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Recent developments and technological advances have significantly impacted gaming in the areas of who plays games and where they play them. Firstly, the Internet and the emergence of online multi-players means that gamers do not need a gaming console but can play games through a PC, as well as allowing gamers to play against one another and collaborate in team games with players around the world. Secondly the emergence of wireless platforms, enables players to play games on mobile phones (smartphones) and other handheld gaming devices. As a major entertainment and leisure activity for adults and children globally, the computer games industry is an important industry in the contemporary media landscape. According to Galarneau (2014) the top 10 gaming trends are:

1. Women are playing more and more games, and so is the older generation.
2. Gaming families and friend networks are the norm.
3. Revenue from games and game context is up and on par with the movie industry.
4. Games are going more and more mobile.
5. Casual, casino, mobile and social games are becoming as popular as other PC and console games.
6. Free to play business models have redefined the marketplace.
7. Video game violence is more of a problem for the media than for gamers or their families.
8. Variety is the spice of life- there are over fourteen different genres of games to choose from.
9. Asia is still the hotbed for gaming- the gaming landscape in Asia is dominated by social games.
10. The only thing that is ever guaranteed is more change- many regions such as Africa, the Middle East, Central America and South Asia have limited online access to the Internet but more and more people in these geographical areas are getting online.

Many of these issues in the top ten trends are discussed within this book, however the list is worth mentioning as it reiterates the point that this is an important industry as discussed briefly in the preface. Gendered occupational segregation is an issue across the globe. Women are under-represented in a number of careers especially careers within the STEM (Science, Technology, Engineering and Mathematics careers). Throughout the chapters included within this book it is evident that women’s underrepresentation within...
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the computer games industry is a pertinent issue. As stated in the preface this book’s guiding message comes from the perspective that there is a need for women to be involved in the production of computer games and all forms of technology development, at all levels. When considering who develops and produces computer games as well as the content of games, one influences the other. In that, the content of games influences who is interested in playing computer games, which influences who desires to work in the industry, which in turn influences the content of the games, all based on gender assumptions (Prescott & Bogg, 2014). What is particularly encouraging about the chapters within this book is that the chapters included in this edition highlight the vast array of research that is being conducted which is focussing on the issue of underrepresentation of women in STEM subjects and particularly the computer games industry. What is of particular interest and particularly exciting is that research into women’s underrepresentation in the computer games industry is taking place across the globe including in Japan, Australia, the USA, UK and in Europe. As highlighted in the preface, there are three geographic gaming markets and game developing areas: North America, Europe and Japan, with distinct differences between the Western (American and Europe) and Eastern (Japanese) markets and developing strategies (Johns, 2006; Consalvo, 2006). Therefore this global view is important to highlight as this enables researchers to understand the similarities and differences that exist within this industry for female developers across the globe.

The chapters in this edition have been divided into three sections which perhaps leads us to consider three main areas for consideration when investigating the gender divide in the computer games and digital media industries. The first section considers education and gaming with research looking at how games can both reinforce and also challenge gender stereotypes in girls. It also considers the link between playing games and developing an interest in studying computer science, and games development, and research which investigates the experiences of females currently studying a computer games undergraduate degree and how their background and experiences on the course as well as their views of the games industry.

The chapters within section two are critical to this book as they give the women in the industry a voice and provide readers with an insight into their lived experiences. What is particularly interesting and a major contribution of this book is that it has chapters from women in different parts of the world. As acknowledged throughout this edition, women working in the computer games industry are an understudied, under researched area, resulting in a lack of knowledge about the experiences of females working within the industry. Section two adds to the literature in the area and adds to our understanding of women working in male dominated work environments and industries. The final section, section three, has four chapters which look at the future outlook for women within the industry and considers research which has looked at women in the STEM sector. These chapters provide readers with an understanding of the underrepresentation of women in the sector and how this sector may be beneficial to the gaming industry.

GUIDING MESSAGE OF THE RESEARCH

In this section of the conclusion we would like to consider the main findings and conclusions from each of the individual chapters included in this edition and how they add to the literature and our understanding of women’s underrepresentation in developing computer games and involvement within the industry. In chapter one King and Douai conclude from their historical look at games and games for girls as well as their in-depth study of Webkinz World that there is perhaps a complicated relationship between gender and gaming. They ar-
gue that on the one hand gendered stereotypes can be transcended by games and games can increase girls’ engagement and interest with technology. Conversely, games such as Webkinz World can also reinforce feminine stereotypes in girls. Through a look at the historical context of games, the authors also illustrate how games are cultural text and how through these cultural text, children learn social norms and establish identities through play. When discussing their findings in relation to the gender divide in computer games they recognize the improvements in the representation of females in computer games and importantly recognize that despite the female underrepresentation within the industry, the important work those female developers that have broken into this male domain and are working in the industry have made in order to ‘challenge[d] the industry’s stereotypical treatment of females’. This chapter highlights the importance of increasing female games into the overall gaming culture in order to challenge and change the demographics of the gaming market and games industry, increasing the diversity of those that make games and for whom.

In chapter two, Denner, Ortiz and Werner’s findings show that among student gamers who are taking an introductory computer programming class, there is great variation in how and why they game. Interestingly, their findings suggest that certain practices, motivations and types of gaming are associated with a greater interest in pursuing the study of computer science. The authors found a number of differences and similarities between the genders. For instance, despite previous research suggesting women play fewer games than men, many of the female participants in this study played as frequently as their male counterparts. However, findings revealed that females tended to be motivated by the challenge found in solving puzzle games, whereas men were motivated by the challenge in action games. Both genders were also motivated by story. Interestingly, the study found that many of the female participants hid their game play, viewing it as less socially acceptable for females to play. This is interesting as the study did not find frequency of play as an important predictor of interest in computer science, but rather the extent to which the participant identifies as a gamer.

Findings revealed that the females who played a wide range of game genres, enjoyed playing games for fun, relaxation and social interaction, were more likely to say they wanted to study computer science. Those that wanted to study computer science were also more likely to be interested in the structure and mechanics of the game rather than just playing the game and they were found to be less likely to only play casual games. This chapter enhances our understanding of the potential link in getting more females interested in studying computer science through playing computer games. Game play has often been associated with one potential avenue in increasing female participation in ICT (information, communication and technology) careers including the computer games industry; this chapter provides further insight into this potential link.

In chapter three, Elliot and Prescott found some interesting findings from their small sample of female gaming students. This chapter provides an interesting insight into the experiences of the females on the course, as well as their views of entering (or at least potentially entering) the male dominated computer games industry. The female students interviewed choose to study games because they enjoyed playing games. Despite all four participants experiencing the course positively, there was some apprehension expressed about going into the industry. Interestingly it seems that the male dominated working environment may be off-putting to women, even women studying and interested in going into this area of work. The main ‘off-putting’ themes to emerge were the long hours culture and potential sexism within the industry.

It is somewhat difficult to draw similarities between the three chapters within this section since although the focus is education the age of the participants in the chapters is quite different.
However from this educational section, despite the fact that the three chapters are investigating very different aspects of educational factors, it is apparent from all of these chapters that game play is important in developing a potential interest in computer games and developing the skills required.

In chapter four, author Pugh considered the gender breakdown of the industry by role from a review of previous research. The chapter examined the gender breakdown of each department, explored the relationship between STEM and the games industry. The chapter suggests more research is needed to uncover the reason for the underrepresentation of women in the industry especially in the areas of; lack of interest, work-family conflict, and the social stigmas of the industry.

Chapter five by Prescott and Bogg focuses on the experiences of women currently working in developmental roles within the games industry. From the interviews with seven female developers, the study finds a number of reoccurring issues relating to the working environment and working practices in the industry. In particular, work life balance issues and the long hours culture are viewed specifically as issues for women within the industry. Overt instances of discrimination and sexism experienced by some of the women in the study highlights the barriers women may face within the industry. ‘Tomboy’ was a word frequently used to describe women in the industry, as was having a thick skin and not being very feminine.

Despite the participants in this study all being in a developmental role within the industry, they did feel that women were more likely to work in non-developmental roles in areas traditionally viewed as female roles/jobs such as human resources, marketing and administration rather than in developmental roles. Even within the developmental roles there appears to be the view that women are more likely to work as artists and thus a more female role than in other more traditionally male roles within the industry such as coding, design and producing. Although this chapter highlights barriers women in the industry experience, it does also illustrate the many benefits the women gain from working in the industry. The benefits include the monetary gains and the fact that the women all enjoyed working in a challenging, creative and constantly developing industry. Many of the women in the study had worked in it for over a decade and viewed it as changing positively in part due to the increasing number of female gamers and more females entering the industry.

Chapter six by Fujihara investigates the under researched and relatively unknown, especially for Western audiences, viewpoint of Japanese female game developers and their experiences and career paths. This fascinating chapter highlights the issue faced by female game developers working in an industry quite separate from the Western computer games industry. The study of twenty-one one-to-one interviews with female game developers, who have worked in the industry for at least five years, provides a unique insight into their careers. The study found that past gamer experience had enabled the female participants to develop an interest and skills which led to their careers in the industry. The study aimed to understand the career progression of female game developers but found there was no typical career pattern but rather there appears to be various individual styles of career progression.

As with the study on UK game developers by Prescott and Bogg in this edition it was found that Japanese female game developers enjoy their jobs, while continuing to develop their skills and careers. Again, similar to UK findings, Fujihara found that the Japanese women do not conform to feminine stereotypes. The women in the study with children found work life balance an issue, with adaption needing to be made in their working life and environment, and there was also the rec-
ognition of the impact children may have on their career progression within the industry. Fujihara’s research provides a positive outlook for Japanese female game developers suggesting that ‘they have the ability to alter their work situation, and evaluate and manage it if needed’. As mentioned by Pugh, mentoring was again an important issue for the women in this study. Fujihara found that the women aimed to be role models and mentors in their workplace because there are so few female developers in the Japanese gaming industry.

Chapter seven is a study of Australian female game developers and women working in other digital media industries by Geneve. This chapter used the Acts of Agency theory as a way to understand female participation in this industry in Australia. According to Geneve the theory helps explain the stories of participation that women in the Australian industry have experienced. The chapter provides an insight into the Acts of Agency theory and also the experiences of women within the industries involved in the study. The study suggests that a complex interaction between an individual and their environment is at play, positing that both are an influence on an individual’s participation. This section provides women a voice from research with participants working in the games industry in the UK, USA, Japan and Australia. This research is vital for understanding the experiences of women in the industry. Although the chapters within this section all take a slightly different theoretical and/or methodological approach to the subject, it is apparent that many of the issues are similar across the countries. Indeed the underrepresentation of women within this industry is evident through the research studied and reported in these chapters.

The chapters within section three highlight how we can gain lessons and ideas from the established STEM sector. For instance chapter ten suggests taking advantage of the successful outreach programs and initiatives within the STEM sector to further develop the diversity and gender imbalance within the computer games industry. Chapter eight by Warmuth and Hanappi-Egger investigated through interviews with STEM academics how professionalization is constructed and negotiated. The study looked at how structures are created and how these structures impact peoples creativity and innovation. With good work life balance essential in cultivating creativity in employers. This chapter and other research on STEM academics could help further our understanding of gender in the games industry and academia. Chapter nine by Pugh focused on how lessons from research investigating the underrepresentation of women working in the STEM sector can be applied to both understanding the underrepresentation of women working in the computer games industry and how this understanding can potentially provide ways forward for the computer games industry. Pugh concludes that the games industry would benefit from looking at tactics from many disciplines that make up the games industry in order to find solutions. More female role models within the industry was highlighted as a specific factor that would attract and encourage more women into the industry.

Chapter ten by McGill, Decker and Settle considers the success and benefits of outreach programs in enhancing and increasing diversity within the STEM sector and consider how similar initiatives are the way forward in enhancing the diversity in the computer games industry. From their research they suggest that purposeful action is needed in order to change the gender imbalance within the games industry. The final chapter, chapter eleven by Prescott and Bogg uses the theoretical framework of SCCT (Social Cognitive Career Theory) to investigate the career influences and motivations of an international sample of female game workers. The study found that in line with theoretical expectations, a combination of external and internal factors can be used in models of career factors to predict women’s career development and aspirations.
THEMES AND COMMONALITIES FROM THE PROFILES

We thought it would be interesting and informative to collate some themes and commonalities from the profile insights included in the book. It was deemed informative to consider the views of the female (and one male) profiler included in this edition. The profiles inform the reader of the experiences and points of view of women working in the industry in a variety of roles and for differing lengths of time. The vast array of experiences is therefore deemed worthy of further consideration, pulling prominent themes from the profiles. Many of the themes within the profiles are discussed throughout the chapters of the book; in particular the issue of work life balance and the different skills women bring to the industry. The profiles also highlight that the women enjoy working in games, emphasizing and supporting a major premise of the book- that more women should be involved in the industry, especially in developmental roles.

The profiles cover 15 women from Sweden, Germany, US, Canada and the UK, and also includes a single male perspective of women working within games. The women are involved in varying capacities within the games industry e.g. game design, QA, production, art, code, lecturing, recruitment, sales, and span a wide range of experiences from entry level/graduate to Director. The approximate age rage of the profiles is from early 20s to mid 40s (although not all gave their age), and of the 15 women profiled only four highlighted they had children/family.

Starting a Career in the Games Industry

The majority of the women, especially the women with more years in the industry, ‘fell’ into the industry with no previous career aims of working in games.

‘My friend was a games artist at Psygnosis. I visited the studio with him and I saw a potential new creative job, in an exciting, fun and cutting edge industry where artists could possibly have a secure job with a salary, pension and even the much-fabled end-of-game bonuses. I wanted to be part of all of that. I met some of the women on my friend’s team and was unaware, still, that as women in games they were relatively rare’ (Jo Daly).

‘On a fall evening in 1989, after my weekly Dungeons and Dragons game had ended for the night, the players were packing up their dice and books when the guy who was the newest addition to the group approached me. “You know, my company has an opening for a writer,” he said, “and with all the writing you’ve been doing for this weekly game, I think you’d be a natural. Want me to take your resume in?” A week later I had my interview at Origin Systems, with Warren Specter. I had my offer later that day. So I gave my notice at my job with the American Diabetes Association and two weeks later I started as a “writer” on the Ultima games at Origin Systems’ (Sheri Graner Ray).

‘I’ve always loved games but feel like I kind of fell into the industry. I studied English Literature at university more through a love of the subject than any kind of career goal, and this lack of direction probably somewhat prepared me for the global recession which was in full swing when I graduated in 2009. I managed to talk my way into a temporary Christmas job at GAME on sheer nervous adrenaline, where they and I quickly discovered that I have no aptitude for or inclination towards trying to sell people products they aren’t already interested in. Once they realised this, my days were clearly numbered, and I moved into a job designing and maintaining a website for a small independent clothing company. Whilst the work was fun and rewarding I’ve never been particularly interested in fashion, and when a friend mentioned that a nearby games company was hiring testers
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it sounded too good an opportunity to pass up’ (Faye Windsor-Smith).

The women tended to play games, even if they did not play them so much as adults, most had played games as a child. However, as one female notes, as a child a career in games did not seem a viable one,

‘I grew up playing games from ‘Orc Attack’ on the Atari 600 in the early 80s, where loading games from the cassette deck took an age, to the handheld Donkey Kong on Nintendo Game and Watch following through to the Sega Mega Drive console at the turn of the ‘90s. Many hours were spent chasing rings in Sonic the Hedgehog or casting spells in Mickey Mouse World of Illusion. I spent so much time playing Sonic the Hedgehog trying to beat Dr Robotnik I used to catch rings in my sleep! Games were never a vocation I considered growing up, and I imagine that ultimately this was because I had no idea of how you would go about getting work in the industry’ (Julie McGurren).

The younger profilers tended to have a different approach and perspective to gaining a career in games, this is mainly due to the increase in games related degree programs available as a catalyst into the industry. For instance,

‘As I progressed through school and then sixth form, I prioritised Art and IT as subjects. The fine art course at my school focused on teaching traditional skills like painting and ceramics, but in my personal work I ventured more into digital art and got my first graphics tablet on my 16th birthday. When I reached the end of sixth form and started looking at universities, I thought more seriously about getting into games as a career. I was surprised to find that there were courses perfectly tailored to this and I applied to a few, but after attending various open days the one that really stood out was the Computer Games Design course at the University of Wales, Newport’ (Hannah Payne).

Shockingly, one of the female profilers experienced barriers in the form of the sexist attitude of a lecture when enquiring about games courses,

‘While in England, I decided I would like to stay and complete a degree there instead of going back to Sweden. I went to an open day at Staffordshire University thinking I would do CGI and Animatronics or Robotics. However, while talking to someone about the Robotics course and realising I found programming the most interesting, they kindly suggested I should go and check out the Games Programming or Software Engineering courses. So off I went to go to the Games Programming talk, where I was met by a lecturer (who later taught me), who immediately believed my boyfriend was the one interested in the course, and started talking to him. Once he realised it was me applying he said “This is a course with a lot of advanced maths and stuff, maybe you should check out Games Design downstairs”. Quite demoralised and shot down, I left and decided to go to the games design talk, which did absolutely nothing for me. I remember thinking “I don’t want to re-skin a bin lid to look like a pizza; I want to make it behave like a pizza”. So, partly because I wanted to prove that lecturer wrong, and partly because the advanced maths that he had mentioned excited me, I decided to apply for the Games Programming course at Staffordshire University’ (Anna Ljungberg).

Working in the Industry: Benefits and the Skills Women Bring

Although it appears that the women either fell into a career in games or went through a more structured and planned route through game courses, once in the industry the females all enjoy working in the industry. For instance one profiler although at the beginning of her career recognises the benefits of working in the industry,

‘I’m still at the start of my career, but it’s a career that is rewarding, both financially and emotionally. I work alongside like-minded people in a stimulating environment, and my work is something I truly feel passionate about. I love working as a games programmer, and firmly believe that
choosing a career in the games industry was the best decision that I could have made. I hope that I will be a good role model for others looking for a rewarding and challenging career in the games industry' (Elinor Townsend).

A number of profilers referenced that being a women is advantageous in trying to get a job in the games industry as their CV stands out,

‘When applying for roles in the games industry it may even be suggested that being female might be an advantage. In an endless sea of male applicants the occasional female is certainly noticeable and possibly even memorable. Some men that I have worked with in games have suggested they prefer having a mixed gender team to create a less testosterone filled working environment and add a little social balance and decorum. I have certainly noticed a little flurry of excitement amongst some of the male team members when it becomes known that a new woman is being interviewed or is starting work on a team’ (Jo Daly).

‘It was an interview at the Liverpool based Bizarre Creations in Feb 1999 that led me to my first job. I was aware of the company and their products as I had been playing their F1 games on the Sony PlayStation. I had a small portfolio of 3D work alongside my traditional artwork and knowledge of the built environment gained during my undergrad degree. At this point, a job within games as an artist was attainable, even with minimal 3D experience. Games courses were few and far between and most artists came into the industry via a variety of backgrounds some with no 2D or 3D skills just a strong traditional art portfolio that illustrated a creative ability. I do believe when my CV landed on the desk at Bizarre it probably attracted attention as I was female and very much a rarity in the late 90s, I like to think the BMX comment probably helped too! I was thrilled to be given the opportunity to join a successful team and my games career began as a 3D artist making content for Metropolis Street Racer (MSR) on the Sega Dreamcast’ (Julie McGurren).

Another theme mentioned was the different skills females bring to the industry and the games they make and how this is a benefit to the industry,

‘I don’t feel that being a woman in the games industry is a barrier to advancing my career; in fact I believe that it may well be an advantage as the industry becomes more accepting of females who are aiming to start a career in games. The studio I work for actively encourages and seeks out female employees, and aims to someday have a 50/50 split between men and women. Rivet believes that in order to make fun games that will appeal to all audiences, it’s important to reflect that demographic in the workplace’ (Carrie Warwick).

‘During my time at Bizarre I was heavily involved in the recruitment of artists and C.Vs were few and far between from female applicants. In my experience, introducing females into the workplace often changes the dynamic of a group; it introduces new ways of thinking and throws different opinions into the mix’ (Julie McGurren).

It was noted that females within the industry, whilst bringing a number of additional qualities to the industry, may feel they have to work harder in order to prove themselves,

‘I’ve actually found that women show more enthusiasm and ambition. They’re hungrier in the games industry, as if they have something to prove. They have all the talents of ‘the guys’ in the studio, but when the work needs to be done, they are not as easily distracted. So we cannot officially promote policies to simply ‘hire more women’, however what we can ask applicants is proof of proactivity, ambition, self-motivated projects etc. and I could probably suggest with confidence that the applicants coming out on top would be female, or at the very least an even split. Having a more balanced studio in terms of gender, I feel, brings a certain maturity to the group. I don’t necessarily mean this in terms of experience; I just feel that women tend to be more ‘professional’ when they need to be. This can be as simple as organising work load, taking notes in a meeting, making sure a discussion stays on
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topic etc. They still bring the passion, excitement and enthusiasm, but in my experience can control it methodically’ (Phil Goddard).

Whereas one profiler observed that women tend to climb the career ladder within games quicker than their male counterparts,

‘Of those women that had been employed at Bizarre, I would say generally they gravitated to the top of the pile and became leads and seniors more quickly than their male counterparts. I would also note that the same is also true within Codemasters with a number of the key art lead positions held by females during my time with the company’ (Julie McGurren).

The Issue of Work Life Balance and Having Children

As mentioned previously, a theme evident throughout many of the chapters within this book is the issue of work life balance. Not surprisingly, work life balance was a theme in a number of the profiles. Especially when considering children;

‘Working in the industry has been an overwhelmingly positive experience and I don’t think I’ll ever want to leave, although I’m worried that at a certain point in my life I’ll be seen as a liability for being of a “maternal” age. I hope that doesn’t restrict my career opportunities in the future’ (Faye Windsor-Smith).

One resolution of the difficulty in maintaining a work life balance by a number of the profilers was to continue their career in games through teaching games, rather than working directly in the industry,

‘I was also keen to see what job I could do that might improve my work/life balance. Games development does tend to involve very long working hours during crunch and few holidays and after many years of that lifestyle I was keen to see where else I might use my skills’ (Jo Daly).

‘I’ll be turning 40 this year and I can feel that the young start-up companies are weary of hiring a 40 year old mom because they wonder if I’m to be able to work the 60 hour work weeks like I did 10 years ago. As a veteran in the industry, my position translates to a high salary and with today’s current economy and fast paced consumer market it’s become more difficult for me to compete with all the young and eager new graduates. Production budgets are tight, team sizes are small and everyone is looking to make the next Angry Birds. Currently, I’m taking some time off from the industry and teaching at Vancouver Film School part time which is affording me the opportunity to spend more time with my family and allowing me to plan out the next stage of my career, while the industry reboots itself’ (Lindsey Williamson Christy).

‘After the last turn in my career I decided to take a break, not only for my career but more importantly for myself. My husband (an Ex-Disney, Ex-Gameloft, Ex-Nokia employee), had recently become an independent consultant, and we decided together that I should pursue something just for myself and it did not take me long to realize my “plan B”. I am currently about to start writing my PhD, which in Germany is quite a substantial project of at least 3 years duration with the aim of becoming a teacher in Games Studies (or worst case scenario become a consultant) one day. Although it’s early days with this project I have a passion for my PhD topic: Female careers in the gaming industry. My university background (Sociology, Media and cultural studies) is a great match for the kind of research I am aiming to do. I want to examine why there are so few women in games, how they feel about it and what games organisations have to say about this. Although only just starting to walk on this academic path I do enjoy it as I realize how important this topic is and how exciting times are for Game Studies are right now’ (Sabine Hahn).

One profiler recognised the difficulties of having children and working in the industry, but despite the difficulties felt that having children made her more creative and patient in the workplace,
‘I am now 29 years old and live in Woking, whilst working in London. I have a partner who also works in the games industry and we have a 1 year old son. This is one of the reasons I had to leave Headstrong once, and I stayed at home with my son for 5 months before I went back to work. My son now stays with a child-minder whilst I am at work. Working while having children makes a bit of a difference. I can’t always do overtime because I need to get back home to my son, and weekend work (which is quite rare anyway) is not an option. I also have to save my holidays in case he gets ill. One thing I have noticed, since having my son is that children make you even more creative. Children need entertainment or distractions and I have had to be quite creative with the things I have around me to entertain him. I have found this has actually made me even more creative at work where I tackle problems in ways that I wouldn’t have done before. I also feel that I have more patience now, both when it comes to dealing with issues and people’ (Joy Dey).

The Importance of Role Models and the Encouragement of Females into the Industry

We hope this book will provide encouragement of females and a more diverse workforce into the industry. Being role models and encouraging more females into the industry, another theme mentioned within a number of the chapters within this book, was also important to a number of the profilers,

‘I am a member of the Women in Games Jobs network, and have attended the yearly Women in Games conference twice, now. I don’t believe that women in this industry are any more special or need more attention than women in any other industry, or males for that matter, but I do think it is important to encourage diversity. The amount of women in the industry should be the amount of women wanting to get into the industry, which is quite significantly lower than the amount of men wanting to have a career in games. I am not part of the network because I feel the need to identify myself with other people in the same situation, but instead to encourage and be a role model to younger girls finding an interest in technology and especially games’ (Anna Ljungberg).

‘We visit schools and colleges to encourage new students to our courses. In some cases these are all girl schools. My experience so far has been that by the time they are leaving school, if students aren’t already bought in to the idea of a career in games, it’s probably already too late. We need to stimulate interest far earlier in their school subject choices. There is a current trend to encourage more girls to participate in STEM subjects. Hopefully this will result in us seeing more females on our games courses and in the industry itself. The recent huge rise of female gamers playing casual games may also have an impact. A large number of these gamers are mothers. If they can be encouraged to recognise themselves as gamers then there may be a chance that this will result in there being less of a ‘geeky boy’ image attached to the perception of a ‘gamer’. This may in turn encourage their daughters to see playing computer games as an acceptable pastime for girls and eventually bring more females into the industry itself’ (Jo Daly).

‘I never had a role model or someone I looked up to and wanted to become career wise, but I do believe the fact that my parents always encouraged me to do what I found interesting and did not push me into any field of study or activity, made the career choice a lot easier as I only had to decide what I wanted to do. Therefore, I do think it is important to give the same encouragement to young girls out there, who may not have the same courage and backing from their friends and family, and may require that extra push or piece of friendly advice to jump in there and follow their dreams’ (Anna Ljungberg).

Diversity and the Type of Game Made

The type of game made was viewed as possibly being influential in the diversity of the game making workforce involved,
‘The number of women working at Ninja Theory is greater compared to that at Bizarre Creations and a lot of other game studios, not just in the art department, but in the programming, production and design departments too. I believe that one reason for this could be due to the style of games that are made at Ninja Theory which are very creative and usually fantasy/story driven. Whilst studying for my master’s degree, I completed an assignment based on women in the games industry. I came across many theories as to the type of video games women prefer to play and why, many of which I thought to be totally untrue and outdated. One theory which I do believe that could be true on this subject is that in general, women prefer to play games which are story and character driven. These two features are quite prominent in recent Ninja Theory games. (This theory is not taking into account mobile gaming). If these types of games are more attractive to play, then they are also more attractive to make, encouraging more women to apply to the company’ (Dianne Botham).

‘The stereo types of Booth babes and hyper sexualized images of women never really played into my career at Radical, we just didn’t make those types of games. I can say now however that ageism is an issue for me and feels to be a limiting factor’ (Lindsey Williamson Christy).

‘Our next project, built on the same mechanics, will be built for an entirely different industry, which will be split equally between male and female users, and probably slightly younger. Our ultimate goal is to produce a variety of products for different demographics, thus leading us to have a diverse team within the studio’ (Phil Goddard).

‘In recent years, with the shift or evolution in games is becoming much more widespread i.e. mobile and tablet games, Nintendo Wii etc. there is reason to believe the audience will grow and evolve with it. Indeed we’re seeing more women playing games, younger children are exposed to games, games are used in education, and much more. The audience for video games is growing at a rapid rate, so why not the individuals who work in games?’ (Phil Goddard).

**Masculine/Tomboy Identity**

Many of the women mentioned having a masculine or tomboy image, again a theme highlighted in a number of chapters within the book.

‘Being a girl at a company focused on creating racing games is quite an experience, there are very few girls in the whole company, making the queues to the toilets very short, but the atmosphere very male dominated. During my whole life I have always had more male friends than female, mostly due to my interests being geared towards technology. Even at school I used to be out playing in the mud and climbing trees with mostly boys. Therefore I find the situation quite natural and I believe the people around me do too, as I have never felt like my gender has changed peoples opinion about me or that it has in any way affected my job’ (Anna Ljungberg).

‘I never really faced sexism in the games industry, possibly because I never allowed myself to be a victim. My team was always 95% male, I was always in a position of authority and I always felt respected. I’ve always been a tomboy, I swear like a trucker and used to be able to keep up with the boys, and so fitting in with the guys was never an issue for me’ (Lindsey Williamson Christy).

‘I have never thought about my gender being any kind of issue in this industry. I grew up with two brothers and my mum was a single mother so I spent a lot of time with my brothers. I used to go everywhere with them so I ended up doing a lot of boy stuff as a kid. We played football, video games and climbed anything that could be climbed. I have always found it easier to become friends with boys than with girls, mainly because of my interests. I was never into fashion, makeup and other, what were considered girl interests, and because of this I usually ended up being the
only girl in some classes in school that we were allowed to choose ourselves. The same was also true during my University studies. I have always felt like I was equal to the boys and there was no special treatment (either positive or negative) towards me because I am a girl’ (Joy Dey).

‘Although I’d received other offers as an intern, I chose Telecom One as they were the only company paying interns, but also because they were interesting to me as a technology corporation. The other internships would have been stereotypical female ‘Marketing Assistant’ roles, and I clearly could not see myself wearing nice dresses and lipstick when going into the office! I should add that since I can remember I spent most of my (spare) time with boys, doing boys’ activities and playing with boys’ toys – somehow I am more used to being the only girl around rather than working in a female world’ (Sabine Hahn).

Career Progression

Interestingly for one profiler in particular, career progression was not as important as being creative and making the games,

‘I am very critical of my own work and I am always striving to improve my skills and learn new and faster techniques. I do welcome promotion but only if I am still allowed to be creative on a daily basis. My career goals have not altered much during my time in the games industry. My main goal is to be creative and be the best artist that I can be’ (Dianne Botham).

For others, being female was not an issue for ‘getting on’ in the industry,

‘I have never felt my progression has been impeded because I am female, and I believe some of my progression has been enhanced because of it, for example my move into art management. I enjoy the working environment and don’t feel awkward as a female working within a predominantly male workplace. Being one of the only females within a team can feel quite special and interestingly I have found myself wary of new female employees, it can feel like you are being usurped when others join the group and I may have missed opportunities to bond with other female staff because of this’ (Julie McGurren).

Gender Divide and the Wider Gaming Community

On the whole the female profilers enjoyed their careers and felt accepted within the workplace. However some had experienced barriers and felt unaccepted in the wider gaming community,

‘On the whole I feel very accepted in my workplace - much more so than in the wider gaming community. It’s the little things that can be frustrating; for example, when shopping for games by myself, sales assistants see no problem with asking me if they can help. If I drag my partner in with me, he will immediately become the target of their attention, and I’m left to browse unhindered. I’ve lost count of the amount of times he’s been asked how he feels about my profession when I tell someone new what I do’ (Faye Windsor-Smith).

Within the wider gaming community this profiler was treated differently for being a woman,

‘During my time at university, I explored the realms of online gaming. I wasn’t fully able to participate without a headset and microphone, but I enjoyed listening to others talk during team games. I noticed I never heard other girls’ voices while playing, so it took me a long time to decide whether to engage in chatter when I did get the equipment to use team chat. When I did take the risk and said hello, I noticed an increase in messages asking for my number, or telling me to ‘get off your boyfriend’s account’. These made me feel very uncomfortable, so I went silent again, though never stopping play. After a while, I honed the skill of reading people’s chatter to know whether or not I could speak without receiving too much attention’ (Elizabeth Richardson).
Final Thoughts and Concluding Comments

Working in the Industry: Enjoyment and a Positive Outlook

As mentioned at the beginning of this section, it is evident from the profiles that the women who submitted profiles enjoyed their jobs and enjoyed working in the industry, here are just a few examples from the profilers,

‘I believe the fact that I have no idea where the past few months have gone is testament to how much I’m enjoying working in the games industry. It’s such a massively different experience to my past jobs in retail and customer service, and it’s wonderful to see something that you’ve put so much time and hard work into be published and enjoyed by other people. As is always the case with any job, there are some days where it’s stressful and I think to myself ‘am I really cut out for this?’, but then the payoff when you create something that people love is well worth the stress’ (Carrie Warwick).

‘My work hasn’t changed how I feel about games as a hobby, and I still play them often. I feel incredibly lucky to be doing what I’m doing and my experience of the industry so far has been a very positive one. I’m hoping this will be the case for many years to come (Hannah Payne).

‘I don’t believe you need to be a gamer to work in games you just need to be passionate about what you do, for me I was passionate about my art and this led me to a career in games. I don’t play games like I used to and as my role has changed so has my passion. Whilst my output is less tangible in a production role I am driven by the thrill of working within a team to deliver games played by people across the globe and ultimately that’s what gets me out of bed’ (Julie McGurren).

‘I was open about having no previous design experience when applying for the role, but had played enough social browser games to have picked up some key aspects of monetisation design, and have been learning more and more since. I love finding out what people love about games, and I love trying to make games that people will love’ (Faye Windsor-Smith).

‘Due to my true passion for the industry and perhaps because I love keeping my illusions I am looking forward to still being a part of the gaming industry 20 years from now, but within a truly diverse, more balanced environment. Eventually I hope to turn my very personal experience as being “the only girl in the village” (which isn’t too surprising with an estimated 6% women in the industry) into an academic contribution with my PhD project which I hope will help to identify some of the patterns in this industry that need to be changed’ (Sabine Hahn).

We would like to end this section on the profiles and what are, to us, some of the main messages and themes from them with two positive outlook quotes, which we hope encourage females to consider a career in games,

‘I can wholeheartedly say that the games industry in an extremely worthwhile endeavor for women to undertake, especially if they are dedicated professionals with a clear understanding of the competitive marketplace, the blue chip level of knowledge required to excel, and a preparedness to learn, experience and gain from their peers and managers. The games industry, like other entertainment sectors, is a “people” business, meaning it is very much about the relationships that are developed and maintained. It’s also an environment of both vibrant camaraderie and encouraged self-learning when it comes to the actual craft of making games. Ask, and you will learn. Game developers are interested in sharing their knowledge, and most prefer to see their colleagues reaching for a higher level of achievement. Given the team nature of game production, the entire group benefits as a whole, the more capable, enthusiastic and committed their peers are about the production process’ (Fiona Cherbak).

‘Looking across the YouTube Gaming community, there are some wonderfully strong women that do what they do because they enjoy it and love it. I feel that within this community there is a growing sense of equality and it’s becoming easier for women to be accepted into the gaming world if they have an interest in it. I would like
to see more women involved in the development process of gaming, as I feel that even this simple version of diversity would add to a richer gaming experience in general’ (Elizabeth Richardson).

**THE WAY FORWARD: FUTURE RESEARCH QUESTIONS**

It would appear that strategies for addressing the problems women face within the games industry need to come from a variety of standpoints and perspectives. In order to devise better solutions we need a richer knowledge of the complex, multifaceted issues in order to help gain successful solutions. Due to the number of issues involved we have considered areas for future research under the four broad themes of: educational factors, STEM related factors, gamers and workforce issues. Next to each area of future research is the chapter number or numbers where the issues are discussed.

Rather than merely highlighting limitations, we hope this book has encouraged possibilities and future research directions with some areas for suggestion below.

**Educational Factors**

- Understand how children learn gender roles through playing online games and in virtual worlds (chapter 1).
- Investigate how children use games and virtual worlds to develop identities both on and offline (chapter 1).
- Understand the wider motivations of play and how they link to an interest in studying computer science. (chapter 2).
- How game play preferences and game genres relate to an interest in computer science and other technology fields. (chapter 2).

- Gain a further understanding of women studying for game related degrees (chapter 5).

**STEM Related Factors**

- Employ and further develop outreach programs and initiatives that have proved successful in the STEM sector for the computer games industry (chapter 10).
- Learn from the STEM sector and the research on women working in that sector (chapter 4 and 8).

**Gamers**

- Understand female gamers who embrace the gamer identity (chapter 2).
- Investigate the social games sector of the industry and uncover if more women would be interested in working in the industry due to these games (chapter 9).
- Investigate gender based discrimination and barriers in the wider gaming community, an issue brought up in a number of the individual profiles.

**Workforce Issues**

- Deeper understanding of how the masculine identity of the industry may discourage females entering the industry (chapter 9).
- Do male dominated industries attract a certain type of woman or do women have to adapt to its masculine culture? (chapter 4 and 5).
- Evaluate the effect of long hours and crunch time has on both women and men in the industry (chapter 4, 5 and 11).
- Investigate the possible psychological and physical health implications associated with the long hours working model.
Final Thoughts and Concluding Comments

- Evaluate women who work flexibly and the impact this is having on their careers (chapter 4 and 5).
- The development of a mentorship and community outreach programs and measure it’s outputs over a several year period. (chapter 9).
- Understand what attracts women to work in the games industry and other male dominated industries (chapter 2, 3 and 11).
- Encourage women and girls to enter the games industry workforce, especially in core content creation roles (chapter 2, 3, 4, 5, 6, 7, 8, 10 and 11).
- Understanding of the effects of career factors on women’s aspirations in male-dominated occupations (chapter 6, 8 and 11).
- Consider how women have overcome constraints or embraced supports. Future research would refine these substantive insights, including greater in-depth consideration of specific influences identified from the empirical data (chapter 7).
- Investigate the women who plan to leave the sector and why (chapter 5).
- Future research may consider gaining the views of women who have left the industry in order to gain a fuller insight into why women leave the industry (chapter 5).
- It might be valuable to understand the experiences of women who are senior members of women in games organisations such as WIGI (Women in Games International) as well as the executive women in games organisations (chapter 4, 7 and 11).
- More research about career development among female Japanese game developers and developers, both male and female in other countries (chapter 6).
- Research on countries not included in this book i.e. South Korea, China and more European countries.
- From the profiles, the type of game made and the platform it is played was viewed as perhaps being influential in the diversity of the game making workforce, more research is needed into this.

A COMMON GROUND: FUTURE POSSIBILITIES

As we stated in the preface, the overall objective of this book is to present a collection of recent empirical studies and theoretical work related to the careers of women working in the computer games industry and digital media. The book has brought together current International research investigating underrepresentation in gaming and digital media industries. In particular, the book includes research looking at the experience of workers working in this male dominated environment; including the personal and professional barriers of working in this industry including viewpoints from female industry workers. We hope this book represents a valuable snapshot of the current state of the field with the aim of bringing together a wide range of perspectives in the area and sparks more debates and future research questions.

This book has hopefully provided a valuable contribution, adding to the literature on women working in male dominated industries, the new industries of digital media and women’s under-representation in the wider SET and ICT sectors. We hope this book provides readers with a valuable contribution as it highlights the personal experiences of women who currently work in this new technological industry and male dominated work environment. Not only does the research within this book focus on the experiences of women working in the sector but it also considers research investigating the role of education, socialisation and play can have on influencing females potential
interest and participation in the industry, as well as considering how the STEM sector can impact the gaming and digital media industries.

The research and writings within the chapters of this book are from researchers and authors from a number of different backgrounds and academic disciplines. For instances we have chapters written by academics of the field of psychology, computer science, education, games and media, digital design, IT and interactive media. There are also chapters by one female who works in the industry but has recently conducted academic research in the area. Throughout this book and the issues discussed it is clear that there is the need for more research in order to both understand the issues more fully and in order to further develop and implement possible solutions. We hope this book provides readers with an interesting outlook of the issues and encourage a multidisciplinary approach to considering the underrepresentation of women in the computer games industry.

Male dominated occupations and industries adhere to the male model of working evidenced throughout a number of chapters, and the profiles within this book. The male model of working makes entry into certain occupations unappealing to women and career advancement difficult. A number of barriers are prevalent within the literature, including lack of access to networks, mentors and a lack of flexible working (Prescott & Bogg, 2012). Initiatives such as access to mentoring and networking opportunities can help women progress. Women remain underrepresented in a number of industries, investigating their career aspirations and career development is important. Gaining an understanding of women in male dominated occupations and industries will be beneficial in attracting other women, as well as highlighting potential careers for future generations of women. We hope this book goes some way into helping the computer games industry be viewed as a viable career to future generations of females. Table 1 highlights key recommendations for developing workplace diversity.

<table>
<thead>
<tr>
<th>Table 1. Key recommendations for developing workplace diversity</th>
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<tbody>
<tr>
<td><strong>Key Recommendations</strong></td>
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<tr>
<td><strong>Enable Career Progression</strong></td>
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<tr>
<td>Increase training opportunities for Continuing Professional</td>
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<tr>
<td>Development, encourage female role models and mentors within</td>
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<tr>
<td>the industry</td>
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<td><strong>Promote Flexible Working Practices</strong></td>
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<tr>
<td>Ensure those who take this option are not excluded from career</td>
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<td>opportunities</td>
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<td><strong>Enhance the Profile of working in games</strong></td>
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<td>Promote the industry as a viable career for women</td>
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<td><strong>Challenge</strong></td>
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<tr>
<td>Increase role models for women, ethnic minorities, and</td>
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<td>disabled workers</td>
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<tr>
<td>Challenge perceptions of stereotypical organisational cultures</td>
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<tr>
<td>and views of ‘fit in to succeed’</td>
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<tr>
<td><strong>Adapt</strong></td>
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<tr>
<td>Attract a more diverse workforce by challenging the image</td>
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<tr>
<td>that the games industry is for males only</td>
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<tr>
<td><strong>Recruit</strong></td>
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<tr>
<td>Highlight the variety of roles and skills required within the</td>
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<tr>
<td>industry</td>
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<tr>
<td><strong>Encourage</strong></td>
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<tr>
<td>Ensure diversity is encouraged and practiced in the workplace</td>
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<tr>
<td><strong>Enable Diversity as a ‘good business’ model</strong></td>
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<tr>
<td>Challenge stereotypes and the male model of working i.e Long</td>
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<td>hours culture as the norm</td>
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<tr>
<td>Lack of diversity has an impact on the contribution of women i.e. the type of computer games developed, the type of children who identify with certain careers</td>
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</table>
**Final Thoughts and Concluding Comments**

**Table 2. Key industry issues and recommendations**

<table>
<thead>
<tr>
<th>Industry Issues</th>
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<tr>
<td><strong>The Gender Divide</strong></td>
<td>The image of technology needs to change to incorporate a female view. Eradicate gender based stereotypes such as the image that computers and computer games are for ‘boys only’. There is a need for more female role models to encourage female students to pursue education and careers in computing and computer gaming. The increasing use of technology is making technology more inclusive. However, major gender differences exist to the detriment of females. More is required to reduce this gendered gap especially with regard to confidence and self-efficacy. Increase girls/women’s self-efficacy and self esteem in male dominated disciplines and environments by making them more female inclusive This fast moving industry needs to take into account the skill needs of its employers. This is especially important in retaining a female workforce. Provide more support for female students to engage with computing and technology. Female game workers should be encouraged to remain after maternity leave and given the support to update or regain their skills needed for their role. There is a need to reduce the gender digital divide through education initiatives that focus on getting girls to the same confidence level with ICT as boys. Initiatives need to be more widely available and include a number of digital technologies used in everyday lives in order to help reduce this gap. Girls/women should be equally encouraged to engage with technology.</td>
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<tr>
<td><strong>Impact of Females Working in the Industry</strong></td>
<td>The industry like the wider ICT and SET sector needs to eradicate the image of being a male domain in order to attract a more gender diverse workforce. The industry needs to consider ways in how to reduce the effects of the working practices in order to both attract and retain a more diverse workforce. Promote initiatives such as flexible working. For retention ask women workers what they need. Reduce where possible the expectation of long hours as the ‘norm’ or regular occurrence. The computer games industry could benefit from highlighting the various roles and skills required in the industry as well as the various backgrounds, both educational and occupational, that people who enter the industry come from. Women who are in the industry especially those in core content creation roles could act as role models for girls considering a career within the industry. More females playing games could potentially increase the number of females interested in making games. More female game developers have the potential in making the industry and the games developed attract a more diverse audience. Female game developers increase the potential impact of the industry. There is a need for greater gender neutral game design. Research on women working in the games industry is sparse. More research is needed to consider the barriers and drivers of women in this male dominated industry. Encourage the workforce to have a work life balance. Have transparency in pay and promotional structures. Help plug the leaky pipeline through developing retention strategies such as those related to work life balance issues. Support women in senior positions through mentoring and networking opportunities. Encourage women to apply for management/senior positions. Support female mentees for promotion into senior roles. Promote gender equality in the workplace at all levels from recruitment to retention.</td>
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<tr>
<td><strong>Recruitment</strong></td>
<td>Training of selection group members to avoid unconscious bias. Ensure women are represented in adequate numbers on promotion, job, prize committees etc. Check for implicit bias in criteria for awards and nominations and research assessment type RAE exercises. Remove barriers to women being recruited to and remaining in the organisation. Foster a supportive work environment that appeals to women’s values and work styles. Highlight the diversity of roles and skills required within the games industry. Highlight the benefits of working in this industry such monetary benefits; it is viewed as fun work and part of both the knowledge and creative industries. Highlight the benefits of working in a creative, interesting and rewarding industry. Review current policies relating to hours of work and flexible working practices.</td>
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*continued on following page*
workplace diversity which has been adapted from Prescott and Bogg’s (2012) focus on women in the SET/STEM sector to reflect key recommendations for developing workplace diversity specifically within the computer games industry.

The main premise of this book has been to consider recent empirical research in the area of female underrepresentation in the computer games industry, understand the issues and help future research in the area ask more questions in order to find viable solutions. Although women are increasingly becoming gamers, playing more games and more often, it is apparent that female are not anywhere near being equally represented in the computer games industries workforce. Therefore, men are still designing games for both males and females with little input from a female perspective. With the massive growth of the global gaming audience and the advances in technology as well as creative possibilities, the games industry offers a wide range of interesting career opportunities. However these opportunities are currently appealing more to males than females. Despite legislation over the past 40 years, gender disparities in certain occupations remain. It appears that a number of issues run throughout the industry which contribute to the underrepresentation of women. Factors such as the long hour’s culture associated with the industry, the lack of flexible working available, the lack of females, especially females with families within the industry and thus the lack of role models, as well as the image of the industry as masculine, contributes to the low representation of women. However it may not just be workforce issues at play resulting in the low representation of women within the industry. As the research within this edition has illustrated, educational factors can play a part and an important place/stage at which to begin gaining female interest and skill. Although the focus of this book was computer games and other digital media industries, we have included two chapters which have focused specifically on the STEM sector as an established sector in which the computer games industry may take some guidance. Indeed this is a message Prescott and Bogg (2012) have previously highlighted since many of the issues in the newer technology based industries such as computer games have many of the same issues. Researchers have been particularly interested in the lack of women in computing and information and communication technology (ICT) careers for which the computer games industry fall under the umbrella of.

For the wider ICT sector, the geeky image and the unsocial nature of computer related work are barriers to women’s participation. Overt sexism and discrimination is not as evident within the sector, however our research findings suggest it can still exist. It appears that gender segregation

<table>
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<tr>
<th>Industry Issues</th>
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<tr>
<td><strong>Career Motivation</strong></td>
<td>Recognise the contribution women can make in publication in the leading scientific journals is particularly useful for career progression.</td>
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<td></td>
<td>Make the environment one that fosters motivation regardless of gender.</td>
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<tr>
<td><strong>Retention</strong></td>
<td>Remove barriers to women being recruited to and remaining in the organisation.</td>
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<tr>
<td></td>
<td>Organisational level issues, to be addressed by management, for change to occur and encourage women to remain in the industry.</td>
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<tr>
<td></td>
<td>Increase flexible working practices.</td>
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<tr>
<td></td>
<td>Identify the barriers and opportunities for job satisfaction.</td>
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<td></td>
<td>Encourage the uptake of flexible working practices.</td>
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<td></td>
<td>Employ strategies to help reduce the long hours culture.</td>
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<td></td>
<td>Make long hours and crunch time a rarity rather than the norm.</td>
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<td></td>
<td>Develop staff in project management skills in order to help reduce the long hours needed as deadlines approach.</td>
</tr>
<tr>
<td></td>
<td>Encourage the workforce to be more accepting to the needs of women with children and other caring responsibilities.</td>
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</table>

Prescott & Bogg (2014)
persists in new industries, as well as the older more established ones such as science, engineering and finance (Prescott and Bogg, 2012). What is apparent from the computer games industry is that gendered occupational segregation exists, and persists in this relatively new industry and the culture does not generally appeal to or support women in the workplace. Like the more established science, engineering and technology sector (SET), this new industry has many of the same issues including the long hour’s culture, inflexible working practices and a lack of women with children in the industry. Women in the industry tend to be concentrated within the more traditional less technical roles, which are the non-content creation roles such as human resources, marketing and administration roles. Therefore when discussing underrepresentation of women within the industry, one must be aware that it is not just increasing women in the industry as a whole that is important, but also increasing women’s participation in all areas and occupations, within the industry, in order for true gender equity. Table 2 has key industry issues and recommendations adapted from Prescott and Bogg (2014).

REFERENCES


ONLINE RESOURCES

We have provided a list of online resources which readers may find useful in gaining further information on the issues of women and computer games, the wider ICT sector and STEM sector. The list is not complete, it will hopefully be a good starting guide for those interested in gaining further information and wanting to become more involved.

Computer Games Sites for Women/Girls

The following is a list of online resources that specifically looks at girls/women and computer games.

Computer Club 4 Girls

http://www.cc4g.net/

Computer Clubs for Girls (CC4G) is a new kind of club full of interesting things to do. It’s exclusively for 10 to 13 year old girls.

Girl Gamers

http://girlgamers.co.uk/about/

GirlGamers.co.uk is a dedicated girl gaming site. So if you’re female and you love playing video games, then you’ve come to the right place.

Frag Dolls

http://www.fragdolls.com/us/

The Frag Dolls are a group of girl gamers whose site includes their individual blogs, a forum, and a calendar of events, including opportunities to play against one or more of the

Mary Margaret

Mary-Margaret.com

http://www.mary-margaret.com/Public/Home/index.cfm  The Mary-Margaret Network encompasses a diverse clientele in the games, electronic media, and entertainment industries. We place outstanding candidates - from individual contributors to C-level executives - in positions in every department: from art to engineering, production to sales, and graphics to operations. Since 1996, our focus on superior service to employers and candidates has earned us an unsurpassed reputation for recruitment services and career management.

IGDA Women in Games Development

http://archives.igda.org/women/

Extensive list of resources and links at the International Game Developers Association ‘Women in Games Development’ Special Interest Group.
**Final Thoughts and Concluding Comments**

Thumbbandits

http://thumbbandits.com/

Thumb Bandits is a Gaming Community for both male and female gamers, however the site is heavily slanted towards Women Gamers, the Games Industry Re Women Gamers, Female Gaming within Academia and many interest pieces on / about women.

Women Gamers.com

http://www.womengamers.com/

Because women do play! A website aimed at women who play computer games.

WIGI

http://www.womeningamesinternational.org/

Women in Games International works to promote the inclusion and advancement of women in the global games industry. We believe diversifying the game development, media, academic and publishing workplace results in not only a more equitable space, but better products. Women In Games International advocates for issues important to both women and men in the game development industry, including a better work/life balance and healthy working conditions.

**Computer Games Sites for Gay Gamers**

Gay Namer Net

http://gaygamer.net/

The Gay Gamer

http://www.thegaygamer.com/

**Computer Games Sites for Older Gamers**

The Older Gamers. com

http://www.theoldergamers.com/

Mature Gamer

http://www.maturegamer.co.uk/

Mature video gamer.com

http://www.maturevideogamer.co.uk/
The Older Gamer.com Forum

A forum for gamers aged over 25
  http://www.theoldergamers.com/forum/

Serious Games

There is an abundance of serious games on the market today, here are some useful websites.

Games for Change

  http://www.gamesforchange.org/

Persuasive Games

  http://www.persuasivegames.com/

Mission to Learn


Epistemic Games

  http://epistemicgames.org/eg/

ICT Related Resources

Anita Borg Institute

  http://www.anitaborg.org
  California-based organization, whose mission is to increase the impact of women on technology and to increase the positive impact of technology on women’s lives. Formerly called the Institute for Women and Technology, it now bears the name of its distinguished founder, Anita Borg. The site includes information about its initiatives and links to related sites.

Association for Women in Computing

  http://www.awc-hq.org
  Information about the AWC, links to local chapters and related sites.
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BCS Women’s Forum

http://www.bcs.org/category/8630

This website from the British Computing Society focuses on issues concerning women’s participation in information technology. The aim is to stimulate “dialogue and discussion about the policies and practices in IT and using them to make IT a place that is inclusive.” The site offers profiles of women in IT, statistics and research, annotated links to related groups and organizations, and the opportunity to participate in online discussion forums.

Binary Girl

http://www.binarygirl.com

This web site, “where girls and technology click,” aims to “share knowledge with those interested in learning more about technology through an interactive community of women.”

Computer Girl

http://www.computergirl.us/

Started by Stanford undergraduate Amy Wu, the Computer Girl site is designed “to bridge the gap between young women in high school and the computer world.” It offers abundant resources: web sites, articles, role models, statistics, job categories, summer camp listings, and more. It also provides a place where students can ask questions about the field of computer science [e.g., the job market, salaries, finding mentors, scholarships, work/life balance, etc.].

Center for Women and Information Technology

http://www.umbc.edu/cwit/

Established to encourage women’s and girls’ greater involvement with information technology, the Center offers many resources on its web site, including extensive news coverage of women and IT, announcements of relevant conferences and calls for papers, a bibliography of books about women and IT, a huge collection of web-based syllabi for women- and gender-related courses, Internet resources dealing with women and IT, and more.

Committee on the Status of Women in Computing Research (CRA-W)

http://cra-w.org/

Site includes a number of useful annotated links to sites/events/statistics of particular interest to women interested in computer science.

Cyber Grrl

www.cybergrrl.com

A site for women interested in technology with the slogan: ‘inspiring, informing and celebrating women’
Digital Sisters

http://www.digital-sistas.org

Digital Sisters has been created “to promote and provide technology education and enrichment for young girls and women of color.” The web site provides information about relevant events, news, educational resources, reports and statistics, and links to related sites.

Dot Diva

www.dotdiva.org

A site for women with the philosophy that computing can make a better world.

Exploring Gender and Technology

http://www.gse.harvard.edu/~wit/exploring/index.htm

“This site presents current research, perspectives, and innovative approaches to the gender gap in technology collected from secondary research.” It offers statistics, case studies, a video, online discussion, an annotated bibliography, and annotated links for educators and for girls.

Girl Geeks

http://www.girlgeeks.org/

GirlGeeks aims to encourage women to develop their careers in technology.

Girl Geek Dinners

http://girlgeekdinners.com/

Hold local events to bring women together to educate each other over dinner. A number of girl geek organizations exist through the world including Canada, USA, Australia, Japan, Indian and throughout Europe.

Girly Geekdom

http://girlygeekdom.com/

‘GirlyGeekdom hopes to bring fun, exciting and inspirational content along with relevant news and information from the Science, Technology and Engineering industry’.

Girl Start

http://www.girlstart.org/

Girlstart is a non-profit organization created to empower girls to excel in math, science, and technology. Resources, information and games available on the website.
Final Thoughts and Concluding Comments

Girltech

http://www.girltech.douglass.rutgers.edu/

Girltech explains and demonstrates a framework to evaluate electronic resources (web sites, CD-ROMs, and games) for girls and young women to encourage and increase their involvement in the sciences and technology.

Girl Tech

http://www.girltech.com/

Girl Tech’s mission is to enhance girls’ lives and foster their use of technology by bringing to market technology-enhanced lifestyle electronics just for girls ages 8-12. These products are designed with girls’ play preferences in mind, addressing issues that are important to them such as privacy and communication.

Interactive Selection

http://www.interactiveselection.com/women.asp

Interactive selection support WiG (women in games) and look to recruit women in the games industry. They have a specific site for women- http://www.womeningamesjobs.com/

Rapunsel

http://www.rapunsel.org/

“Realtime, applied programming for under-represented students’ early literacy (RAPUNSEL) is Rapunsel is single-player dance game designed to teach computer programming to 10-12 year olds. The project was started with the goal of empowering young girls to learn programming as a way of addressing the critical shortage of women in technology related careers and degree programs. By giving players the opportunity to explore coding through scaffolded challenges in a playful world, we hope to empower young people to learn about computer science. It is a cross platform, downloadable game created in the Torque game engine”.

The National Center for Women and IT

www.ncwit.org/

The NCWIT works to increase diversity in IT and computing. NCWIT believes that greater diversity will create a larger and more competitive workforce, and will foster the design of technology that is as broad and innovative as the population it serves. NCWIT focuses on improving diversity across the entire spectrum: K-12 through college education, and on to academic, corporate and entrepreneurial careers.
Web Grrls

http://www.webgrrls.com

Webgrrls is an online and offline networking organization of professional women focusing on propelling our careers and businesses forward by leveraging the power of women, technology, and tools that help us succeed. For over 15 years Webgrrls has been at the forefront of the women’s movement online. We’re an online and offline networking organization of professional women focusing on propelling our careers and businesses forward by leveraging the power of women, technology, and tools that help us succeed.

Whyville

http://www.whyville.net/top/gates.html

Whyville is an imaginative web site that aims to help elementary, middle, and high school students (boys and girls) understand and enjoy science. It differs from most science education sites in its use of avatars, games, computer simulation and modelling, a Whyville newspaper, and interactivity among Whyville participants.

Women and Girls Tech Up

http://www.techup.org/index.html

Online zine grew out of an 18-month private collaborative online meeting of 16 small organizations for women and girls. To encourage women and girls - and the organizations which serve them - to use technology to share ideas, opinions, support, creativity and political action. The project was co-sponsored by The Women’s Foundation and The Electronic Frontier Foundation, and funded by Pacific Bell.

Women in Tech

http://www.womenintech.com/

A Hawaii-based organization that seeks to improve the “economic quality of life for women by encouraging them into higher-paying technology occupations.” Women in Technology has developed a number of initiatives to achieve this goal, some aimed at middle- and high school students, others at college students and women in the workforce. The web site includes information about all the initiatives, along with resource articles, scholarship information, a calendar of events, and extensive links to related sites.

Women in Technology

http://www.womenintechnology.co.uk/

At womenintechnology.co.uk we are committed to increasing the number of women working and achieving in the UK’s technology profession. We provide a complete recruitment service, offer a dedicated online IT job board, regularly host networking events, run personal development and career orientated training courses and provide in-depth information about key matters affecting the IT industry and the people who work within it.
Zoey’s Room - A Tech Know Community for Girls

http://www.zoeysroom.com/

“Zoey’s room is an online community for girls ages 10-14, a place where girls can go to explore math, science and technology in a fun, safe and creative environment.” Zoey’s room offers an online collaborative community, a chance to communicate with Zoey in her chat room, Fab Female role model online chats, a place to showcase girls’ creative work, and hands on challenges that lead to big prizes such as digital cameras.

SET/STEM Related Resources

Association for Women in Mathematics

http://www.awm-math.org/index.html

In addition to information about AWM membership, the site offers announcements of current grants, lectures, workshops, projects, and prizes, as well as extensive links to related sites.

AWIS: Association for Women in Science

http://www.awis.org

Among the resources on the AWIS web site are information about awards, scholarships, statistics, job openings, book reviews, profiles of outstanding women in science, a searchable registry of women in science, links to related sites, and more.

BCS Women’s Forum

http://www.bcs.org/category/8630

This website from the British Computing Society focuses on issues concerning women’s participation in information technology. The aim is to stimulate “dialogue and discussion about the policies and practices in IT and using them to make IT a place that is inclusive.” The site offers profiles of women in IT, statistics and research, annotated links to related groups and organizations, and the opportunity to participate in online discussion forums.

Black Women in Mathematics

http://www.math.buffalo.edu/mad/wmad0.html

This site, created and maintained by mathematics professor Scott W. Williams, provides a history of Black women in mathematics, biographies of Black female mathematicians, relevant articles, and links to related sites.
Final Thoughts and Concluding Comments

Braincake

http://www.braincake.org/default.aspx

Aimed at middle school girls, this web site promotes math and science by creating an online community where girls can interact with their peers about current science topics, solve science mysteries, and discuss careers with young women scientists and engineers. The site offers chat rooms, games, contests with cash prizes, mentoring programs, scholarship resources, and more.

Central European Centre for Women and Youth in Science


The Centre aims to promote, mobilize, and network women and youth in science in Central Europe, to raise awareness of the importance of including a gender dimension in scientific research, to prepare young researchers to advance in their careers, to encourage policy developments at the national level concerning women in science, and more. Among the Centre’s many initiatives is an interdisciplinary database of women scientists from Central Europe. The site also includes relevant news, statistics, information arranged by country, links to related sites, and more.

Committee on the Status of Women in Astronomy

http://www.aas.org/cswa/

The website of the American Astronomical Society’s Committee on the Status of Women in Astronomy contains a searchable database of women in astronomy, copies of CSWA periodicals, statistics concerning women in astronomy, links to related web sites, and more.

Committee on Women in Science and Engineering

http://sites.nationalacademies.org/PGA/cwsem/index.htm

The Committee on Women in Science, Engineering, and Medicine (CWSEM) is a standing committee of the National Research Council (NRC). Its mandate is to coordinate, monitor, and advocate action to increase the participation of women in science, engineering, and medicine. Established in 1990 as CWSE, the committee expanded its scope in 2007 to include medicine.

Engineer Girl

http://www.engineergirl.org/

The Engineer Girl website is part of the NAE’s Celebration of Women in Engineering project. This project tries to bring national attention to the opportunity that engineering represents to all people at any age, but particularly to women and girls. The site includes information about what engineers do, great achievements in engineering, career facts, puzzles and games, the opportunity to ask questions of engineers, and links to related sites. Sponsored by the National Academy of Engineering.
Final Thoughts and Concluding Comments

eGFI

http://egfi-k12.org/about/

eGFI is proudly brought to you by the American Society for Engineering Education (ASEE). We are committed to promoting and enhancing efforts to improve K-12 STEM and engineering education.

Expanding Your Horizons Network

http://www.expandingyourhorizons.org/

The mission of the Network is the promotion of the continuing development in mathematics and science of all people, with a particular emphasis on the needs of women and girls. The primary goal is to increase the participation, retention, and advancement of girls and women in mathematics, science, technology and engineering through the Expanding Your Horizons in Science and Mathematics (EYH conferences).

Engineer Your Life

http://www.engineeryourlife.org/

This site describes itself as “a guide to engineering for high school girls.” It includes photos and videos of young women who are engineers as well as information about what engineering is, why it is important, attractive careers in engineering, and how to prepare to become an engineer. The site also includes sections for counselors and parents and for engineers.

European Platform of Women Scientists

http://www.epws.org/

An organization formed “to build a structural link between women scientists and research policy makers. The aim is to introduce a new key strategic actor into the research policy debate by making the voice of women scientists heard.” The site offers relevant news, position papers, official publications on women in science, and links to European Union institutions involved in the decision-making process.

Fairer Science

http://www.fairerscience.org

Funded by the National Science Foundation, Fairer Science offers current information and presentations about women in science, technology, engineering, and mathematics that can be of use to policy makers, educators, and parents.

Female Nobel Prize Laureates

http://www.nobelprizes.com/nobel/women.html

Information about all the women who have won the Nobel Prize.
GEMS: Girls Excelling in Math and Science

http://www.gemsclub.org/index.html

The GEMS club has been in existence since 1994 to expose 5th and 6th grade girls to the fun and wonder of math, science, and technology. The web site offers information about the club’s activities and history, instructions for starting a similar club, tips for adults, and links to related sites for girls.

Institute for Women’s Policy Research

http://www.iwpr.org/

The site’s mission statement reads: The Institute for Women’s Policy Research conducts rigorous research and disseminates its findings to address the needs of women, promote public dialog, and strengthen families, communities, and societies.

It is the leading think tank in the U.S. focusing primarily on domestic women’s issues. Founded in 1987, IWPR’s reports and other informational resources have informed policies and programs across the U.S., in each of its key program areas:


Health and Safety: Women’s access to health insurance, costs and benefits of preventative health services for women, costs of domestic violence.

MentorNet

http://mentornet.net/

MentorNet is the award-winning nonprofit e-mentoring network that addresses the retention and success of those in engineering, science and mathematics, particularly but not exclusively women and other under-represented groups. Founded in 1997, MentorNet provides highly motivated protégés from many of the world’s top colleges and universities with positive, one-on-one, email-based mentoring relationships with mentors from industry and academia. In addition, the MentorNet Community provides opportunities to connect with others from around the world who are interested in diversifying engineering and science.

National Science Foundation

http://www.nsf.gov/

Get news, information, funding opportunities, publications and statistics from this American based organization.
Final Thoughts and Concluding Comments

Sally Ride Science

http://www.sallyridescience.com/index.shtml

Founded by former astronaut Sally Ride, Sally Ride Science is an organization whose mission is “to increase the number of girls who are technically literate and who have the foundation they need to go on in science, math, or engineering.” The web site, intended for parents, teachers, and girls, provides information about why such efforts are needed and activities and resources designed to achieve this mission.

The Association for Women Geoscientists

http://www.awg.org

The Association for Women Geoscientists exists to promote the professional development of its members, to provide geoscience outreach to girls, and to encourage women to become geoscientists.

The National Association of Women in Construction

http://www.nawic.co.uk/

The NAWIC encourages women to pursue, establish and sustain successful careers in the Construction Industry. The NAWIC is an international, non-profit, voluntary organisation run by professional women working either directly in the Construction Industry or for businesses who provide services to the Construction Industry. The association aims to promote the positives in the Construction Industry as a whole and to highlight the fantastic work carried out by professionals working in the Construction Industry. We organise regular events in each of the regions focusing on: networking, education, site visits and skills.

Women in Architecture

http://www.diversecity-architects.com/WIA/wia.htm

Women In Architecture aims to provide a forum for people to meet, share experiences and jointly lobby for better conditions and opportunities for women. We aim to raise the profile of women within the profession and represent their views.

Women in Banking and Finance

http://www.wibf.org.uk/

Women in banking and finance (Wibf) based in London, is a non-profit making leading professional organisation committed to empowering its members in the banking and finance industry to realise their full potential.
Women in Construction Action Network

http://www.wicnet.org.uk/index.php

The Action Network is providing valuable access to training that will help to facilitate ‘job readiness’ and proactively encourage network opportunities for women working in the construction industry in the North West of England. It will also provide a valuable source of information for those women wishing to find out more about entering the industry.

Women and Manual Trades

http://www.wamt.org/

The UK’s national organisation for tradeswomen and women training in the trades. WAMT has been championing tradeswomen in the UK for 30 years through campaigning and training, and is the only membership organisation specifically for tradeswomen.

The Association of Women In Property

http://www.womeninproperty.org.uk/

Women in property is a national organisation that seeks to enhance the profile of women in the construction and property sector, both by providing a dynamic forum for women in these professions and by encouraging and nurturing aspiring talent.

Women in Mathematics

http://camel.math.ca/Women/

Sponsored by the Canadian Mathematical Society, this site contains information and links of interest to women in mathematics and to those contemplating careers in mathematics.

Women in Science, Technology, Engineering, and Mathematics ON THE AIR!

http://www.womeninscience.org/

This site describes itself as “an audio resource for young girls, young women, parents, middle and high school teachers, college professors, guidance counsellors, . . . and anyone interested in learning more about the past, present, and future role of women in science and technology education, fields, and careers.”

Women of NASA


Site designed to encourage more young women to pursue careers in science, math, and technology. Includes profiles of female scientists, ideas for integrating the site’s information into the curriculum, an annotated bibliography of books related to gender equity in math and science, and more.
Final Thoughts and Concluding Comments

Women Who Walk Through Time

http://www.agiweb.org/pubs/pubdetail.html?item=300165

Women Who Walk Through Time—a site about women in the Earth Sciences with special features for young girls. Includes information about a video that encourages girls and young women to consider a career in the earth sciences and career information. “Women Who Walk Through Time demonstrates the challenges which inspire geoscientists and why they enjoy their work”.

Gender and Diversities Institute

http://www2.edc.org/gdi/

An institute “dedicated to improving the well-being of individuals and communities, especially women and girls, through innovative, gender-healthy approaches to life-long learning.”