Gender Differences within Online Gaming: A Systematic Scoping Review Protocol

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Abstract - Aims: The aim of this protocol is to outline the design of a systematic scoping review that will identify, describe, and categorize gender differences in terms of gamer characteristics, online experiences and behaviors, and offline effects on the gamer. Settings and Design: This review will be guided by the York framework for scoping reviews outlined by Arksey and O’Malley, 2005. Methods and Design: A systematic search of eight peer-reviewed databases (Scopus, Web of Science, Social Science Abstracts, PsychInfo, CINAHL, Medline, Embase, and International Bibliography of Social Sciences) and four grey-literature databases (Open Grey Repository, Health Canada, Conference Papers Index, and Dissertation Abstracts International) was completed. Hand searches of key journals and reference lists of relevant studies were also completed. Two independent reviewers screened the titles and abstracts using a set of inclusion and exclusion criteria. Full texts were then screened to determine fulfillment of the inclusion and exclusion criteria. The results will be charted and presented thematically. Discussion: This review will use a broad range of search terms, sources, and dates in order to capture a large spectrum of literature relating gender differences in online gaming. This study will raise awareness of the importance of the need to examine gender issues concerning online gaming. It will provide a foundation for members of academia and the gaming industry to identify the themes of research that have emerged when examining gender differences since near the beginning of online gaming. Recommendations for future research were provided.

Keywords - Gender differences, Online gaming, Systematic scoping review, Protocol, Male, Female

1. Introduction

The Internet revolutionized the computer game industry. Players who once played independently or against artificial intelligence were able to challenge or play cooperatively with other players from around the world. Currently, several countries reported over 30% of their population play online games (World Internet Project, 2012). The term "gamer" was born—used to describe people who frequently played computer games.

Gamers had predominately been males, however, there has been a steady growth in the number of female gamers (Bryce & Rutter, 2003; Cole & Griffiths, 2007). Although it is recognized that the demographic of the online world is changing, there has been no consensus on the characteristics of these gamers in terms of gender differences in how frequently they are gaming, what types of games they are playing online, and their personality traits.

Gender differences in terms of gamer characteristics are not the only issues that are worth addressing. Females, being a minority group within the online gaming community, are harassed and denounced by the dominant cohort of male gamers (Salter & Blodgett, 2012; Tan, 2011). As a result, females who played computer games have significantly lower self-worth compared to males who played computer games (Funk & Buchman, 1996). Attention also needs to be paid to gender differences in terms of both online experiences and behaviours, as well as offline effects on the gamer.

While, many past studies examined gender and online gaming, gender was typically not part of the main focus of the study (Bowman, Schultheiss, & Schumann, 2012; Chang, Lee, & Kim, 2006; Griffiths, Davies, & Chappell, 2004). There was a lack of focus and consolidation of literature in the area of gender differences and online gaming. It is difficult to move forward in the advancement of future studies without appropriately capturing the scope of the literature in establishing what has already been done. The advancement of studies can be propelled by the synthesis of exiting work. This protocol can serve as an example of the synthesis of literature in gender and online gaming. Future directions in research synthesis in this area of work are in the discussion section of this paper. By systematically searching the literature and thematically reporting the results, we can gain a better understanding of gender differences in online gaming and guide the direction of future research.

For the proposed systematic scoping review, we are referring to 'gender' as the biological aspect of being female or male, not sexuality or socially constructed genders. We are studying a person’s gender in the offline world, not their...
online avatars’ genders. However, this includes studying how females and males in the offline world manipulate their online avatars.

The purpose of the systematic scoping review is to identify, describe, and categorize gender differences in terms of gamer characteristics, online experiences and behaviours, and offline effects on the gamer. To the best of the authors’ knowledge, there has been no previous systematic reviews of this nature. Therefore, a scoping study is appropriate when the size and extent of the available literature is unknown (Grant & Booth, 2009) and when research has not been systematically explored in a particular field. Systematically scoping the size and extent of available literature is an important step for this topic with emerging interest (Levac et al, 2010).

2. Settings and Design

The York framework outlined by Arksey and O’Malley, 2005 was used to guide this protocol. The five stages within the York framework include: identifying the research question; identifying relevant studies; study selection; charting the data; and collating, summarizing, and reporting the results. The optional sixth stage—consultation—will also be used for this study. The York framework is an iterative process, therefore, what was initially planned could have been revised as the study progresses and new discussions arise (Levac, Colquhoun, O’Brien, 2010). This scoping study will cover literature in both peer-reviewed journals and in grey literature.

3. Methods and Design

3.1. Stage 1: Identifying the research question

After a preliminary search within the literature, the following research question was formulated: What gender differences exist among online gamers in terms of gamer characteristics, online experiences and behaviours, and offline effects on the gamer? Ovid databases, Web of Science, Scopus, and the Cochrane database were searched to ensure no previous review had been published on this topic.

3.2. Stage 2: Identifying relevant studies

Three reference specialists were consulted regarding the database selection and search strategy for this review. Previously published reviews on online gaming were also used as guidance (Kuss & Griffiths, 2012; Meredith, Hussain, & Griffiths, 2009; Sublette & Mullan, 2012). It was agreed that keyword searches were more appropriate for some databases rather than using subject headings in order to generate a reasonable number of relevant articles as the topic of online gaming is relatively new.

The strategies employed by this study included searching electronic peer-reviewed databases, electronic grey literature databases, hand searching key journals, and hand searching relevant reference lists. Literature created prior to the year 2000 and literature that was not in English were not included in this study. Please note, there were no key journals that were not indexed in one of the selected databases below after hand-searching for key journals.

The following peer-reviewed databases were searched for relevant articles:

1. Scopus
2. Web of Science
3. Social Science Abstracts
4. PsychINFO (1805 to June Week 1, 2013)
5. CINAHL (1981 to Present)
6. MEDLINE (1946 to June Week 4 2013)
7. Embase (1980 to 2013 Week 26)
8. International Bibliography of Social Sciences

Please see Appendix A for the search strategy associated with each peer-reviewed database.

The grey literature was also searched for relevant articles in the following databases on July 4, 2013:

1. Open Grey Repository
2. Health Canada
3. Conference Papers Index
4. Dissertation Abstracts International

Please see Appendix B for the search strategy associated with each grey literature database.

3.3. Study selection

Studies that did not address our main research question were eliminated according to the following inclusion and exclusion criteria.

Inclusion Criteria:

- The source of publication is either peer-reviewed or grey literature
- Publications in the English language
- Publications were after the year 2000
- Studies that examine online games AND gender related topics
- Studies using primary data

Exclusion Criteria:

- Publications prior to the year 2000
- Publications related to gambling, and professional “e-sports”.
- Cybersex and sexuality
- Web-browser based games, cell phone games, tablet games
- Review papers and case studies
- Studies that focused on treatment of behavioural disorders
- Studies that examined online gaming used for other types of gain (i.e. education or financial).

The inclusion and exclusion criteria were modified after gaining more in depth familiarity with the literature available. It was determined that only literature that used primary data would be considered for this study to avoid duplication of results charted and summarized.

Two reviewers independently applied the inclusion and exclusion criteria to all of the citations found based on titles.
and abstracts. The full texts of eligible citations was then reviewed by the first author to determine final inclusion in the study.

3.4. Charting the data
The data retrieved from the articles selected were charted under the following headings:
- Author(s), year of publication, first author's location
- Location of the study
- Title
- Target population
- Number of participants
- Genre of online game
- Aims of the study
- Methodology/Design
- Results related to gender differences
  - Gamer characteristics; some examples are:
    - Time spent gaming
    - Family influences
    - Personality traits (i.e. self-esteem, life satisfaction, self-image)
  - Demographics
  - Motives for gaming
    - Online experiences and behaviours; some examples are:
      - Online sexism
      - Gaming loyalty
      - Gratifications
      - Gender swapping
    - Offline effects on the gamer; some examples are:
      - Negative effects of gaming (i.e. aggression, intention to act the game)
      - Enjoyment and predictors of enjoyment
  - Gender related conclusions/Implications
  - Gender related future directions

3.5. Collating, summarizing, and reporting the results
The presentation of the literature reviewed will be reported thematically in order to summarize the main areas of current research on gender and multiplayer online gaming. Strengths and gaps in the research will be identified, however there will be no attempt to critically analyze the "weight" of the evidence. Implications of the findings will be discussed within a broader context.

3.6. Consultation
The preliminary themes presented in stage 5 will be shared with stakeholders in efforts to increase rigour and facilitate knowledge transfer. Stakeholders will be contacted where the key points from the themes will be emailed to them for their review. The stakeholder's feedback and comments will provide additional insights that will be integrated into the final presentation of the themes.

Some key stakeholders for this scoping review are: academics in gender studies, academics in online gaming studies, gaming industry companies, and online gaming players.

Upon completion of this systematic scoping review, the authors plan to communicate results through presentations, research abstracts at conferences, and peer-reviewed journal publications.

4. Discussion
This study’s protocol intentionally used a broad range of search terms, a broad range of sources, and a broad range of dates in order to capture a large spectrum literature relating to gender differences in online gaming in terms of gamer characteristics, online experiences and behaviours, and offline effects on the gamer. Capturing a large spectrum of literature is especially important when no review had previously been completed in the area of gender and online gaming.

This study will raise awareness of the importance of the need to examine gender issues concerning online gaming. It will provide a foundation for members of academia and the gaming industry to look upon for themes of research that have emerged in gender differences dating from near the beginning of online gaming.

Future research should include systematic reviews on more specific aspects of gamer characteristics, online experiences and behaviours, and offline effects on the gamer related to online gaming. Focusing on specific genres of online games should also be considered for future reviews on gender and online gaming. For example, look for gender differences within the Massively Multiplayer Online Role-Playing Game genre. Future research should also include systematic reviews on different aspects of gender differences that was not addressed by this study, such as genetic/neurological differences. Examining sexuality from a socially constructed perspective, rather than an emphasis on biologically determined “male” and “female” genders would also be valuable in future research.

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References


Appendix A: Peer-reviewed Database Search Strategies

Database: Scopus

**Date Searched:** June 17, 2013

**Search Strategy:**

1. (("online game*" OR "internet game*"") AND (gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference*"))


3. AND (LIMIT-TO(LANGUAGE, "English"))

4. AND (LIMIT-TO(SRCTYPE, "J"))

5. AND (NOT gambl*)

Database: Web of Science

**Date Searched:** June 12, 2013

**Search Strategy:**

1. TS=(gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference")

2. AND TS=("online game*" OR "internet game*")

Database: Social Science Abstracts

**Date Searched:** June 17, 2013

**Search Strategy:**

1. online game* OR internet game*

2. gender bias OR gender gender differences OR gender discrimination OR gender identity

3. gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference*"

4. 2 or 3

5. 1 and 4

6. Limit by year 2000-2013

7. Limit by academic Journals

Database: PsychInfo (1806 to June Week 1, 2013)

**Date Searched:** June 3, 2013

**Search Strategy:**

1. exp Computer Games/

2. ("online game*" OR "internet game*").mp.

3. exp gender identity/

4. (gender* or girl* or female* or boy* or male* or man or men or women).mp.

5. 1 or 2

6. 3 or 4

7. 6 and 5

8. limit 7 to (full text and all journals and English language and English and (human or male or female or inpatient or outpatient) and yr="2000 -Current")

Database: CINAHL (1981 to Present)

**Date Searched:** June 3, 2013

**Search Strategy:**

1. (gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference") AND ("online game*" OR "internet gam*"")

2. Limiters - Published Date from: 20000101-20131231; English Language; Peer Reviewed; Publication Type: Journal Article; Language: English

Database: Medline (1946 to June Week 4 2013)

**Date Searched:** June 10, 2013

**Search Strategy:**

1. exp Gender Identity/

2. gender difference*.mp.

3. sex difference*.mp.

4. online gam*.mp.

5. internet gam*.mp.

6. (gender* or girl* or female* or boy* or male* or man or men or women or woman).mp.

7. 1 or 2 or 3 or 6

8. 4 or 5

9. 7 and 8

10. limit 9 to (English language and yr="2000 -Current" and English and (female or humans or male))

Database: Embase (1980 to 2013 Week 26)

**Date Searched:** July 4, 2013

**Search Strategy:**

1. "online gam*".mp.

2. internet gam*.mp.

3. exp gender/ or exp "gender and sex"/ or exp gender bias/ or exp gender identity/

4. (gender* or girl* or female* or boy* or male* or man or men or women or woman).mp.

5. 3 or 4

6. 1 or 2

7. 5 and 6

8. limit 7 to (English language and yr="2000 -Current")

9. limit 8 to (English language and English and yr="2000 -Current" and article)

Database: International Bibliography of Social Sciences

**Date Searched:** July 4, 2013
Search Strategy:
1. (("online gam*" OR "internet gam*") AND (gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference*"))
2. AND (schol(yes)
3. AND peer(yes)
4. AND rtype.exact("Review" OR "Journal Article")
5. AND la.exact("English")
6. AND stype.exact("Scholarly Journals")
7. AND pd(>20000101)

Appendix B - Grey Literature Database Search Strategies

Database: Open Grey Repository
Date Searched: July 4, 2013
Search Strategy:
1. (gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference*)
   AND ("online gam*" OR "internet gam*") NOT gambl*

Database: Health Canada

Date Searched: July 4, 2013
Search Strategy:
1. (gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference*")
   AND ("online gam*" OR "internet gam*") NOT gambl*

Database: Conference Papers Index
Date Searched: July 4, 2013
Search Strategy:
1. (gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference*")
   AND ("online gam*" OR "internet gam*") NOT gambl*
2. Limit: Date After January 01, 2000
3. Limit: Conferences; Conference Papers

Database: Dissertation Abstracts International (ProQuest)
Date Searched: July 4, 2013
Search Strategy:
1. (gender* OR girl* OR female* OR boy* OR male* OR man OR men OR women OR woman OR "sex difference*" OR "gender difference*")
   AND ("online gam*" OR "internet gam*") NOT gambl*
2. Limit: Date After December 31, 2000
3. Limit: Language-English