
Ethnicity.....	14
Gender.....	14
Generation (A, B, C, D).....	14
Geographic Location of Birth	14
Virtual Study Findings.....	15
Games Contribution to the Accumulation of Knowledge.....	17
Games Classification	21
Behaviors and Values Associated with Academic Games	25
Current Game Participation	29
Results.....	31
Limitations and Future Research	36
Conclusion	38
Acknowledgement	40
References.....	41
About the Researchers	42

List of Tables

Table 1 *Attributes of Doctoral Graduates (Participants)*..... 12

Table 2 *Kinds of Games Doctoral Graduates (Participants) Played as Children* 16



List of Figures

Figure 1. Academic Transformation & Learning Activity Success Taxonomy (ATLAST)
..... 30

Figure 2. Game Academic Model for Educators (GAME) 34



COMPETITIVENESS: DOCTORAL USER-CENTERED LEARNING GAMES

Oliver (2001) cited, learning activities “need to engender cooperative and collaborative activities among the cohort and in doing so must provide opportunities for reflection and articulation. The activities must provide the purpose and the context for learners to deal with the content and information” (p. 1). This research project encompasses several learning concepts, whereby the concept of temporal difference (TD) learning will serve as the foundation to answer the primary research questions. TD learning is based on predicting an outcome derived from past observations (Dayan & Sejnowski, 1994; Mańdziuk & Osman, n.d.).

Research Question 1. How may game activities played as children apply to the learning development of doctoral learners?

Research Question 2. What behaviors of children during playtime may reflect the behaviors of doctoral learners during game-based learning?

This study involves observing the activities, emotions, and interaction of children and describing the behaviors in a collaborative environment. Understanding how observing game-based activities of children can be used to predict the learning outcome of doctoral learners may provide validity to the TD learning theory. For this study, recollection of events and learning particular skills will be considered winning factors and not participating in games or having a lack of knowledge on the importance of games being incorporated into an academic environment will be considered losing factors.

Findings may help doctoral graduates engage in inquiry-based learning to design competitive games for doctoral learners. Inquiry-based learning involves constructing open-ended investigative questions to expand the knowledge base (Oliver, 2001). Once

the games are constructed, doctoral graduates may participate in problem-based learning by pilot testing the reliability of the game to identify areas that may need enhancing, which may be achieved by asking additional questions (Oliver, 2001). “Authentic activities allow a range and diversity of outcomes open to multiple solutions of an original nature, rather than a single correct response obtained by the application of rules and procedures” (Reeves, Herrington, & Oliver, p. 564).

Data Collection

Data collection took place using two methods: observation and email survey. Leedy (1997) indicated that 5 to 10 participants are an adequate representation needed to obtain an overall view of the issue under study using a qualitative approach. Over a 3-year timeframe, approximately 35 doctoral graduates were emailed a self-designed questionnaire. The questionnaire was constructed by Researchers, Brenda Nelson-Porter, DM, and Christine Hansen, Ph.D. The second part of the study involved observing 8 children performing magical tricks in a home setting in 2009. For both portions of the study, participants were not randomly selected, but were convenient.

The virtual data collection method that involved emailing the questionnaire to doctoral graduates was an effective approach to obtain descriptive responses. In addition to demographic data, data were sought by asking the following five associated research questions.

1. Which games contributed to the accumulation of knowledge, at what age, and please give precise examples?
2. Were games not included in your education or playtime? Or were the games “pure entertainment?”

3. Were there any learning programs or “games,” which were not inherently competent, but were made so by the instructor to advance learning? If so, please describe.
4. Were there winners and losers in any academic related games? Was there any value placed on ‘winning’ other than self-satisfaction?
5. Do you still participate in games? Please explain.

Observation Study of Children Performing Magic Tricks

Eight children (5 boys and 3 girls) ranging in age from 4 to 14 were observed playing a magic game during the Christmas of 2009. The game was owned by a 7-year old girl. When the game was presented, the 14-year old boy was not interested. The 13-year old boy tried to establish a lead role by giving each child except the 14-year old a trick to perform. The 4-year old boy was given the easiest trick. The other children disputed over what was perceived as the most “popular” trick, as no one had read the instructions.

As the children tried to figure the nature of his or her trick, the 4-year old and the 9-year old girl began to lose interest by watching the television and were asked by the moderator to rejoin the activity. The 9-year old boy (twin of the girl) became excited when he figured out his trick. The 13-year old tried to explain to the 4-year old six times how to perform his trick and became frustrated. The actual owner of the game did not ever fully lose interest and occasionally looked up at the television. After 15 min, the 9- and 13-year old boys took a water break. Others began to talk amongst themselves until the leader returned.

The 14-year old boy finally moved to the other side of the room to avoid distractions and attempted to gain an understanding of his trick, and then described the

activity as being “lame.” Two children traded their assigned trick without the leader’s permission. The leader experienced difficulty explaining how to perform two of the tricks to the other children because the leader was unfamiliar with some of the tricks. The 7-year old owner continued to state “I cannot do it.” The 9-year old girl started to watch her digital camera and waited for the lead to explain how to perform her trick instead of trying to figure the process on her own. The 11-year old girl never spoke while trying to understand her trick.

All the children except 2 boys performed their trick correctly. Each child individually performed his or her trick in the presence of the moderator, grandmother, and older relative. The 4-year old boy and another 9-year old boy did not perform their tricks correctly. All were supported with a hug from their grandmother. The leader stated, “I did good.” When the second 9-year-old’s mother came in later that evening, all the children were happy to repeat the tricks for her.

Findings confirm that through instruction--the foundation of understanding the concept, purpose, or content of games--organization, and observation of peers, children master learning and skills, which result in success. Success was defined as completing a trick or being rewarded with a hug. Peer observation (to observe others’ progress), which is not uncommon, demonstrates the value children place on competition during “playtime.”

Attributes of Doctoral Graduates

Twenty-seven doctoral graduates took part in the Game Survey Research Study and provided answers to the background question inquiries. Graduates included scholars who attended various universities, domestic and abroad, and completed their doctoral

programs. An external consultant created Table 1 and organized the literature that supported the information in the table, which were later updated and revised by one of the researchers. Table 1 provides aggregate data for the 27 graduates.

Table 1

Attributes of Doctoral Graduates (Participants)

Participant	Ethnicity	Gender	Geographic Location of Birth	Degree Awarding Institution	Generation A, B, C, D
Game Survey 1	Black	Female	Dickinson, TN	UOP Online	B
Game Survey 2	Caucasian	Male	New York, New York	UOP Online	A
Game Survey 3	African American	Female	Philadelphia	UOP Online	B
Game Survey 4	White	Female	Cleveland, Ohio	UOP Online	B
Game Survey 5	African American	Female	Louisville, KY	UOP Online	B
Game Survey 6	African American	Female	Chicago, IL	UOP Online	C
Game Survey 7	White	Female	Belgrade, Serbia	Belgrade University	C
Game Survey 8	White	Male	Chicago, IL	Harvard University	B
Game Survey 9	Black	Male	Harare, Zimbabwe	UOP Online	C
Game Survey 10	Black	Female	Macon, GA	UOP Online	C
Game Survey 11	African American	Female	Philadelphia, PA	UOP Online	C
Game Survey 12	Caucasian	Female	Minneapolis, MN	University of Missouri	C
Game Survey 13	White	Female	Dilley, TX	UOP Online	C
Game Survey 14	Hispanic	Male	Guantanamo, Cuba	UOP Online	B
Game Survey 15	African American	Female	Niagara Falls, NY	UOP Online	B
Game Survey 16	African	Male	Africa	Capella University	B
Game Survey 17	White	Female	Detroit, MI	UOP Online	C

Game Survey 18	Black	Male	Manhattan, NY	UOP Online	B
Game Survey 19	African American	Female	Manville, NJ	UOP Online	B
Game Survey 20	White British	Male	Guilford, UK	Imperial College	B
Game Survey 21	Black	Female	Valdosta, GA	UOP Online	B
Game Survey 22	African American	Male	Nigeria, Africa	Argosy University	C
Game Survey 23	African American	Male	Texas	Texas Southern University	C
Game Survey 24	African American	Female	Chicago, IL	UOP Online	C
Game Survey 25	African American	Male	Philadelphia, PA	George Washington University	B
Game Survey 26	Hispanic	Female	Torreón, Coahuila, Mexico	UOP Online	C
Game Survey 27	Yoruba	Male	Ayetoro-Yewa, Ogun State, Africa	--	B

Key Chart

A = 1922-1943

B = 1944-1960

C = 1961-1980

D = 1981-2000

Total: 27/27



Ethnicity

Regarding ethnicity, each of the 27 participants provided answers to this inquiry. The choices provided were Caucasian or White, African American or Black, Hispanic, African, and White-British. Of those who provided answers, 15 were African American or Black, 7 were Caucasian or White, 2 were Hispanic, 2 were African, and 1 was White-British. One from Africa indicated Yoruba. Although born in Africa, 1 identify as an African American.

Gender

Regarding gender, 27 participants provided answers for this question. The choices were either male or female. Sixteen females and 11 males participated.

Generation (A, B, C, D)

Regarding generation (age), four choices were provided for the participants to select. These choices were 1922-1943, 1944-1960, 1961-1980, and 1981-2000. During the analysis, the selections were given additional coding by the assignment of letters, A, B, C, and D. The letter A represented 1922-1940; B represented 1941-1960; C represented 1961-1980, and D represented 1981-2000. Of the choices provided for selection, 1 participant was from the group labeled A, and 14 participants were from the group labeled B. No participants were from the group labeled D, and 12 participants were from the group labeled C. All of the participants provided answers to this inquiry.

Geographic Location of Birth

Regarding birthplace, all 27 participants were provided a choice to this inquiry. Participants were instructed to provide their city and state of birth. Some only provided states and no cities, while another only provided the name of a country. Of the selections

provided, 3 participants were from Chicago, IL, 2 were from Philadelphia, PA, and each remaining participant were from Dickson, TN; New York, NY; Cleveland, OH; Louisville, KY; Belgrade, Serbia; Harare, Zimbabwe; Macon, GA; Dillery, TX; Guantanamo, Cuba; Niagara Falls, NY; Detroit, MI; Manhattan, NY, Guilford, UK; Valdosta, GA; Minneapolis, MN, and Torreón, Coahuila.

Two of the remaining four participants only listed their state. One represented Texas and the other PA. A country was indicated in some instances. Three participants were born in Africa.

Degree Awarding Institution

Regarding the degree awarding institution, 26 participants answered this inquiry. Choices provided by the participants were University of Phoenix (UOP) Online, Harvard University, Belgrade University, Capella University, University of Missouri, Imperial College, Argosy University, Texas Southern University, and George Washington University. Of those who provided answers, 18 were from UOP Online, and a total of one participant attended the remaining universities, which were Harvard, Belgrade, Capella, Missouri, Imperial College, Argosy, Texas Southern, and George Washington. One African participant did not answer this inquiry.

Virtual Study Findings

Responses from the five research questions analyzed by one of the researchers were to give insight on what games may have contributed to the accumulation of knowledge of school-aged children. Table 2 presents the name of games the doctoral graduates played as children. Findings highlight how the accumulation of knowledge in an academic or home environment may result in increased learning capacity.

Table 2

Kinds of Games Doctoral Graduates (Participants) Played as Children

Board games	Non board games	Outdoor games
Monopoly®	Rapid Speed Testing	Hide and Seek
Scrabble®	Spelling Bees	Horse Shoes
Upwords®	Jenga®	Nhodo (Stone Marbles)
Checkers (e.g., Draughts)	Jeopardy®	Jacks
Chinese Checkers	Dominoes (Dominos)	Follow the Leader (Patriots)
Chess	Cards (War)	Orienteering
Backgammon	Flash Cards	Sports (Kickball, Baseball)
Tsoro (Stone Marbles)	Musical Game (Name That Composer)	Sports (Bike Riding)
Ludo	Musical Game (Song Composition)	Field Day Activities (3-Legged Race, Water Balloon Toss)
Go to the Head of the Class®	Around the World	--
Sorry®		--
Chutes and Ladders®	--	--
Snakes and Ladders®	--	--
Etch A Sketch®	--	--

Games Contribution to the Accumulation of Knowledge

Pertaining to games, which may have contributed to the accumulation of knowledge, most doctoral graduates provided insight how games were/are perceived as learning activities. Some doctoral graduates could not answer or recall, because games were not included in their academic setting, such as in the traditional classrooms in Mexico or memory loss because of a disability. Some doctoral graduates played no or few academic related games as children.



Board games. Monopoly®, a board game, was most often played by the doctoral graduates as children ranging from ages 8-14. Monopoly® facilitated in providing knowledge about money management, real estate, entrepreneurial ability, and risk taking. In the group-centered setting, managerial and negotiating skills emerged as learned behavior in needing to accumulate wealth. Findings show that although mostly played during family time for entertainment, playing Monopoly® may be classified as a financial learning activity associated with business planning.

Scrabble®, a family and academic board game, was often played by the doctoral graduates as children ranging from ages 8-15. Scrabble® facilitated increased spelling abilities, word usage, vocabulary, organization, flexibility, team spirit, creativity, and strategy. Findings show that playing Scrabble® may be classified as a learning activity

that can be associated with writing and composing group papers and PowerPoint presentations.

Checkers (e.g., Draughts), Chinese Checkers, and Chess were board games often played by the doctoral graduates as children at the age of 12. The process of these games encouraged advanced and analytical thinking, logic, strategizing, and patience. One female doctoral graduate responded:

In my mid teens, I played backgammon a lot. Learning that things happen by movement were interesting, but when those same things are strategically placed, a difference can be made between winning and losing. Playing this game provided me with the understanding that you gain more from evaluating a situation before moving forward.

Go to the Head of the Class®, a board game with cards, was played in Grades 1-12. One of the researchers, at age 8, memorized the answers and lists of unrelated facts, which gave the investigator a broad level of information. Ludo, a board game similar to Chutes and Ladders® or Sorry®, was indicated by the doctoral graduate of African descent (African American) as enhancing color recognition and mathematical skills. Findings show that playing board games increase the learning capacity of the learners in an academic setting.



Outdoor games. “Hide and Seek,” Horse Shoes, and Jacks are traditional out doors activities often played by school-aged children. Jacks were identified as a game that increased basic mathematical skills. One doctoral graduate at the age of 11 learned the value of being able

to “hide in plain sight” and to look for things in unexpected places while playing the interactive game, Hide and Seek. One Hispanic male doctoral graduate reflected on the Cuban version of “Follow the Leader.”

The game is designed for learners who were *Patriots (translated from Spanish)* who are the equivalent of the U.S. Boys Scouts, who are taken to the sugarcane fields to assist the farmers with chopping and collecting sugarcanes in the most efficient manner. The game involved having a team of three patriots, and the each team had to select a leader, coordinator, and laborer. The roles will rotate until each member had a chance to evaluate each role. As I recall from the Communist version of this game, the purpose is designed to expose children at an early age to responsibility, community involvement, and awareness to class structures.

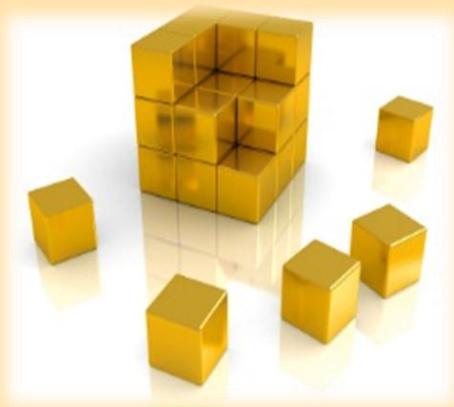


Nhodo, stone marbles, often played by African girls enhanced balancing skills. Tsoro, another stone marble game, played by African boys built mental skills. Findings show that playing outdoor games may be classified as a learning activity that can be associated with using analytical skills needed to identify and solve problems and organization skills needed to complete activities.

Other activities. In addition to board games and outdoor activities, card games were popular learning activities played in academic and home settings. Card games, used

by doctoral graduates, who age ranged from 5-12, increased math and vocabulary skills. The memorization of numbers for the female doctoral graduate from Serbia at the age of 8 or 9, naming the process, “*the knowledge game*,” increased her knowledge level. Flash cards helped with times tables and with the speed of calculating numbers.

War, a card game played by one female doctoral graduate at the ages 6-8, helped in learning greater or lesser numbers. Studying vocabulary words using flash cards enhanced word usage and the spelling of words. “Around the World” is a game played by one male doctoral graduate where a learner would stand next to the desk of another learner and the teacher flashed an arithmetic flashcard. Jenga®, a block game, whereby the doctoral graduate of African descent (African American) learned how to court at the



age of 3, has been used to teach school-age children in Grades 1-12 to enhance mathematical skills.

Dominos, another block game, was also identified as a game played by a doctoral graduate.

One of the researchers, Hansen, noted in the questionnaire, “The ability to memorize lists of unrelated facts has been a valuable academic skill.” Games, such as draft (ponies), memory game, and identification games (geography locations), have been incorporated in Westernized curriculums and quizzes although influenced by the local culture in Africa (Zimbabwe). School-aged children have been able to focus on logic. “Learning the United States using objects that have the first letter of the State’s name” can be classified as an identification game, which was played by one female doctoral graduate. Through

the memorization of the capital of cities in all countries worldwide, the female doctoral graduate from Serbia since the age of 10 has been able to retain this historical knowledge.

Noticing registration plates in alphabetical, then reverse-alphabetical order during long car journeys may encourage bi-directional learning while building analytical skills, responded the British White male doctoral graduate from the United Kingdom (UK). One African American female doctoral graduate at the ages 5 and 6, used an Etch A Sketch®, which possibly enhanced eye-hand coordination. Watching television game shows, such as Jeopardy®, helped with History facts, responded another doctoral graduate. Repetition and memorization of a self-composed song that reflects the curriculum content and class assignments helped one doctoral graduate comprehend the information. Findings overall confirmed that content and context associated with most games and learning mechanisms contribute the accumulation of knowledge.

Games Classification

Pertaining to if games were included in education or playtime or if the games were “pure entertainment,” many doctoral graduates responded that games were sources of entertainment only, and were not included in school activities. “Perhaps because of lack of teacher imagination or



equipment,” one doctoral graduate wrote as why games were not included. Reading and studying were means to gain knowledge in school; games were considered irrelevant or solely home activities. An African American female doctoral graduate responded, “Games were considered a reward for meeting responsibilities [i.e., homework].”

Findings show that when classifying games as “pure entertainment,” the youth mind (i.e., subconscious) seemed to focus on the activity without associating the concept, purpose, content, or context of a game to everyday learning objectives.

Most doctoral graduates responded that games were included in education and playtime at school and/or home and the realization that games were learning tools emerged later in life. Indoor games or activities included playing Monopoly®, Draughts, Chess, with flash cards, and listening to music on the radio and attempting to guess the name of the composer. Based on findings, outdoor neighborhood games, such as Kickball, Baseball, Hopscotch, Jackstones, and Bike Riding, allow children to observe the competitive nature of their peers. The British White doctoral graduate responded, “I do not in any way condemn competition provided that it is not uncharitable, because I know many people who have developed their minds and characters through competition.” Findings further show that games and other fun activities, such as children playing with toys (e.g., girls playing with dolls), visiting recreation centers, and recognizing the alphabet visible on car registration plates while traveling, help children contribute to self social development by stimulating problem-solving skills and applying innovative, critical thinking, and leadership or team building skills.

Advancement of Learning Programs or Games



Pertaining to learning programs or ‘games,’ which were not inherently competent, but were made so by the instructor to advance learning, most doctoral graduates responded that the recollection of educational pursuits was not evident. Games either were not included in the class activities or the traditional

classroom setting or traditional educators did not take the initiative to incorporate games into the class activities. Several doctoral graduates, however, provided scenarios of games and activities educators introduced them to as a learning tool. In addition to Monopoly® and flash cards, the following learning concepts were introduced to the doctoral graduates as children:

- A math educator challenged the class to complete tests and quizzes at a fast pace and attain the most correct answers. Speed testing produced a higher level of learning overall for the majority of learners. Learners who needed more assistance in understanding the concepts studied longer hours with peers and teachers. Learners who were not inspired and were content with just meeting the minimum requirements were slowly transformed through strong intervention by educators, peers, parents, and of course the communist party leader assigned to the class.

- An educator introduced the transfer learner (a White female) to Spanish speaking public broadcasting programs in the classroom.

- An educator introduced learners to a self-learning language program where the learner moved up from color to color. Each time a learner passed a color, the learner was given the option to select a book from the class library, and the learner's name was placed in the book, which was considered a privilege.



- An educator introduced the learner to how objects, which had the first letter of a State's name, could be used to learn the United States.

- An educator introduced the teenager to Orienteering (i.e., an off-road walking with a map and compass). The British

White male doctoral graduate, “a burgeoning musician who is a lover of nature’s numinosity” was not interested in this outdoor activity, whereby as a teenager was frequently blundered into marshes.

Three male doctoral graduates, one from the UK, a Statistician, and the descent from Africa (Zimbabwe), believed that sports or outdoor activities were not so competent in nature and did not increase learning capability. Two of the male doctoral graduates felt that outdoor activities were solely athletic in nature or for relaxation to get one’s mind off “the hard stuff.” Many sporting or Field Day games or physical education activities may include Jump Rope, Tug of War, Kickball, 3-Legged Race, and Water Balloon Toss. Parents were invited to join their children in playing various games on Field Day.

Two doctoral graduates shared their experience as adults supporting or recognizing educational pursuits. As an educator, one of the female doctoral graduates created and incorporated games into her classroom activities, which resulted in positive behaviors, increased participation, and higher grades. While prepping to play Jeopardy®, learners developed their own questions and answers. As a mother of a learner in Grade 1, the mother listened to how her daughter counted using coins. “If she starts with quarters, and has to begin counting dimes, she says ‘Switch’ out loud to reminder she has to begin to count by tens. This has been extremely helpful and fun for her, as she had been struggling with counting coins.” Findings overall show grade school learners desire to play educational games and for educators to take initiatives to incorporate gaming activities into the day-to-day class activities to increase the learners’ learning capacity.

Behaviors and Values Associated with Academic Games

Pertaining to if winners and losers are associated with any academic related games and if any value was placed on “winning”, other than self-satisfaction, several participants responded that the question was not applicable or recalling an event was not possible. Losers can be recognized as “upset” children, who took playing the game too serious. Winners can be recognized as all having a “good time” together.



Most doctoral graduates responded that winning was a value placed on games, whether indoors or outdoors. One White male doctoral graduate and Statistician responded, “Games were all about winning and losing in the 1950s. The pleasure of defeating others was a bigger benefit than self-satisfaction.” In addition to self-satisfaction, games (to include “street games”) added to teamwork, coordination, and skills.

Rewarding winners, a managerial strategy, seem to drive competition. Doctoral graduates provided scenarios, which described how academic games evoke a competitive spirit.

- Most of my colleagues thought if an “A” was not earned, then the data were not understood. This attitude was more evident in team related activities. Winning was priority, and an “A” notated winning.
- At times, there were winners and given value in the form of winning star for the week. The winning group would be excused from the class chores, and team member

names would be written on the notice board for the week or sometimes a floating trophy for the best team of the week.

- For completing the tests or quizzes at a rapid pace and attaining the most correct answers, groups of winners would emerge, and each group based on the times posted would be awarded free playtime or other benefits to promote learning.
- I enjoyed the competitive game played in my grade school classroom called “Around the World.” The first learner (standing beside one another at a desk) of the pair who gave the correct answer when the teacher flashed the arithmetic flashcard would move to the desk of the next learner while the “loser” would sit down. The first learner to make it all around the classroom; that is, “Around the World,” wins the game.
- A Latin educator at a prep school gave the learners a booklet of grammar and vocabulary at the beginning of the year. Tests were taken at the learner’s discretion. The progress of each learner was recorded on a wall chart. This did spur me on when I saw my slow progress--but, I think it was more “shame” than “game”!
- I did not like Spelling Bees and purposefully spelled out in the first round. At the end of the year, an “Awards Day” was held. Among my friends, competition existed to see who received the most awards.
- At home, we were rewarded with a snack and praise not for winning or losing, just for accomplishing the task.
- My group was once a winner and received chocolate as an award. We were very happy.



- During my course of study at a banking school, a simulation game was played. The class was divided into a number of groups, and value was placed on winning (i.e., being the best). Participating in stock market games, the value was also focused on winning.

Several doctoral graduates responded that no winners or losers existed in the game activities. One African American male doctoral graduate shared a personal reflection of his life to becoming a writer based on a writing activity.

I usually do not participate in games for the purpose of learning because I do not like group activities, but I like competition. I like winning or being singled out as the sole winner in everything I endeavor to accomplish. That does not mean I am always the winner, but I would like to be best in all I do.

In Grade 6, the Student Council decided to have an election for “most outstanding boy” of each grade. I cannot recall all the criteria used in their selection, but my friend, became the most outstanding boy. I, however, was singled out as the most outstanding boy at the elementary school that year.

My parents divorced when I was in middle school and I turned to drugs and alcohol. I gained notoriety for the wrong reasons. My grades declined a bit. At that time, I did not like writing. In Grade 8, I made a “D” in English. In Grade 9 in English, I was required to keep a journal. We were not restricted on what we could write. It did not even have to be grammatically correct. In a way, that was my *game*. My goal was to see how much I could shock the reader by what I wrote. In Grade 9, I wrote a poem entitled, “*Yesterday Morning, Mary Made Love to Sue*”.

Yesterday morning, Mary made love to Sue. I was looking through the window. I reminisce every move. Sue lay at one end and Mary at the other so they could tongue each other from head to toe like perverts to their lovers. After an hour or two, Mary got from on top of Sue and promptly headed home. Three minutes longer, I looked around the corner, and Mary was not alone.

For the doubtful reader and the dubious alike, this poem is original. I just happen to have the sight. By now, you should have inferred that this poem is about two lesbians. If this does not make you smile, then I do not know what you like. I enjoyed that artistic freedom and really did not realize that I was becoming a good writer along the way.

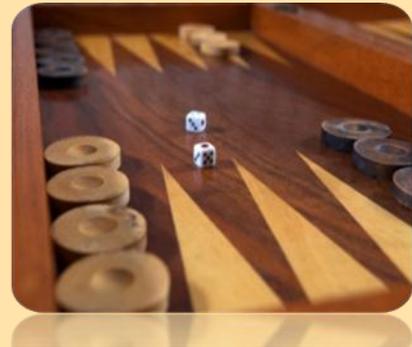
By the time I was in Grade 12, my Advanced English educator occasionally selected my essays to read in front of all her classes. That was quite an honor because she only read mine. I received an award for writing that year. I think from Grade 9 forward, all my English educators were impressed with my writing. Even as an undergraduate, one History educator read one of my essays on Mark Twain to the class.

While I no longer consider writing to be a game, writing is enjoyable. Even academic, technical writing is enjoyable, and if I get a few peer-reviewed manuscripts accepted for publication, that is like icing on the cake. I bolster my credibility as a Statistician and a Researcher. I feel as though I have the tools to unlock the secrets (or at the very least provide some insight) into human behavior, and I am eager to share what I find with the world.

Other doctoral graduates believed the exclusion of competition reduced insecurities and built self-confidence and made school and family time enjoyable. Findings overall show that value was placed on teamwork, strategizing, and knowledge building more so than self-satisfaction. Although self-satisfaction and reward systems are evident, positive competitive activities ensure a certain level of increased learning capacities.

Current Game Participation

Pertaining to if doctoral graduates currently participate in games, several graduates play games with his or her self, spouse, children, or grandchildren. Games identified include Scrabble®, Trivial Pursuit®, Upwords®, Checkers, Cards (playing, flash), and Jenga®. Jenga® tends “to challenges manual dexterity and creativity,” responded one doctoral graduate. Scrabble®



followed by trivial games was identified more so than others. Games have been used at social events (e.g., retreats) of a friend of the British White male doctoral graduate to stimulate conversations.

Memory and quizzing games help build leadership skills and business acumen and provide awareness to possible solutions to complex issues and problems. The Hispanic male doctoral graduate further shared a personal story about how his son constructed a business proposal.

With my youngest child, we invented a game, which is designed to help my child with organizational, critical thinking, and mathematics skills as a way to evaluate the possibility of an occurrence or event or justify a position. My son, wanted to

buy a new amplifier for his guitar. He currently has an AMP, which is 2 years old and classified as a middle range. In order for any cash investments, my son will need to prepare a report and include the objective, pros & cons, value over time, and an estimated plan for paying back the loan. If the report is grammatically and factually correct, we (the parents) will award compensation (range \$5-\$20) for the effort and provide a loan for the purchase if it passes the Financial Officer's (spouse) review. In some cases, we may call for my son to present oral review where he is called to present his position and articulate why or why not to proceed with the decision.

Doctoral graduates use games in their personal and professional endeavors to accumulate, increase, and verify knowledge. Games assisted with understanding personal finances, checking accounts, and the banking industry. Games have been used to teach finance to elementary school-age children or teach and train adult learners who struggled with concepts. Games have been played at job-related leadership sessions and by an African male doctoral graduate during strategic planning meetings. Games further assisted with passing a certification exam and obtaining a Graduate Banking degree. Games in higher education include role-playing to assimilate situations in the work place to stimulate teamwork and innovation.

Although doctoral graduates recognize that games stimulate thought and demonstrate curiosity, and curiosity leads to research, several graduates do not currently participate in game activities or have not participated in games for years. Three doctoral graduates indicated that video games are not an interest. Video games, such as the Wii™ (physical game), may be good for sporting activities. Sporting events and target practice,

responded one doctoral graduate, helped with maintaining coordination, balance, and physical and mental stimulation. One of the White female doctoral graduate responded, “When educators talk about using the Internet for game-teaching, I do not think they understand how the brain really works. It is fine for disseminating keystrokes, just as disseminating books is; it was no relationship to truth.”

Findings show that most doctoral graduates engage in game activity for pleasure or entertainment, relaxation, or filling time during the evening rather than being outside, when time permits (i.e., to watch games like Jeopardy®). Reluctant to engage in game activities is associated with a lack of motivation or interest in board games or competition. Findings overall show that when games are presented a “warm” environment and competition is limited, doctoral graduates welcome games as a means to accumulate knowledge and reward themselves.

Results

Through reflection, several doctoral graduates most born between 1944-1980 were able to identify and apply how games contribute to the accumulation of knowledge; therefore, an association can be inferred to exist between the transfer of instructions and the stimulation of competitiveness and the accumulation of knowledge. Although some doctoral graduates responded that games were not played in school or at home, the mental ability to recognize and understand the concept of games while watching television or others play in the neighborhood (i.e., visual instruction) or reading stories about playing or listening to games on a radio (i.e., audio instruction) may have influenced these graduates’ learning capabilities, which validate the TD learning theory offered by Dayan and Sejnowski (1994) and Mańdziuk and Osman (n.d.). In the

observation study, listening to instructions and observing peers in the group setting played significant roles in achieving a winning status. Findings further show that through organization and instructions, children master learning, and once understanding is achieved, competitiveness emerges, which either lead to success (oftentimes referred to as winning in game-based activities) or dissatisfaction (see Figure 1 for the academic transformation & learning activity success taxonomy [ATLAST] designed by Brenda Nelson-Porter, DM).

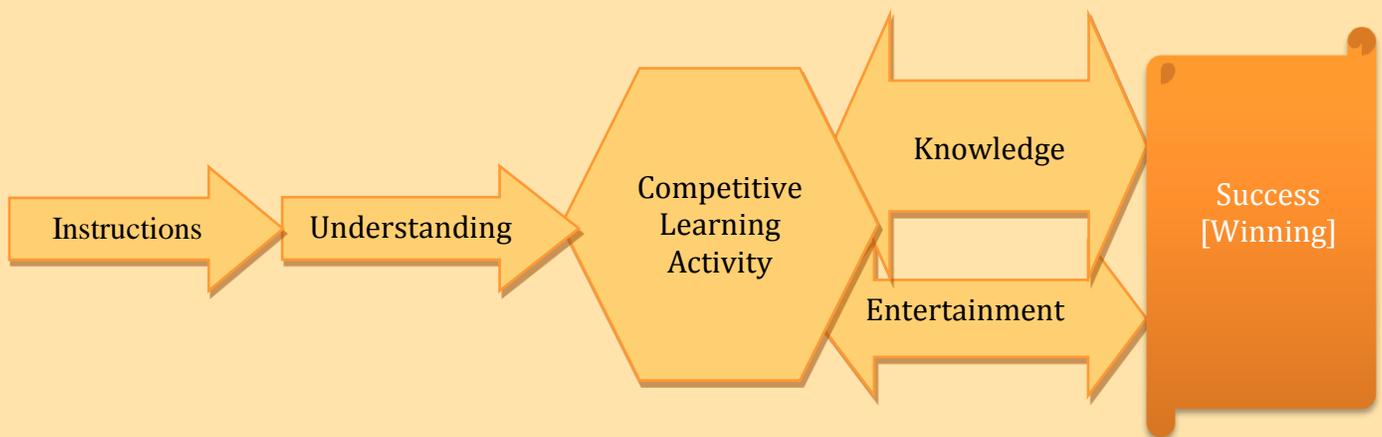


Figure 1. Academic Transformation & Learning Activity Success Taxonomy (ATLAST)

Success can be further defined for children as earning a Grade A or obtaining tangible items (e.g., chocolates) or gestures (e.g., a hug). Winning for doctoral level learners and graduates often is associated with achieving self-satisfaction, increased knowledge, a terminal degree, or recognition in the workplace. Earning rewards, a stimulus for competitiveness, received as a result of winning game-based activities based on proper introduction or instruction, thus, are associated with the accumulation of knowledge. Through memorization, association, and repetition, doctoral graduates possess the capability to recall successful processes and outcomes associated with the accumulation of contextual and mathematical knowledge that was learned as children during game related activities and relay and apply the behaviors in doctoral level learning activities.

Based on findings from the virtual study, the discovery that game activities enhance reading, organizational or managerial, critical thinking, strategizing, analytical, team building, risk taking, and innovation skills are reflective of learning capacities



warranted to solve problems and change cultures. The game academic model for educators (GAME), designed by Brenda Nelson-Porter, DM, displayed as Figure 2 shows the elements of competitive learning strategies that can be associated with stimulating positive learning and social

behaviors. The image reflects the game board, and the corners of the image reflect the location of each player and the knowledge that each may contribute in the game. The game strategies may be applied in Doctoral program settings.

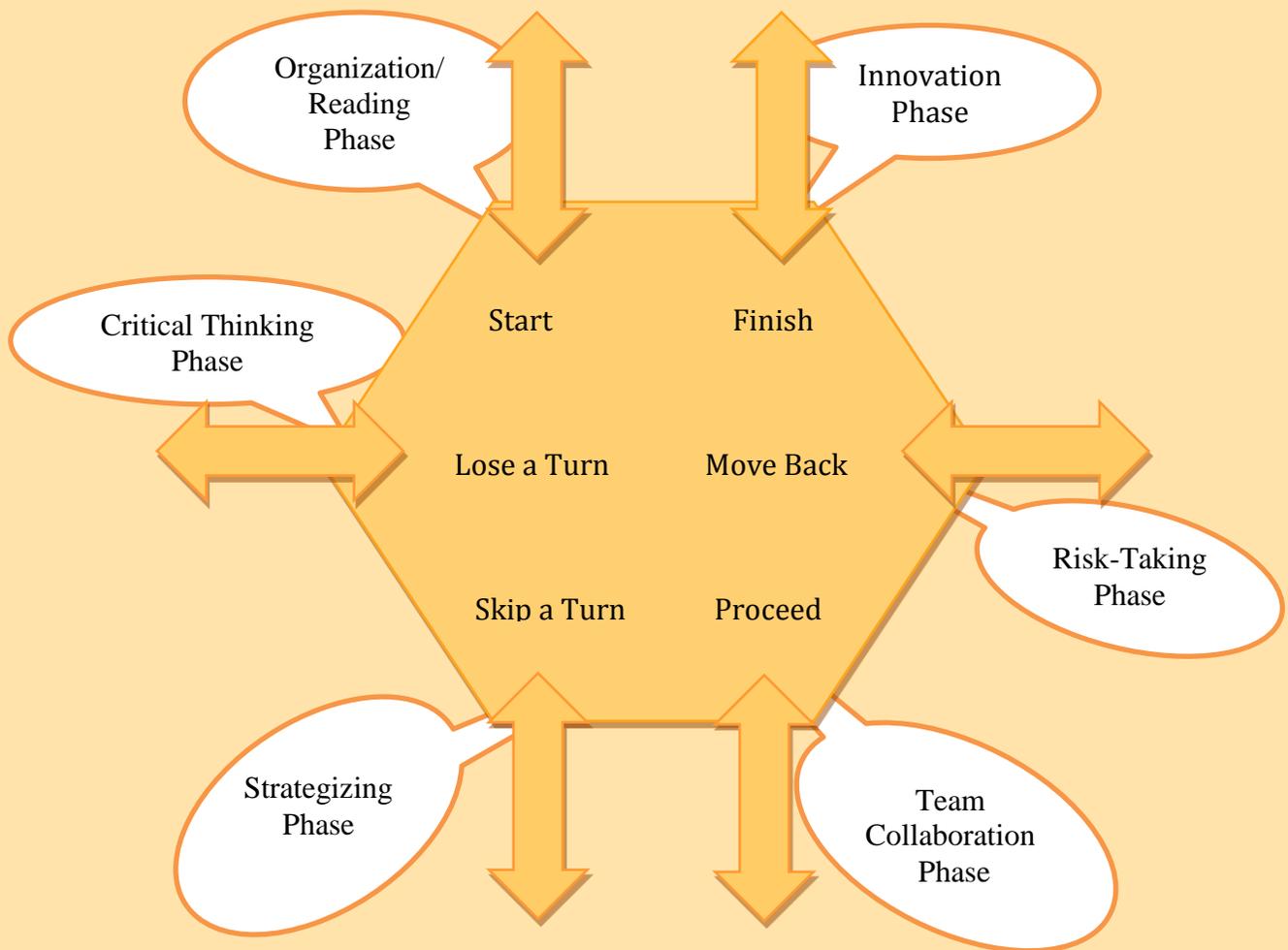


Figure 2. Game Academic Model for Educators (GAME)

Academic leaders and curriculum developers may consider incorporating Monopoly® in Management, Organizational Leadership, Entrepreneurial, Finance, Accounting Doctoral programs to associate the concept of financial management. The game Scrabble® may be incorporated in writing courses to build awareness of scholarly terminologies. The game, Ludo, may be included in Statistical courses to enhance analytical skills.

Games or activities, such as Name That Composer and the composition of Songs based on the content of curriculums, may be incorporated into the Musical Theatre & Arts Doctoral programs. Magic show activities may be incorporated in group activities to enhance presentation skills. Card games are reflective in all academic settings, as index cards are used to document notes, literatures, and context of lectures to recall relevant information. Games that may be incorporated in Doctoral courses are not exhausted to the games listed in Table 1.

Findings, however, did not show how competitive strategies may result in unethical behaviors. Features of games, such as “Go to Jail” featured in Monopoly® and “Chutes” featured in Chutes and Ladders®, display the results of unfortunate moves, which mimic the actions encountered when individuals become over consumed with competitiveness and display unethical behaviors. Some doctoral graduates, however, implied that losing leads to dissatisfaction and low self-esteem. As established by Kumar and Lightner (2007), a need exists to investigate further the impact of games as learning tools, which includes doctoral learners’ accumulation of knowledge based on the findings from the study.

Limitations and Future Research

Based on the external consultant's analysis of the attributes, some inconsistencies existed throughout the options given by the doctoral graduates where choices were not provided. Inconsistencies were identified in the labeling of the graduates and the manner in which the graduates identified themselves in regards to race. Some of the choices provided could have fallen under one category, such as African American or Black and Caucasian or White, but because the choices provided were from the participant, categorizing the answers was not an option. Not all of the participants provided a city and state as requested. Some only provided states and no cities, while others did not provide a city or state. A few provided the name of a country.

Confusion during the analysis phase may have existed in the choices labeled UOP and Phoenix. Because one of the researchers was knowledgeable of the participants, no confusion was noted by the researcher; UOP Online was categorized to represent the university in the findings. To reduce confusion, categories may have been listed. To obtain more in-depth knowledge or clarity, one male doctoral graduate believed that certain terms may be defined, such as "game" or "pure entertainment" versus "playtime". That participant was further confused if the researchers meant "inherently competitive" vs. "inherently competent" for associated research question 3. Based on the responses, "inherently competent" returned adequate scenarios.

This study may be repeated using more doctoral graduates as participants deploying the suggestions offered in this section. Repeating the observational study using the same children will be difficult, as the children have aged and have different interests. Repeating the study as a longitudinal study using the same children, would be difficult, as

adults, the children may not elect to obtain a doctoral degree. Further research may validate the findings.

Consideration may be given to classic and contemporary games and activities not recalled in the study, such as Battleship®, Candy Land®, Hungry Hungry Hippos®, Ants In The Pants®, Don't Wake Daddy®, Trouble®, Guess Who?®, Pictionary®, Times to Remember™, Yahtzee®, Pachisi, Operations, Thin Ice, Hang Man, Would You Rather, and Darts, which may enhance academic learning, mental awareness, and participation.



Card games not recalled include Poker, Bridge, Spade, Bid Whisk, Go Fish, Mr. Potato Head® Memory Game, and Old Maid. String figure games, such as Cup and Saucer, were not recalled. Outdoor or sporting activities not recalled include Dodgeball, Double Dutch, Rock Climbing, Lumberjack, and Archery. Musical games may include Name That Tune. This listing of games is not exhausted.

Consideration may be given to the geographical location or environment whereby the games are played and the background of the users, whether children or adults, when comparing the outcome associated with a specific activity. Disadvantaged children usually make up their own games or substitute items associated with a specific game of lesser value to play that specific games learned. For example, according to a relative of one of the researchers, to play softball, economically disadvantaged children in the neighborhood would fill the heads of dolls with dirt to play the game and use broken glass (i.e., from beer or coke bottles or thick drinking glasses) to play Hopscotch.

Research may approach how different items (e.g., color pieces vs. non-color pieces) shape the mental thoughts of users increasing or limiting learning capacity in comparison to their peers.



Researchers may further inquire if games that reflect the structure of educational systems and/or game pieces that reflect the elements of higher education will stimulate learning for doctoral learners and candidates.

For example in a chess game, the Queen may represent the university, the King may represent the Dean, the Bishops, Rook, and Knight may represent lead professors and mentors, and the Pawns may represent the doctoral learners. The areas on the chess board may represent the areas of a university campus or courses offered at a particular university.

Consideration may be further given to participants with disabilities. Not being able to recall certain information (instructions) may result in limit capacity to accumulate knowledge. Although inconsistencies existed, the results of the study support the assumption that learning games and competitiveness may contribute to the accumulation of knowledge in Doctoral programs based on the premise that children gain knowledge through instructions and interactions during playtime.

Conclusion

Because most of the doctoral graduates were able to identify and apply how games contributed to the accumulation of knowledge, an association can be inferred to exist between the transfer of instructions or competitiveness to the accumulation of

knowledge. The mind of the youth seems to perceive games as purely entertainment, when in awe, games contribute more so to social and knowledge building. Social behaviors of children during playtime may reflect the behaviors and attitudes of doctoral learners during game-based learning, when values are placed of either winning or losing, which further validate the TD learning theory offered by Dayan and Sejnowski (1994) and Mańdziuk and Osman (n.d.).

Because doctoral programs are highly stressful environments, games reflective of the subject under study may reduce anxiety and unhealthy competition if the activities encourage ethical behaviors and the learners possess the ability to recall fundamental knowledge learned in grade school. Games, such as Jeopardy®, may help doctoral learners and graduates memorize terminologies and the history of theories, theorists, and concepts enhancing their capability to be awarded a terminal degree and obtain a Graduate Professorship position. Because doctoral and dissertation professors, mentors, coaches, and qualitative analysts are often familiar with scholarly writing and publishing in academic and journal publishing, Doctoral learners, candidates, or graduates who experience difficulty understanding scholarly content or context, may rely on these professionals' instructions and further rely on games, such as Upwords® and Scrabble®, to build spelling, vocabulary, reading, and editing skills. Games, such as Monopoly® and Ludo, may further enhance analytical skills that are needed to become a Statistician.

Doctoral learners who rely on group participation along with proper instructions offered by Academic Leaders or Professors, **Independent Dissertation Consultants** (IDCs), and **Visionary Mentors** are able to gain diverse skills and knowledge and usually become competitive assets in the workforce. Group participation involving the

deployment of the GAME concept may increase individual learning capacity to apply relevant facts in the global society. In the specific context, games are apparently educational tools that increase learning capacity when proper instructions are provided. The obvious is that games reinforce competition inspiring scholars to possibly innovate and conduct future research on the elements that stimulate positive competition vs. negative competition or healthy vs. unhealthy behaviors.

Acknowledgement

Because game activities played as children apply to the learning development of doctoral learners, candidates, and graduates, the Alumni Association Network (AAN) filed a Provisional Patent in 2007, whereby University Alumni through collaboration with AAN, the University, and Game Company may create educational board games, preferably for doctorate level learners. “Games and simulations help organizations develop symbolic thinking and gestalt understanding; help them create memories of the future; enable shared experiences and the building of shared intelligence; and, possibly most important, develop their members' motivation and confidence to act” (Kumar & Lightner, 2007, p. 54). The outcome of the interactions amongst doctoral graduates to create inquiry-based learning games and strategize and doctoral learners to learn from playing the games may be captured in scholarly sources, which may further enhance the social skills of scholars while adding to the body of knowledge. Through AAN, Scholastic Research Institute (SRI), doctoral candidates and graduates may participant in sessions to compose scholarly peer-reviewed sources.

References

- Dayan, P., & Sejnowski, T. J. (1994). TD(X) converges with probability 1. *Machine Learning, 14*, 295-301. Retrieved from <http://citeseer.ist.psu.edu/viewdoc/download;jsessionid=20EF2F98FD2A4F934121324DC4F96E79?doi=10.1.1.165.1916&rep=rep1&type=pdf>
- Kumar, R., & Lightner, L. (2007). Games as an interactive classroom technique: Perceptions of corporate trainers, college instructors and students. *International Journal of Teaching and Learning in Higher Education, 19*(1), 53-63. Retrieved from <http://www.isetl.org/ijtlhe/pdf/IJTLHE157.pdf>
- Leedy, P. D. (1997). *Practical research: Planning and design* (6th ed.). Upper Saddle River, NJ: Prentice-Hall.
- Mańdziuk, J., & Osman, D. (n.d.). Temporal difference approach to playing give-away checkers. Retrieved from http://www.mini.pw.edu.pl/~mandziuk/GAC-ARENA/ICAISC04-LNAI_3070.pdf
- Oliver, R. (2001). Developing online learning environments that support knowledge construction. Retrieved from <http://elrond.scam.ecu.edu.au/oliver/>
- Reeves, T. C., Herrington, J., & Oliver, R. (2002). Authentic activities and online learning. *Higher Education Research and Development (HERD), 562-567*. Retrieved from <http://elrond.scam.ecu.edu.au/oliver/2002/Reeves.pdf>

About the Researchers



As the Founder and CEO of Brigette's Technology Consulting and Research Firm and the Alumni Association Network (AAN), **Dr. Brenda Lynn Nelson-Porter** primarily promotes ethical doctoral-level and virtual mini-research projects. Dr. Nelson-Porter is currently enrolled in the Executive Juris Doctor (EJD) Degree program at Concord Law School. Dr. Nelson-Porter received her Doctorate in Management in 2004 from the University of Phoenix (UOP)-Online. Since 2004, Dr. Nelson-Porter has composed and self-published several peer-reviewed articles and e-books based on the mini-research projects.

In 2005, Dr. Nelson-Porter debated before the United Nations World Summit on the Information Society in Tunis, Africa. The e-Journal, *Mobilizing The International Workforce*, details Dr. Nelson-Porter's participation as a debater on gender equality at the Summit. Dr. Nelson-Porter's accomplishments include:

- Nominated and was of the Top 15 Candidacy for the "*Ewing Marion Kauffman Foundation Outstanding Postdoctoral Entrepreneur Award*" in 2009.
- Recognition via correspondence from Georgia's Governor and State Senators for leading a Community Clean-up in 2004-2005.
- Recipient of the "*President's Award*" in 2000 from the National Association Purchasing Management (NAPM-GA). Increased membership by 34% in 1999 within a 9-month time frame, which placed Georgia as the No. 5 Affiliate to recruit the most members.
- Recipient of the "*Navy Achievement Medal (NAM)*" in 1995 for outstanding performance for supervising and evaluating eight U.S. Marines who maintained personnel records.



Dr. Christine Hansen, founding partner of Hansen Partnership, disapproves of labels and stereotypes. A concert pianist by the age of nine, Dr. Hansen is a published writer, critic, satirist, composer, one of the earliest Intellectual Property lawyers, and IT company owners to champion Open Source Technology. Throughout her life, Hansen has worked for fundamental fairness and defended those who could not defend themselves. Hansen is expanding her vision globally. Dr. Hansen is exploring the most practical uses of knowledge - and of wisdom – in the digital world using Open Source Technology. Dr. Hansen is considered an expert at replacing archaic codes with practical and original solutions drawn from law, philosophy, history, language, music, and the theories of mathematics and physics.

Hansen was educated at L'Ecole Normale de Musique de Paris, University of Missouri, Pembroke College, and Cambridge University.

Dr. Hansen spoke before the United Nations World Summit on the Information Society in Tunis, Africa. As an expert on Open Source, Hansen also presented with a colleague from IBM at the International Forum of ICT Strategies and Investment (IFISI) in Morocco: The Costs of Not Doing Business with Open Source Technologies in Developing Countries.

Dr. Cynthia (Cyndy) Grey received her Doctorate in Management in 2005 from UOP-Online. Dr. Grey received her Journalism with a teaching certification from the University of Houston, Bachelors in English, and Masters in Personnel from the University of Memphis. Dr. Grey is an Adjunct On-line Instructor for St. Petersburg College's Bachelor in Applied Science in Veterinary Technology Degree program. Dr. Grey was the hospital administrator for Germantown Parkway Animal Hospital in Cordova, TN., a 1998 *Veterinary Economics* Practice of Excellence award winner. Dr. Grey's published works include: *Managerial Ethics: A Quantitative, Correlational Study of Values and Leadership Styles of Veterinary Hospital Managers*, *Managers Possess Traits Indicative of Moral Leaders*, and *Marketing Your Practice: Going Beyond 'Advertising'*.



COMPETITIVENESS: DOCTORAL USER-CENTERED LEARNING GAMES



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