AN ANALYSIS OF GAME DEVELOPERS' ATTITUDES IN TURKEY REGARDING GENDER DIVERSITY IN GAME DEVELOPMENT WORKFORCE

Oyun Geliştirme İş Gücünde Cinsiyet Çeşitliliğine İlişkin Türkiye'deki Oyun Geliştiricilerinin Tutumlarının Analizi

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ABSTRACT

The purpose of this study is to investigate the opinions, initiative point of views and suggestions of game developers on gender diversity in game development workforce. Thirty eight (38) employees participated in this study from four different game companies that reside in Ankara. The results of the study reveal that the majority of respondents believe the current workforce is diverse regarding gender distribution and this has a positive effect on game production. In terms of women's problems in the workforce, most of the male respondents believe that females pay less attention to computer games whereas the majority of female respondents think that women do not have enough confidence to succeed in the game development industry. The male respondents also suggest a better promotion of the game development industry to women while the female respondents point out the necessity of drawing women's attention to playing computer games.

Key Words: Game developers, gender diversity, game companies, game industry

ÖZET

Bu çalışmanın amacı, oyun geliştiricilerin oyun geliştirme iş gücünde cinsiyet çeşitliliğine ilişkin görüşlerini, girişimci bakış açılarını ve önerilerini incelemektir. Bu çalışmaya Ankara'da yerleşik dört farklı oyun şirketinden otuz sekiz (38) çalışan katılmıştır. Araştırmanın sonuçları, ankete katılanların çoğunluğunun mevcut işgücünün cinsiyet dağılımı açısından çeşitli olduğuna inandığını ve bunun oyun üretimi üzerinde olumlu bir etkisi olduğunu ortaya koymaktadır. Kadınların işgücündeki sorunları açısından, erkeklerin çoğu, kadınların bilgisayar oyunlarına daha az ilgi gösterdiğine inanırken, kadınların çoğu, kadınların oyun geliştirme endüstrisinde başarılı olmak için yeterli güvene sahip olmadığını düşünüyor. Erkek katılımcılar ayrıca oyun geliştirme endüstrisinin kadınlara daha iyi tanıtılmasını önerirken, kadın katılımcılar kadınların dikkatini bilgisayar oyunlarına çekmenin gerekliliğine işaret ediyor.

Anahtar Kelimeler: Oyun geliştiriciler, cinsiyet çeşitliliği, oyun şirketleri, oyun endüstrisi

1. INTRODUCTION

The research studies in literature about gender diversity in computer games are mostly concerned with the diversity of game players and the representations of game characters. There are not many studies on gender diversity in the game development workforce and game developers' opinions about this subject. Character representations based on gender specific features in computer games have some effect on players' attention according to the study that was conducted across the United States regarding the representations of several demographic groups in video games such as gender, race and age groups (Williams, Martins, Consalvo & Ivory, 2009). The research showed that far fewer female characters were represented than male characters in video games with 85.23% male characters and 14.77% female characters. Whereas the ratio of female players to male players was 40:60 and the population distributions of males and females in the country were almost equal. The Entertainment Software Association (ESA) has prepared reports in recent years regarding the facts of the computer and video game industry and their final report includes information including who plays games, who buys games and what kind of games are played the most (ESA, 2019). This recent report shows that 58 percent of gamers are male and 42 percent of them are female. It shows

that if the minor increase in the percentage of female players is ignored, the ratios of male players and female players have not changed much throughout recent years. Williams (2006, as cited in Williams et al., 2009) mentioned a vicious cycle in which games were developed to draw attention of males and to address their needs and interests. As a consequence, they are more likely to be game developers in the future. In a former research, Dill, Gentile, Richter and Dill (2005) found that male characters in computer games are in primary roles with 70 percent. Gourdin (2005, as cited in Williams et al., 2009) found that almost 90 percent of game developers are male. Thus, it can be seen that the gender ratio of game developers seems proportional to the gender representation ratio of characters in video games.

Player preferences are affected by character representations in computer games regarding gender specific features. In computer games female characters do not often hold primary roles and they are generally used for commercial purposes with a portrayal of sex appeal in game advertisements (Dickerman, Christensen & Kerl-McClain, 2008). Dietz (1998) conducted a research study on 33 popular video games and found that 41 percent of the games do not even include female characters and 28 percent of them use female characters as sex objects. Female players prefer to play with "feminine, sexy and strong characters" (Royse et al., 2007, as cited in Williams et al., 2009). Another research study found that female game characters with an appearance of strong sexuality appeal to female players just like male players (Hartmann & Klimmt2006). On the other hand, Malone (1981, as cited in Subrahmanyam & Greenfield, 1998) found that violent themes in video games are not appealing for females unlike males. Subrahmanyam and Greenfield (1998) stated that female players complain about the scarcity of female characters in video games and the existence of male-alike female characters with violent characteristics such as the Tomb Raider character. In terms of the possible effects of gender differences on players' aptitudes, play style and preferences in video games, Noble et al. (2003) stated that females are more socially and emotionally sensitive to even symbolic representations and less accustomed to "rough-and-tumble" games than males (p. 10). Therefore, it is clear that males and females mostly have different criteria while selecting video game types regarding both the theme of the play and the characteristic roles that they prefer to be engaged with during the play activity.

The most comprehensive research about game developers' demographics and diversity was conducted by the international game developers association (IGDA, 2016) and the main purpose of the study was to reveal the basic question 'who makes games'. The results of the study revealed the frequencies of game developers in terms of their age, gender, ethnicity, work position, education level and work experience. According to the demographic results, 88.5 percent of game developers were male and 11.5 percent of them were female. The majority of female game developers were found to be working in the positions of human resources, writing and sales whereas male game developers dominated more technical positions such as programming and visual arts. This difference in job positions was attributed to the lack of women's interests to computer science and engineering careers. In addition to the demographic results, the study also revealed the opinions of game developers towards the diversity of game development workforce in terms of age, gender and ethnicity. Also, women's opinions showed that in general they strongly agreed with the diversity in game development workforce will have positive effects while designing and developing games, it was crucial for the future of the game development industry.

The Entertainment and Leisure Software Publishers Association (ELSPA) conducted research in the United Kingdom about the place of women in computer game industry both as consumers and workers (ELSPA, 2004). The results of this report showed that the ratio of female players in the United Kingdom was 27.2% and it was a relatively low percentage compared to international results. On the other hand, the ratio of female employees in the game industry was only 16%. It was stated in the report that the low ratio of female employees was not exclusive to game industry but audio-visual industries in general had a lower rate of female employees compared to other industries in the United Kingdom. In terms of job titles, the report showed that majority of female game developers in the United Kingdom work in sales and marketing positions. Also, it was stated in the report that game companies in the United Kingdom started to recruit more women in order to produce more gender-balanced games in future. These initiatives of game companies show that they are aware of the necessity of diverse workforce in order to address a broader range of consumers.

The literature and research studies regarding gender diversity in computer games reveal that the rate of female workforce in game development industry is relatively lower compared to other industries and the necessity of initiative opinions is apparent in terms of addressing broader audience and producing more

gender-balanced games. Regarding this issue, the opinions and experiences of the employees in the game development industry would be valuable and the purpose of this study is to analyze game developers' attitudes, opinions and initiative thoughts with regard to gender diversity in game development workforce. The following research questions will be investigated through this study:

1- What are the opinions of game developers regarding gender diversity in the game development workforce?

2- What are the attitudes and level of support of game developers towards initiative ideas concerning gender diversity in the game development workforce?

3- What are the opinions of game developers regarding the problems of women in the game development workforce?

4- What are the opinions of game developers about the necessary steps to increase in the number of women developers in the game development workforce? (Metin içi Times New Roma yazı stili, 11 punto, aralık önce ve sonra 6 nk, Satır aralığı tek)

1.1. Significance of the Study

Although there are lots of research in literature in terms of the effect of gender factor in computer games, the studies conducted in Turkey in this regard are not sufficient. The studies being conducted both in Turkey and in US regarding computer use and gaming activity among teenagers revealed that males and females tend to play specific video game genres over others and the results showed that video game genre preference is similar in both countries (Ogan et al., 2009). This study also discussed that regardless of the limited opportunities of females in Turkey to get engaged with computers and the internet, females in both countries tended to get involved with computers much later than males and this situation resulted in less involvement of females in computer related fields such as game development field (Ogan et al., 2009). Therefore, this leads to the vicious cycle that is mentioned earlier in this paper (Williams, 2006, as cited in Williams et al., 2009) and females continually remain to be less represented in video games than males. This cycle remains as a great problem for both female game players who are in need of specific characteristic roles and also for game development companies which fail to address much more clients' needs adn desires to expand their audience. Despite the less developed nature of game development field in Turkey compared to many other developed countries, it would be worthwhile to analyze the attitudes of game development companies in Turkey with the aim of pointing out the necessary steps to improve the current situation.
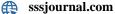
2. METHODOLOGY

In this study, the instrument for data collection is a questionnaire which includes a total of fourteen questions. The questionnaire was prepared by adjusting IGDA (2016) survey, which was referring to diversity in broader terms than gender, and some of the questions related to subjects other than gender diversity are omitted. Among the questions, eight of them are related to game development workforce demographics, two of them are yes-no questions, two of them are Likert-type questions and the last two of them are open-ended questions. The questions other than demographics questions investigate whether game developers have positive opinions regarding gender differences in game development workforce, what their attitudes are towards gender diversity initiatives and what their suggestions are about women's problems and their less involvement in the game development workforce.

The data collection procedure was conducted by visiting four game companies that reside in Technocity-METU campus in Ankara and distributing a total of 43 hard-copy questionnaires to company workers. The questionnaires were managed by the researcher himself and every participant was asked to answer all of the questions. Five of the questionnaires were excluded from data analysis process due to unanswered items.

The data analysis process was conducted by calculating frequencies of participant responses for the first twelve questions. The last two open-ended questions were processed by content analysis. The answers of these questions were analyzed and similar responses were marked as a common code. Each occurrence of the codes was counted in order to obtain a frequency result. Some open-ended questions remained unanswered and for those questions the number of responses will be provided.

3. RESULTS

In this study, a total of 43 respondents have participated from four different game companies that reside in Technocity-METU campus in Ankara. Among the questionnaires 38 of them were found to be appropriate for data analysis since five of them included several unanswered questions or answers with unreliable information. Seven of the participants were female (18.4%) and 31 of them were male (81.6%). The average age of the respondents was 27.5 and in average they had 2.8 years of experience in game development industry. The male participants had longer experience than female participants with an average of 3.1 years and 1.8 years, respectively. In terms of game play hours, 65.8% of participants (20 males and 5 females) reported 1-5 hours of game play per week. 13.2% of them (3 males and 2 females) spent 5-10 hours for games per week and 21.1% of them (8 males) spared more than 10 hours of their time for games per week. It was observed that both the male and female respondents spared up to 10 hours of their time per week for computer games but the females did not spend more than 10 hours of their time for playing games per week.

The majority of the respondents graduated from a college/university with 81.6% (24 males and 7 females); 15.6% of them (6 males) had a master's degree and only 1 male respondent graduated from high school. Regarding received education degrees, 63.2% of participants (18 males and 6 females) reported a degree of technical subject area; 28.9% (10 males and 1 female) of them received a non-technical education and 5.3% (2 males) of respondents received a directly game-related education.

The respondents were asked to specify their primary position in their company. Table 1 shows the percentage of each position together with the frequency of males and females for each position.

Table 1. Work Positions

Work Position	Males (%)	Females (%)	Total Percentage (%)
Audio	6.5	14.3	7.9
Management	9.7	14.3	10.5
Game Design	16.1	-	13.2
Production	3.2	-	2.6
Programming	29	42.9	31.6
Scenario Writing	6.5	-	5.3
Graphics	25.8	28.6	26.3
Other	3.2	-	2.6

The majority of the males worked in programming (29%) and graphics (25.8%) positions and this shows their tendencies to technical areas. Interestingly, female respondents also reported high frequencies for these two technical areas with 42.9% for programming and 28.6% for graphics positions and this distribution was probably due to the high rate of technical degrees among female respondents (85.7%).

The respondents were also asked to share their opinions regarding gender diversity in game development diversity. As seen in Table 2, all of the respondents agreed or strongly agreed that the game development workforce is gender diverse. On the other hand, some respondents strongly disagreed or stayed neutral regarding their employers' attention to gender diversity in their companies. The majority of respondents agreed or strongly agreed that gender diversity has a positive impact on the games produced (86.8%) and their current project teams should include more diversity in future (73.6%). Despite some minor counter arguments, most of the respondents (84.2%) believed that gender diversity in workforce is important for future success of the game development industry.

Table 2. Opinions on Gender Diversity

Statement	Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The game industry workforce is gender diverse	Male	-	-	-	48.4%	51.6%
	Female	-	-	-	57.1%	42.9%
Gender diversity is important to my employer	Male	3.2%	-	25.8%	35.5%	35.5%
	Female	14.3%	-	14.3%	14.3%	57.1%
A gender diverse workforce has a positive impact on the games produced	Male	-	6.5%	3.2%	48.4%	41.9%
	Female	14.3%	-	14.3%	28.6%	42.9%
My future project/team needs to have more diversity	Male	-	-	22.6%	35.5%	41.9%
	Female	14.3%	-	28.6%	42.9%	14.3%
Gender diversity in workforce is important to the future success of the game industry.	Male	-	6.5%	6.5%	35.5%	51.6%
	Female	14.3%	14.3%	-	28.6%	42.3%

The participants were asked to specify their support level about the initiative ideas regarding gender diversity in the game development workforce. Table 3 shows the percentages of both gender groups according to their support level. It was observed that only 35.5% of the male respondents were eager to attend a workshop/conference related to gender diversity among game developers whereas the percentage of the female respondents who were eager to do so was 71.5%. It was also observed that most of the respondents were willing to participate in a dialogue regarding gender diversity at their company despite a few negative and neutral views. Also, the majority of the participants agreed (34.2%) or strongly agreed (50%) that more research should be conducted on gender diversity regarding gamers.

Table 3. Initiatives on Gender Diversity

Statement	Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would attend a game developer gender diversity workshop/conference	Male	19.4%	22.6%	22.6%	29%	6.5%
	Female	-	-	28.6%	42.9%	28.6%
I would participate in a dialogue on gender diversity at my company	Male	-	-	19.4%	51.6%	29%
	Female	-	14.3%	14.3%	42.9%	28.6%
More research on CONSUMER/GAMER gender diversity would be valuable	Male	3.2%	6.5%	6.5%	54.8%	29%
	Female	-	14.3%	14.3%	28.6%	42.9%

The respondents were asked to answer two open-ended questions. Received answers were marked into seven codes for each question according to the commonality of the received responses. The first question asked respondents to specify their opinion regarding women's problems in the game development workforce. A total of 18 respondents (13 males and 5 females) answered this question and as seen in Table 4, 30.8% of male respondents attributed the problems of women to their lack of interest to games, and on the contrary, no female respondent gave such an answer. Instead, the majority of female respondents (%60) stated that lack of confidence was the problem of women in the game development workforce. The recond question was asked to receive suggestions to increase the number of women game developers in the industry. In total, 17 respondents (13 males and 4 females) answered the question. Table 5 shows that 35.3% of male respondents suggested that the game industry should be promoted to women in order to receive their attention. Moreover, 17.6% of them believed that when educational opportunities are provided to women, they are likely to be a part of the gaming industry. Half of the female respondents thought that the attention of women should be drawn to computer games. In other words, they believed that it is important to be a game player in order to be interested in game development.

Table 4. Problems of Women in Game Development Workforce

Coded Problem	Males (%)	Females (%)	Total Percentage (%)
Long work hours	7.7	-	5.6
Non-technical career	15.4	-	11.1
Minority in workforce	23.1	20	22.2
Lack of game interest	30.8	-	22.2
Lack of education	7.7	-	5.6
Lack of confidence	7.7	60	22.2
Lack of patience	7.7	20	11.1

Table 5. Suggestions for Increasing the Number of Female Game Developers

Coded Suggestion	Males (%)	Females (%)	Total Percentage (%)
Increase educational opportunity	17.6	25	19
Increase women attention to games	11.8	50	19
Organize conference/workshop	11.8	25	14.3
Increase women confidence	11.8	-	9.5
Increase games for women	5.9	-	4.8
Increase industry promotion	35.3	-	28.6
Increase women leadership	5.9	-	4.8

4. DISCUSSION AND CONCLUSION

The purpose of this study was to examine the opinions, initiative point of views and suggestions of game developers on gender diversity in the game development workforce. The results of the study revealed that the majority of respondents believed the current workforce is diverse regarding gender and this has a positive effect on production. According to IGDA results, it was found that women in general believed that diversity is important while developing games, they were eager to have more diversity in future project

teams, and they believed that diversity is crucial regarding the future of the game development industry (2016). The findings of the current study support IGDA results in this regard and only a minority of female respondents declared otherwise.

In terms of women's problems in the workforce, most of the male respondents believed that females pay less attention to computer games whereas the majority of female respondents thought that women do not have enough confidence to succeed in game development industry. The male respondents also suggested better promotion of the game development industry towards women, and the female respondents pointed out the necessity of drawing women's attention to play computer games. According to a question in the interview that was conducted by Haines (2004) with women in terms of how to encourage women to join the gaming industry, one of the frequent suggestions was to make the industry more visible to them. Interestingly, in the current study, the male respondents' frequent suggestions of promoting the industry to women support the finding of the aforementioned study. According to another item in the interview regarding what would women want to work in gaming industry, Haines (2004) found that women expected better career opportunities, mentoring and support. In the current study, the female respondents' opinions about the lack of confidence in women partially supported this finding since women might overcome the problem of confidence with adequate mentoring and support.

The opinions and suggestions of the game developers on gender diversity are crucial since they are the ones who are experienced what people like and they can shape the future of game characteristics to appeal to more audience regardless of their gender. Further research on how game developers design games in terms of gender representations of game characters would be valuable.

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