

# Gendered Play and Evaluation of Computer Video Games by Young South Africans

Gender, Technology  
and Development  
16(2) 177–196  
© 2012 Asian Institute  
of Technology  
SAGE Publications  
Los Angeles, London,  
New Delhi, Singapore,  
Washington DC

DOI: 10.1177/097185241201600203  
<http://gtd.sagepub.com>



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## Abstract

This study investigates the preferences and attitudes of young South Africans who play and evaluate computer video games. The quantitative data reported here is part of a partially mixed concurrent quantitative/qualitative research design. Seventy-eight participants (14 to 24 years old) took part in game play workshops that lasted for five days, after which they answered a survey. Results show that young South African women and men like similar games, identify with female game characters, dislike cognitively challenging games, and rate their competitiveness in a similar way. It is argued that participants performed their gendered stereotypes based on prior social experiences in and expectations of the patriarchal and heteronormative masculine South African society. The study also discusses the implications for the use of games in the classroom.

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## Keywords

Games for teaching and learning, computer video games, game play and evaluation, hegemonic masculinity, gender performativity

## Introduction

This article investigates the gendered preferences and attitudes of young (14- to 24-year-old) South African women and men who play and evaluate computer video games. A central question posed by this research is how similarly young South African women and men comprehend computer video game play. The answer to this question is important as games could play an important role in teaching and learning (Amory, Naicker, Vincent, & Adams, 1999; Gee, 2003). Research indicates that in many instances women and men play computer video games differently.

Playing games is a natural part of the male routine (Bonanno & Kommers, 2008); men play more games than women (Cherney & London, 2006; Ogletree & Drake, 2007) and men are more motivated to play and have a more positive attitude toward games (Bonanno & Kommers, 2008). Women and men appear to have different game preferences (Heeter, Egidio, Mishra, Winn, & Winn, 2009). Women preferred puzzles, adventures, fighting, and management games, while men liked first-person shooters, role playing, sports, strategy, and competitive multiplayer games (Bonanno & Kommers, 2005; Karakus, Inal, & Cagiltay, 2008). Apart from preferences, women and men also play games differently. For example, men are better than women at mental-rotation skills (Quaiser-Pohl, Geiser, & Lehmann, 2006), which are often an important skill required during game play. However, our study found that in some situations, game play by men and women is similar.

For both women and men, gender/sex is not significantly related to game play, level of play, or the number of games played (Ogletree & Drake, 2007). Minimal computer video game practices improve mental rotation skills in both genders/sexes (Cherney, 2008) contradicting earlier findings by Quaiser-Pohl et al. (2006). Furthermore, women and men are not significantly different in the measurement of their visual memory and perceptual organization (Ferguson, Cruz, & Rueda, 2008). Vekiri and Chronaki (2008) argued that the way in which men and

women play games may depend on socialization related to self-efficacy and values.

Ridgeway and Correll (2004) observed that gender was often related to sex categorization as a result of the social practices of stereotyping and inequalities that see people as two different categories. Such positions are reminiscent of the gender ideological arguments of the past, and go back to the late twentieth-century debate about sex differences and are the basis of the sex role theory. This theory fostered the idea that in a nuclear family, men are channeled into instrumental roles and women into expressive roles (Messner, 1998). However, the sex role theory has been widely critiqued.

Connell (1995) suggested that gender did not reside in an individual, but in socially gendered transactions. Connell argued that the sex role theory was about expectations, could not deal with power and gender politics, exaggerated and prescribed social behavior, reduced gender to two homogenous categories, and ignored gender politics. Messner (1998) critiqued the sex role theory by arguing that it was individualistic rather than concerned with the power relationships between groups, implied a symmetry between men and women that is false, was about perpetuating a white, middle-class norm, and could not adequately examine history, resistance, and change. Despite such critiques of the sex role theory, the idea of sex differences is deeply embedded in the psyche of both researchers and the wider society so as to foster and maintain ruling class hegemonic practices of masculine dominance. Donaldson (1993) suggested that masculine hegemonies are hierarchically differentiated, brutal and violent, heterosexual and homophobic, and women exist as sexual objects for men. In a bid to better understand masculinities, Connell (1995) argued that “bodily differences become social reality through body-reflexive practices, in which the social relations of gender are experienced in the body...and are themselves constituted in bodily action” (p. 231). This work supports the ideas of gender performative acts as espoused by Butler (1988), who posited that gender “reality is performative, which means, quite simply, that it is real only to the extent it is performed” (p. 527). Thus, we learn to “perform” our gender. However, these acts are managed and maintained through the hegemonic practices (including social sanction and taboo) of men. It is, therefore, necessary to understand how masculine hegemonic practices are part of computer video games.

Dietz (1998) found that the game designs of 33 computer video games perpetuated male–female hegemony, as 41 percent of the games included no female characters, 28 percent portrayed women as sex objects, 50 percent included violence directed at others, and 21 percent showed violence against women. In addition, female game characters are often depicted as helpless, weak, nonaggressive, sexually provocative in revealing clothes, and of an “innocent” appearance (Downs & Smith, 2010; Ogletree & Drake, 2007). Most computer video games support male stories filled with powerful masculine heroes who are central to the narrative (Kiesler, Sproull, & Eccles, 1985). Heeter et al. (2009) suggested that game design is a closed self-perpetuating system made by men for other boys and men, hence turning into a vicious hegemonic cycle. Within such a system, the depiction of women as marginalized characters might be a side effect of enshrining male players as the norm (Carr, 2005), but more likely, stories created by men (and sometimes women) perpetuate male hegemonic fantasies. Therefore, the design of computer video games is strongly influenced by masculine hegemonic ideology.

Carr (2005) argued that gender alone is not a reliable predictor of gaming habits, but these habits may arise due to prior gaming experience, the association of masculinity with video games, and video games designed for only the masculine gender.

While men might be more competitive than women (Lucas & Sherry, 2004), Jenson and de Castell (2008) showed that girls are just as competitive as boys, and argued that the conventional gender performances related to game play are hegemonic, purposeful, and heteronormative, which means punitive social, familial, and legal rules govern heterosexual standards for identity (Felluga, 2011).

As this study involved young South Africans, it is necessary to understand the manifestation of the current South African masculine hegemonic practices. Bhana, Morrell, Hearn, and Moletsane (2007) suggested that no gender binaries were present in pre-colonial Africa—gender divisions were fluid, women were leaders, and were neither subjected to discrimination nor were they subordinate to men. They posited that the arrival of Islam and Christianity introduced notions of the superiority of men over women and moralistic attitudes toward sex. Morrell (1998) argued that colonialism created a class and race system of dominance and subordination by white men of black boys, which with the

introduction of apartheid resulted in the emergence of a different black masculinity that was no longer related to chiefs, homestead, or country-side, but to violence in order to overcome the feeling of emasculation. As a consequence, there was a systematic suppression of women's sexuality, a conflation of reproduction and sexuality, and the maintenance of the heteronormative position through vigilant cultural surveillance (McFadden, 2003). Therefore, in South Africa, the hypersexual, patriarchal, and heteronormative ruling masculinity is celebrated through sexual penetration of multiple partners, coercion of young women into a heterosexual version of femininity, policing of women's sexuality from a post-colonial concept of African culture, and suppression of female sexuality and rejection of homosexuality (Bhana et al., 2007; Ratele, 2008).

If computer video games are to be used in the classroom to support learning and teaching, it is necessary for educators to understand how young South Africans play and evaluate computer video games, besides being familiar with their gender biases and gendered performativity within the South African context.

## **Methods**

### *Research Paradigm*

The work reported in this article is the quantitative part of a mixed methods research investigation, which typically refers to the mixing of quantitative and qualitative data collection and analyses (Tashakkori & Teddlie, 1998). However, in an analysis of the quantitative–qualitative divide, Bergman (2008) suggested that mixed method research should be described in terms of data collection methods, and use of inductive or deductive approaches. It should also distinguish between researcher habits, on the one hand, and data collection, on the other hand, besides methods of analysis and alignment of the research methods to the research question. In this research investigation to inductively develop an understanding of gendered game play by young South African women and men, data were collected using questionnaires, and observations and semi-structured focus group interviews. The questionnaires were analyzed using statistical methods, while content analysis was used to investigate the unstructured data.

As the research was conducted at a number of different geographical locations in South Africa, it was necessary to collect both the quantitative and qualitative data during each site visit. Observations took place during game play and during the completion of the questionnaires. Focus group interviews took place at the end of the workshop. The research design can, therefore, be described as a partially mixed concurrent equal status design (Leech & Onwuegbuzie, 2009). This article reports on the quantitative data set.

## *Participants*

Seventy-eight participants from five major urban centers (Pretoria, Polokwane, Johannesburg, Durban, and Cape Town) were selected to participate in the study. Due to the unequal nature of the South African society, a non-probability quota sampling method was used. The sample comprised various layers of the South African society, including both women and men, people with little or no experience of computer video games, and a representation of different economic sectors of the South African population groups (Africans, Coloureds, Indians, and Whites). This approach is the non-parametric equivalent of stratified random sampling. Consequently, data analyses made use of non-parametric statistical analyses, as described in the following paragraphs.

Participants (37 women and 41 men) took part in a five-day game play workshop where they played a number of games. During the workshops each individual was part of both mixed and similar gender/sex groups. Participants were able to choose their partners and the games they wished to play on each day. The research reported here is concerned with how women and men played games, and reports on the analyses of a large number of individual questionnaire responses made by women ( $n = 230$ ) and men ( $n = 320$ ). Participants were between 14 and 24 years old with a mean age of 16 years.

## *Games*

The seven commercial computer video games selected for this project included those identified by editors of GameSpot (<http://www.gamespot.com>)

as the best PC computer video games for 2004, and included Half-Life 2, a first-person shooter; Myst IV Revelation, a puzzle solving adventure game filled with complex life-like worlds; Need for Speed Underground 2, a motor car racing game with realistically rendered cars and racing environments; The Sims 2, a simulation game; Tiger Woods PGA Tour 2006 (replaces the 2004 edition that was not commercially available), a sport simulation game; Unreal Tournament 2004, a first-person shooter game; and Warcraft III—Reign of Chaos (replaces World of Warcraft that is not playable in South Africa), a real-time strategy game. In addition, participants played an educational game on the biology of HIV/AIDS and other diseases titled *γKhozi—The Burning Ground* that was created by Seagram (2005).

### *Game Play Workshop*

At the start of each workshop hosted by five universities (Tswane University of Technology and universities of the North, Johannesburg, KwaZulu-Natal, and Cape Town), participants answered a number of questions related to their access to and use of computers. Participants were then asked to play as many games as possible over the five-day period, and were told that each day they would play in a different group. All the games were played on identical laptop computers provided by the researchers. Participants were encouraged to comment about, or discuss, anything they encountered during game play with peers and the facilitators. They completed a game evaluation questionnaire after playing a game.

### *Game Evaluation Instrument*

The primary research instrument, a questionnaire based on the Game Object Model version II (Amory, 2007), consisted of 60 statements associated with a four-point Likert scale (1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree) and two 10-point numeric Likert scale statements (one to rate the game and the other a recommendation for the game) (Amory, 2006). The 60 four-point Likert scale items

included 20 on the game environment (mechanics of game play, graphs and sound), 10 statements related to the authentic learning concepts, 10 on game challenges, 5 on player collaboration preferences, and 15 on game gender attributes.

### *Data Analysis*

Descriptive statistics are presented to summarize participant responses. As response options were categorical by nature and not normally distributed, non-parametric tests were used. Cronbach's alpha reliability coefficient was used to test the reliability of the research instrument. During the initial evaluation, the Cronbach's alpha for questions related to challenges was less than 0.6. Factor analysis of the data suggested that there were significant relationships among the variables (Bartlett's Test of Sphericity significance  $< 0.001$ ) and two items had very low ( $> 0.2$ ) communalities extraction values. Exclusion of these two items produced a Cronbach's alpha of 0.705. Reliability analyses for the items related to core concepts, gender, and game environment were 0.846, 0.718, and 0.808, respectively. SPSS version 15 from Lead Technologies, Inc., was used for all data analyses.

## **Results**

### *Computer Experience*

Less than one-third of the young women and 40 percent of the young men had access to computer technology at home. Both women and men started using computer technology in their teens (13 years on average) and were introduced to computer video games in their mid-teens (16 years on average). However, on observation it was obvious that many of the participants were inexperienced computer users with little experience in playing contemporary computer video games. Most participants (98 percent) thought that games were designed for women and men, but 83 percent of the young men and 43 percent of the young women thought that men were better at playing computer video games.



## Game Play

Women and men playing together spent more time playing the games than when they played with same-sex partners (Table 1). Less time was spent on playing *Half-Life 2*, as this game required Internet access that was available only at three sites. When playing in same-sex groups, men played each game longer. Men spent the maximum time playing *Unreal Tournament*, *γKhozi*, and the *Sims*, and women spent the most time playing *γKhozi* and the *Sims*. Participants played each game for an average of 1 hour and 40 minutes.

## Game Preferences

Participants were asked to rate (Table 2) and make recommendations (Table 3) for each game.

Young women and men with little prior computer game experience rated the games in a similar way and identified *Need for Speed* and *Tiger Woods* as the top-rated games (Table 2). However, men rated *Unreal Tournament* much more highly than did the women. The highest and lowest scores for women were 8.06 for *Need for Speed* and 5.24 for *Unreal Tournament*. The men tended to rate the top game *Need for Speed* higher (8.57) and the lowest game *Warcraft III* more stringently (5.10) than the women. However, these differences were not significant. Women

**Table 1.** Time Spent Playing Games (in hours)

Game	Men		Women		Women and Men	
	<i>n</i>	<i>h</i>	<i>n</i>	<i>h</i>	<i>n</i>	<i>h</i>
Unreal Tournament	42	78	35	53	76	136
γKhozi	40	75	37	59	80	129
Need for Speed	42	63	34	51	74	126
Myst IV	40	67	27	52	66	121
Sims 2	43	70	34	58	77	116
Warcraft III	39	69	28	45	68	116
Tiger Woods	37	60	26	40	63	100
Half-Life 2	16	30	9	23	25	53
<b>Total</b>		<b>512</b>		<b>381</b>		<b>897</b>

**Source:** Based on the results of the survey carried out by the authors.

**Notes:** *n* = number of observations; *h* = number of hours.

**Table 2.** Mean Rating of Each Game by Women and Men

Game	Women		Men	
	Mean $\pm$ SE	<i>n</i>	Mean $\pm$ SE	<i>n</i>
Need for Speed	8.06 $\pm$ 0.38	34	8.57 $\pm$ 0.36	42
Tiger Woods	7.85 $\pm$ 0.15	26	8.24 $\pm$ 0.14	37
Half-Life 2	7.20 $\pm$ 0.74	10	7.24 $\pm$ 0.45	15
Sims 2	6.74 $\pm$ 0.34	34	6.74 $\pm$ 0.38	43
Myst IV	5.67 $\pm$ 0.23	27	5.43 $\pm$ 0.28	40
$\gamma$ Khozi	5.59 $\pm$ 0.35	37	5.27 $\pm$ 0.33	41
Warcraft III	5.46 $\pm$ 0.43	28	5.10 $\pm$ 0.37	39
Unreal Tournament**	5.24 $\pm$ 0.37	34	7.37 $\pm$ 0.34	43

**Source:** Based on the results of the survey carried out by the authors.

**Note:** \*\*Mann-Whitney U  $p < 0.001$ .

**Table 3.** Mean Recommendations Made by Women and Men for Each Game

Game	Women		Men	
	Mean $\pm$ SE	<i>n</i>	Mean $\pm$ SE	<i>n</i>
Tiger Woods	9.08 $\pm$ 0.20	26	9.22 $\pm$ 0.19	37
Need for Speed	8.82 $\pm$ 0.29	34	9.05 $\pm$ 0.23	42
Half-Life	8.30 $\pm$ 0.67	10	8.53 $\pm$ 0.45	15
Sims 2	8.03 $\pm$ 0.36	34	7.79 $\pm$ 0.34	43
Myst IV	7.22 $\pm$ 0.41	27	6.55 $\pm$ 0.38	40
Unreal Tournament**	6.68 $\pm$ 0.38	34	8.26 $\pm$ 0.23	43
Warcraft III	6.25 $\pm$ 0.46	28	6.72 $\pm$ 0.36	39
$\gamma$ Khozi	2.43 $\pm$ 0.16	37	2.37 $\pm$ 0.15	41

**Source:** Based on the results of the survey carried out by the authors.

**Note:** \*\*Mann-Whitney U  $p < 0.001$ .

rated Unreal Tournament significantly lower than the men at 5.24 and 7.37, respectively.

When asked which games they would recommend, women and men both selected Tiger Woods and Need for Speed (Table 3). Men (8.26) again recommended Unreal Tournament more highly than the women (6.68). The educational game  $\gamma$ Khozi received the lowest recommendation.

## Game Environment

Participants were asked to rate the game control, user interface, graphics, and sound. These game attributes are used by most reviewers who

critique games professionally. Women and men rated game control and the user-interface elements in a similar way (Table 4). However, statistically higher scores were recorded by women than men for a number of statements such as “the game included rules that responded to my game play,” “at times the game anticipated my moves,” “the game controls were easy to find,” and “play time is wasted during the loading of game levels.”

With respect to the graphical elements of the games, both the young women and men held similar opinions, except that the women thought

**Table 4.** Mean Ratings of the Game Environment by Women and Men

Statement	Women ( <i>n</i> = 230)	Men ( <i>n</i> = 320)
	Mean ± SE	Mean ± SE
The game controls allowed me to easily play the game	2.80 ± 0.05	2.92 ± 0.05
The mechanics of the game play were easy to use	2.70 ± 0.05	2.77 ± 0.05
Playing the game required me to remember many keystroke combinations	2.69 ± 0.05	2.80 ± 0.05
The game included rules that responded to my game play*	2.68 ± 0.05	2.82 ± 0.04
At times the game anticipated my moves*	2.63 ± 0.05	2.50 ± 0.05
The game controls were easy to find*	2.61 ± 0.06	2.78 ± 0.05
Play time is wasted during the loading of game levels*	2.51 ± 0.05	2.39 ± 0.06
The game controls were confusing to use	2.32 ± 0.06	2.31 ± 0.06
At times the game made stupid decisions	2.28 ± 0.06	2.27 ± 0.05
It irritated me to use keyboard and mouse clicks	2.24 ± 0.05	2.24 ± 0.05
I found the graphics of the game beautiful	3.00 ± 0.05	3.12 ± 0.05
The game environment is visually appealing*	2.83 ± 0.05	2.97 ± 0.05
The game characters are visually appealing	2.83 ± 0.05	2.91 ± 0.05
I understood the graphical icons in the game	2.78 ± 0.05	2.84 ± 0.05
I can change the appearance of the game characters	2.41 ± 0.06	2.45 ± 0.05
The pictures, sound, and music work well together	3.17 ± 0.05	3.24 ± 0.04
The music matched the game story	3.07 ± 0.05	3.07 ± 0.05
The sound effects enhanced the game actions*	3.03 ± 0.05	3.16 ± 0.05
The sound effects are realistic	3.01 ± 0.05	3.03 ± 0.05
The music complemented game actions*	2.87 ± 0.05	3.00 ± 0.05

**Source:** Based on the results of the survey carried out by the authors.

**Note:** \* Mann-Whitney U *p* < 0.05.

the games were more visually appealing than what the men thought (Table 4). A similar trend was observed in their comments on the use of sound in the games: both groups responded in a similar manner except that the women scored two options ("The sound effects enhanced the game actions" and "The music complemented game actions") differently from the men. Both women and men rated game music and sound effects higher than the graphics and game controls.

### *Games as Authentic Learning*

Amory (2007) argues that games useful in the classroom could be viewed as part of authentic task-based collaborative learning environments that include complex tasks, model-building simulations, and multiple representations and reflections to foster transformative opportunities. The findings of this study corroborated this premise, with participants responding positively to the instrument items related to authentic learning (Table 5).

While the responses from the two groups were similar, women's response was less positive than that of men. The differences were significant for a number of statements given in the questionnaire such as "I came to understand new ideas by playing the game," "As a group we found other information to overcome obstacles," "I identified a well developed story during game play," "I reflected on the strategies I used during game play," "I easily relate to the way in which the game was portrayed." However, two of these statements, on reflection and on the way a game is portrayed, were significantly different ( $p < 0.001$ ). While the overall responses in this category were positive, the range of responses was small (3.0 to 2.63).

### *Game Challenges*

The challenges, quests, and puzzles embedded in games are often used to drive the game narrative or advance the player to the next level. While both women and men gave similar responses to questions on game challenges, the men were often more positive in their responses, especially to the questions related to forgetting about time during game play and the

**Table 5.** Mean Ratings of Authentic Learning Game Attributes by Women and Men

Statement	Women ( <i>n</i> = 230)	Men ( <i>n</i> = 320)
	Mean $\pm$ SE	Mean $\pm$ SE
We as a group came to understand different ideas by playing this game	2.90 $\pm$ 0.05	2.91 $\pm$ 0.05
We as a group came to understand new ideas by playing this game	2.89 $\pm$ 0.05	2.95 $\pm$ 0.05
I came to understand new ideas by playing this game*	2.86 $\pm$ 0.05	3.00 $\pm$ 0.05
As a group we easily relate to the way the game was portrayed	2.80 $\pm$ 0.05	2.77 $\pm$ 0.05
As a group we found other information to overcome obstacles**	2.79 $\pm$ 0.05	3.01 $\pm$ 0.05
I reflected on the strategies I used during game play*	2.72 $\pm$ 0.05	2.89 $\pm$ 0.04
This game provided me with different information to overcome obstacles	2.67 $\pm$ 0.05	2.80 $\pm$ 0.05
I identified a well-developed story during game play*	2.65 $\pm$ 0.05	2.81 $\pm$ 0.05
I reflected on the content I used during game play*	2.63 $\pm$ 0.05	2.75 $\pm$ 0.04
I easily relate to the way in which the game was portrayed**	2.63 $\pm$ 0.05	2.84 $\pm$ 0.05

**Source:** Based on the results of the survey carried out by the authors.

**Notes:** \*Mann-Whitney *U* *p* < 0.05,

\*\*Mann-Whitney *U* *p* < 0.001.

use of individual strategies to solve the puzzles (Table 6). However, women scored higher than men on the question, “The game presented no real challenge.” The statements in the questionnaire that scored the highest in both the groups related to the challenges that required their full attention, and that they enjoyed solving the challenges.

### Game Gender Representation

Both women and men agreed to all the items related to the portrayal of gender in the games, with the scores ranging from 2.81 to 2.13 (Table 7).

**Table 6.** Mean Ratings of Game Challenges Attributes by Women and Men

Statement	Women ( <i>n</i> = 230)	Men ( <i>n</i> = 320)
	Mean $\pm$ SE	Mean $\pm$ SE
The game challenges required my full attention	3.18 $\pm$ 0.05	3.22 $\pm$ 0.05
I felt great after solving the game challenges	2.95 $\pm$ 0.06	2.99 $\pm$ 0.05
I forgot about my worries while solving game challenges	2.89 $\pm$ 0.06	2.94 $\pm$ 0.05
I forgot about time while playing the game*	2.83 $\pm$ 0.06	3.01 $\pm$ 0.05
I find the game challenges complex	2.68 $\pm$ 0.06	2.73 $\pm$ 0.05
The game allowed me to use my own strategies to solve game challenges*	2.63 $\pm$ 0.05	2.79 $\pm$ 0.05
The game provided relevant feedback to guide me in solving game challenges	2.63 $\pm$ 0.06	2.76 $\pm$ 0.05
I find the game challenges difficult to solve	2.55 $\pm$ 0.06	2.56 $\pm$ 0.05
I could identify the purpose of each game challenge	2.54 $\pm$ 0.06	2.66 $\pm$ 0.05
The game presented no real challenge*	2.19 $\pm$ 0.06	2.02 $\pm$ 0.05

**Source:** Based on the results of the survey carried out by the authors.

**Note:** \*Mann-Whitney U  $p < 0.05$ .

**Table 7.** Mean Ratings of Game Gender Attributes by Women and Men

Statement	Women ( <i>n</i> = 230)	Men ( <i>n</i> = 320)
	Mean $\pm$ SE	Mean $\pm$ SE
Men are portrayed in a dignified way in the game	2.75 $\pm$ 0.05	2.81 $\pm$ 0.05
Men are portrayed in an authoritarian way in the game	2.67 $\pm$ 0.05	2.70 $\pm$ 0.05
Men are portrayed in a sensitive way in the game	2.66 $\pm$ 0.05	2.70 $\pm$ 0.05
Women are portrayed in a dignified way in the game	2.65 $\pm$ 0.06	2.58 $\pm$ 0.05
I identify with the male role models in the game	2.54 $\pm$ 0.06	2.69 $\pm$ 0.05
Women are portrayed in a sensitive way in the game	2.51 $\pm$ 0.05	2.42 $\pm$ 0.05
I identify with the female role models in the game	2.51 $\pm$ 0.05	2.37 $\pm$ 0.05
Women are portrayed in an authoritarian way in the game*	2.41 $\pm$ 0.05	2.27 $\pm$ 0.05
Men are portrayed in a degrading way in the game	2.33 $\pm$ 0.05	2.24 $\pm$ 0.05
Women are portrayed in a degrading way in the game*	2.32 $\pm$ 0.06	2.13 $\pm$ 0.04

**Source:** Based on the results of the survey carried out by the authors.

**Note:** \*Mann-Whitney U  $p < 0.05$ .

Women, however, differed in their responses to statements related to the portrayal of women as authoritarian ( $2.41 \pm 0.05$  versus  $2.27 \pm 0.05$ ) and/or degrading ( $2.32 \pm 0.06$  versus  $2.13 \pm 0.04$ ). However, both groups identified with the female role models in the games.

### **Competition**

Both women and men rated their competitiveness similarly ( $2.95 \pm 0.02$  and  $2.93 \pm 0.03$ , respectively) but interestingly, the women thought of themselves as slightly more competitive than men. However, there was no significant difference in the way the players rated their competitiveness (Mann-Whitney U  $p = 0.66$ ).

### **Conclusion**

The main objective of this study was to support the inclusive use of computer video games in the classroom by investigating any probable gender bias in the way the young South Africans play and evaluate computer video games. Much of the research on how women and men play computer video games subscribes to the twentieth-century sex role theory where people are divided into two categories based on their biological sex. But Butler (1988) suggested that gender acts are performative and gender identity based on biology acts as a regulatory mechanism. Similarly, Connell (1995) argued that gender is constructed through social practices maintained through hegemonic performance. In South Africa, the maintenance of the heteronormative society is through the hypersexual and patriarchal ruling masculinity (Bhana et al., 2007; McFadden, 2003; Morrell, 1998; Ratele, 2008).

It has also been hypothesized that men and women appear to prefer different kinds of games and approach game play from different perspectives (Bonanno & Kommers, 2005, 2008; Cherney & London, 2006; Heeter et al., 2009; Karakus et al., 2008; Ogletree & Drake, 2007). However, results obtained from this study found that inexperienced South African game players preferred similar kinds of computer video games. Both women and men selected Need for Speed and Tiger Woods

as their top-rated games. But men rated the hyper-masculine game Unreal Tournament significantly higher than the women, which supports the idea that socialization enforces masculine hegemonic practices as suggested by Donaldson (1993). Thus, the performative acts by women included their acceptance of, and identification with, the heterosexual normative behavioral attitudes depicted in Need for Speed and rejection of overt masculinity and violence that is part of Unreal Tournament. With respect to the men, their performativity supports the construct of a woman as an object, as in Need for Speed, and accepts hyper-masculinity and violence, which is part of Unreal Tournament.

The educational game  $\gamma$ Khozi was disliked by both women and men, as were Warcraft III and Myst IV. These games require players to solve complex problems and negotiate nonlinear narratives. Young South Africans surveyed in this study preferred action and sports games to cognitively challenging games.

These results support the idea that attitudes to games are based on factors other than masculinity and gender (Carr, 2005) and may be related to experience (Kiesler et al., 1985).

This study also showed that both women and men preferred to rate challenging games poorly, thereby explaining away their poor performance.

Both women and men rated game control, user interface, graphics, and sound in a similar manner. Game music and sound effects were more important than game graphics but women rated the graphics higher than the men. With respect to games as authentic learning activities, women were less positive than the men, but rated reflection and game aesthetics higher. This supports the work of Vernon-Gerstenfeld (1989) who reported that women were slightly more reflective in their learning style than men. Women in this study appreciated aesthetic game elements differently from men. While the men rated game challenges more positively than women, both the genders rated their competitiveness in a similar way. These findings support Jenson and de Castell (2008) who posited that girls are just as competitive as boys, and Gneezy, Niederle, and Rustichini (2003) who found that woman performed less well when they were competing against men.

Implications of these findings on the design of teaching and learning include issues related to single-sex versus coeducation debate, the general dislike of cognitively challenging games, and the types of games appropriate for the learning environment. Single-sex schooling benefited



academic achievements of both girls and boys but the benefit was more pronounced for girls than for boys (Mael, 1998). Piatt (2008) argued that without sufficient empirical justification for single-sex education and proof that segregated classrooms do no harm, resources should be better used to improve the “educational system where boys and girls can learn together” (p. 561). Because of subordination of girls/women in compulsory heterosexual systems, gender power relations do affect the performance of girls/women in mixed groups. Gneezy, Niederle, and Rustichini (2003) found that in competitive same-sex/gender environments women performed well, but their performance fell in mixed-sex/gender environments where they felt less capable than their male competitors. Therefore, in mixed-sex/gender groups women tend not to compete with men. Consequently, special attention needs to be taken in mixed-gender environments to minimize competition between males and females during game play. Though gender/sex plays an important role in performance, ways to address it are not well documented. However, gender issues could be dealt with in a classroom when the type of game and the embedded inherent heteronormative discourse are not the prime objects of learning, but only act as a mediated artifact (Wertsch, 2007) to investigate other issues such as violence, globalization, abuse, or cultural identities.

The study shows that the differences in computer video game play and evaluation by young South African women and men are not because of their different sex (the male–female binary), but due to their gender performative acts as suggested by Butler (1988). Young women and men selected *Need for Speed* (with its stereotypical depiction of women characters) and *Tiger Woods* (where men and women never compete against each other) as their top-rated games. Participants of both the genders were equally vehement in their dislike of games they found cognitively difficult, and identified with the way in which women were represented, mostly as vixens, in games. Men, in addition, rated *Unreal Tournament*, a hyper-masculine and violent game, significantly higher than the women. Most of the participants had little previous exposure to computer video games and were not part of the “game culture” popular in other parts of the world. Women and men in this study, therefore, performed their gendered stereotypes based on prior social experiences in and expectations of the hypersexual, patriarchal, and heteronormative masculine South African society. While the use of a quantitative survey

instrument provided insights into how young South Africans play and evaluate games, further qualitative research is required to fully investigate the relationship between gender performativity and the play and evaluation of computer video games.

## Acknowledgments

Special thanks to Elzette Fritz, Duan van der Westhuizen, and Elizabeth Walton for their critical comments, and to the South African Department of Science and Culture for funding this study.

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