Making the Grade: Feminine Lack, Inclusion, and Coping Strategies in Digital Games Higher Education

Abstract

The barriers faced by women in games have been firmly established, including well-documented harassment campaigns and material forms of structural gender-based discrimination such as gender pay gaps. At the same time, the explanation that homogeneity in the games industry is due to a 'leaky pipeline' between training and the workforce persists, extending discourse familiar from the history of computing. Games higher education, the presumed feeder for diverse talent, remains underexplored despite the increasingly compulsory nature of university degrees in job postings. This article addresses the gap by exploring the experiences and perspectives of students studying games subjects in five UK universities. Based on thematic analysis of these interviews, I argue that efforts to 'get in' to exclusionary tech spaces based on discourses of feminine lack fail to account for how these environments require marginalized people to develop strategies for coping with exclusionary norms to 'stay in'.

Keywords:

Games higher education, diverse talent, gender, femininity, subjectivity, opportunity, coping strategies

Introduction

Action aimed at redressing inequalities in technical fields, from programming schools targeting women and racialized people (Miltner, 2020) to historical work detailing how diverse people were pushed out of computing (Hicks, 2017), have come to play an important

role in shifting long-standing associations between white male subjectivities, technology, and spheres of production. Games have long played a key role in this work, with digital play and design framed as a gateway for girls to develop skills and interests in technology broadly and programming specifically (Kafai & Peppler, 2011). Despite this perceived power for supporting the development of technological literacies, digital games remain a troubled field in terms of inclusion. Gender-based exclusions in games play and production take myriad forms, including marginalization in online play (Gray, 2011), overt misogyny within gaming publics (Salter and Blodgett, 2012), and persistent sexist harassment faced by gamesworkers (Lorenz and Browning, 2020). The games workforce mirrors Silicon Valley in many ways, with a homogenous workforce that is 71% male (Weststar et al, 2019) and a history of decentring the contributions of women in the industry (Nooney, 2013). Interventions aimed at 'creating equity' in games (Jenson and de Castell, 2013; Gray and Leonard, 2018) have taken an intersectional feminist approach, from projects queering the canon of digital play (Ruberg and Shaw, 2017) to industry-focused interventions focused on shifting the norms of participation in e-Sports (Taylor, 2017). While exclusions within games have been the object of sustained resistance, this work has not been unanimously welcomed or valued, with the subject of game-making talent a particularly contentious topic. The response within games culture to actions aimed at increasing diverse participation, particularly through educational initiatives aimed at skills development, are instructive for similar ventures in computing and programming.

Backlash against widening participation in games emerged in dismissive responses to community organizations focused on informal education to support women making games, including Dames Making Games Toronto and Pixelles Montreal (Fisher and Harvey, 2013; Harvey and Shepherd, 2016). This reflects a wider cultural rejection of diverse forms of

engagement with games; the now-infamous GamerGate harassment campaign originated in disbelief on Reddit and other sites about the positive reviews given to Zoe Quinn's game *Depression Quest*. Here, variants on 'it's not a real game' and 'anyone could make this' construct a narrow vision of legitimate game-making. Through these debates about appropriate skills and training, all but a few technologically sophisticated game-making technologies and game types are devalued, reaffirming, as discussed below, a long-standing framing of girls and women in games as lacking.

Boundary-policing discourses of appropriate skills required for game design tend to reify a specific vision of intelligible talent in games, one that is linked to the high-tech approaches taught in higher education games programmes. With the turn to formal training, the gender breakdown of students in games subjects becomes a powerful explanatory frame for women's ongoing under-representation in the games industry. For example, the CEO of the UK games trade group TIGA Dr Richard Wilson laments the lack of diverse talent in games as follows:

> 'The video games industry depends upon highly skilled, highly talented and highly qualified people to create games. Typically, 80% of the workforce is qualified to degree level or above, but the proportion of women studying subjects such as computer science or games programming courses is low. There is only a comparatively small pool of potential female employees available to work in the games industry' (qtd in Ramanan, 2017)

Notably here game talent is linked to a valuation of the most technical elements of design and development (rather than, for instance, game art or writing), indicating the ongoing centrality of what Dovey and Kennedy (2006) refer to as the technicity of games, a cultural hegemony valuing rationality and mastery of machines associated with masculine subject-positions

(Wajcman, 1991). In tandem with the increasing importance of higher education qualifications as a route into gameswork (Deuze et al, 2007), this identification of training as an explanation for the lack of diversity in the industry necessitates further exploration of formal educational contexts and stakeholders. Games higher education remains a largely unexplored site, particularly in terms of its possibilities for challenging inequalities. Existing research on games education across national contexts indicates that it contributes to the formation of professional identities that are conservative and risk-adverse (Ashton, 2009), despite discourses of creativity and innovation linked to games programmes (Gouglas et al, 2010). In policy-making, the role of games programmes in challenging the homogeneity of games has been framed through the mechanistic discourse of the 'talent pipeline' (Harvey, 2020). A dominant metaphor deployed to discuss exclusion as well as interventions to increase the number of women in tech fields, the pipeline has been subject to a number of critiques, including how it overlooks structural and cultural features making the route from education to work hostile to marginalized people in games (Weststar and Legault, 2018).

In this article I explore these elements of formalized education through analysis of interviews with participants within games higher education in the United Kingdom. First I introduce the context for the study, providing an overview of commercial and research approaches to "getting girls into games", a conceptual framework of feminine lack underpinning formalized games training in UK-based universities. I then explore how women in this study perform and negotiate their gendered subjectivities within masculinized cultures and spaces. Here, being a woman in games is framed as atypical, requiring various tactics to align feminine subjectivity with the norms, values, and expectations embedded within these spaces. As I will show, the call for greater diversity and inclusion in tech spheres needs to be followed by close exploration of what "getting in" demands for women and girls. In the case of games

higher education, participants reveal the coping work required for them to belong, and here I examine these strategies, their affective contours, and the toll greater opportunities for participation can take on those it is assumed to benefit.

Never Good Enough- The Girl Gamer and Feminine Lack in Digital Play

Feminist interventions are part of a longer history of critique and action aimed at challenging the gendering of digital games and increasing diversity in play and design in particular. From the 1980s onward, the impetus for boosting numbers of girls in gaming spaces has been related to concerns about STEM educational and career pipelines. Games have long been positioned as important technologies for socializing young people with computing, and researchers feared that without equal access girls would fall behind and 'be second-class citizens in the computer-intensive world of tomorrow' (Kiesler et al, 1985: 452). Techniques for redress have ranged from essentializing boys' and girls' play as inherently oppositional, leading to the design of games specifically for female audiences based on gender stereotypes (Kafai et al, 2008) to the development of critical feminist mentorship approaches to game design spaces for girls (Dahya et al, 2017). In the case of the former, the games for girls movement and commercial forays into broadening the girls' markets such as Mattel's series of Barbie games are oft-cited examples of game design that represented girls as reluctant and unlikely users that must be courted via feminized aesthetics as indicated by their description as pink and purple games (de Castell and Bryson, 1998). In terms of game design initiatives, the focus is frequently on confidence-building for girls in masculinized cultures (Cunningham, 2011). Across games play and production, then, women's and girls' participation is traditionally framed in some way from the standpoint of lack (Jenson and de Castell, 2010). Through a consistent focus on the shortcomings of the "girl gamer" in contrast to the default male "gamer", this quarter of digital culture reifies notions of the feminine as

defined through the masculine, as imperfect or deficient relative to their binary Other (de Beauvoir, 2011). These dynamics perpetuate an association between masculinity and technology that renders female subjectivities in these contexts unintelligible (Butler, 1990).

Framings of feminine lack persist despite the broadening of digital play practices and audiences. Participation in games remains defined according to the interpellation of a normative white male gaming subject (Shaw, 2013), affirming girl and woman as Other in this sphere. Legitimacy debates related to women and girls who participate in games demonstrate this Othering, where discourse revolves around their apparent deficiencies in passion for the right types of games or expression of the correct sorts of investment in the media form (see for example Vanderhoef, 2013 on the connections between casual games and feminine lack). In addition to providing a shortcut for indicating how girls and women are deficient in strictly-defined and heavily-policed gamer capital (Consalvo, 2017), the girl gamer label continues to circulate in high-performance play cultures and spaces, playing a stigmatizing role for female professional e-sports players and popular Twitch streamers who are constantly required to modulate how they present their embodied gender identity (Witkowski, 2018). As this indicates, feminine lack as a dominant discourse serves to consistently Other female subjects in games, and requires them to engage in a range of diverse coping strategies, from obscuring their gender online to leaving games spaces, tactics that can further contribute to the notion that games are a masculine pursuit (Cote, 2015).

In this way, contested legitimacy in games parallels that within broader geek cultures, where debates about authenticity through references to credentials and track record are common, with casuals and hobbyists derided based on a lack of obsessiveness about mastery. As Reagle (2015) demonstrates in his discussion of the ‘fake geek girl’, authenticity is related to

the alignment and congruence of an individual's subjectivity with how they enact their identity, a process that is performative and negotiated socially. In spaces of technicity-based fandom, boundaries are configured to act as double binds for women, where they are both too geeky or not geeky enough, judged based on their beauty (their bodies and attractiveness) and their brains (their knowledge and worth), and ultimately deemed as lacking- fake- in both. These double binds for women around skills, appearance, availability, and attention arise regularly for women in games, including streamers critiqued for using their sex appeal to engage audiences (Ruberg et al, 2019) and female players judged for their conformity to heteronormative standards of attractiveness (Condis, 2018).

Women's interest is furthermore framed as serving to devalue gaming culture. This was made evident during GamerGate, where proponents of 'ethics in games journalism' expressed in myriad ways how they agreed with inclusion and "girl power", but not in how it was enacted by feminist critics, whose politics and actions they framed as incompatible with both equality and true passion for games. GamerGate's crowd-sourced mascot, Vivian James, was intended to counter critiques of its misogyny and provides a figuration of the ideal gamer girl- a defender of games, a voracious online player, and certainly not a feminist (Butt and Apperley, 2016). Furthermore, as Butt and Apperley note, the mascot's frequent calls to 'shut up and play' 'expresses the desire for women to stop "complaining" and drawing attention to the harassment they experience' (np.). In sum, Vivian James as the idealized gamer girl exemplifies the policing of feminine gaming identities by reinforcing masculinist and toxic norms in games, indicating that the Other may only be accepted should they conform to the norms of the constructed gaming ideal.

As this overview of games culture, production, and play indicates, women and girls in games face multiple barriers related to their participation. A tremendous body of scholarship demonstrates that this occurs through outright exclusion of women via overt sexism and misogyny, but what this review evidences is that even when women are present their subjectivities in games are rendered intelligible through insidious notions of lack relative to the idealized masculine subject. Clearly then we need to take a critical lens on sites of "getting women into games", including spaces of higher education where the student body remains largely young, white, and male. Despite the widening of games audiences, women in games education remain underrepresented, and must deal with a range of implicit and explicit forms of policing to succeed. Rather than focusing on their absence and narratives deployed within games educational spaces to explain lack yet again, here I explore how higher education, a significant site in discussions of diversifying games work, is experienced by women who have already arrived.

Methodology

This analysis derives from a project seeking to understand how the spaces and practices of games higher education may or may not contribute to inclusion in this creative sector. I conducted mixed-methods qualitative research within five UK-based institutions offering suites of games programmes at the undergraduate and postgraduate level. Through interviews, observations, and critical discourse analysis of policy and promotional texts, I explore research questions focused on diversity and the formation of work subjectivities in higher education. For this paper I draw on a subset of the forty-nine in-depth semi-structured interviews with current students and instructors from a diverse range of programmes entailing study of programming, art, design, technology, business, and critical theory at five UK universities.

This analysis focuses on the women who participated in the study, and how they articulated their histories, experiences, and future plans in relation to games. A total of fourteen undergraduate and graduate-level students and four instructors used she/her pronouns, self-identifying as cis or transgender women. All but one of these interview participants were white, but they were otherwise diverse in terms of age, sexual orientation, class, ability, and nationality. This diversity was also reflected in their experiences and perspectives, with some articulating classic gaming histories and passion for the medium while others were more interested in the links between games and other interests such as fantasy art. Though women were in the minority in their courses, they differed in their opinions on diversity and inclusion, with some identifying as feminists and actively arguing for the need for a major shift in gameswork and culture whereas others articulate weariness about quota-based approaches and essentialized ideas that marginalized people necessarily usher in greater innovation. I want to emphasize this heterogeneity while also noting that my overview of feminine lack reflects how frequently these participants referred to notions of deficiency when grappling with their Othered subject-positions in their relationships with games. This is complicated by the fact that it is often challenging to directly engage participants on the topic of inequality, as they frequently express strong principled positions on questions of diversity while remaining reluctant to speak specifically about their own position in oppressive and exclusionary systems. As Allen et al (2013) note, 'hesitancy to identify such issues is bound up with the centrality of neoliberal discourses to processes of subjectification where to position oneself through discourses of inequality invites the danger of being seen as inadequate' (p. 435). It is therefore all the more striking to find within the thematic analysis of these interviews several shared repertoires linked to notions of feminine lack when participants discussed their viewpoints, choices, and encounters in higher education.

Before I explore these recurring themes and explanatory frames, it is necessary to provide context for where these students and instructions are situated. Games programmes in the UK are largely hypercompetitive spaces tending to normalize many of the trends in the games industry that critical equity-oriented work aims to shift. This includes a focus on technological innovation and skills at the expense of arts and interdisciplinary approaches, an emphasis on the role of the university as a training grounds for work within the mainstream industry, and a normalization of exploitative working conditions through discourses of passion (Harvey, 2020). The normalized way of operating within games programmes in this study is premised on an acceptance of neoliberal discourses related to managing risk in a competitive work environment, expressed in heavily masculinized ways (Harvey, 2019) mirroring student discourse in other creative industries fields (Allen, 2013). This serves as a form of affectively-charged work-readiness for the games industry, which Johnson (2018) posits is rife with a pervasive technomasculinity, including performances of 'heroic masculinity' about overwork, short career tenures, and precarious contracts. It is therefore unsurprising that participants in this study nearly universally agree that gameswork and study are male-dominated, though many also assert that this shifting and for the better. Regardless of these hopes, what my participants reveal is that "fitting in" requires a number of affective and practical strategies with accompanying sacrifices while negotiating their work and study. In the next section I discuss four of these coping strategies (which are often reinforcing rather than mutually exclusive), and then follow with a discussion of the 'opportunity costs' of these negotiated tactics. I conclude by discussing inclusive alternatives suggested by participants demonstrating new directions beyond the emphasis on lack when discussing diversity in games.

The Coping Strategies of Women in Games Education

Exceptionalism

None of the five institutions where my participants are based collect annual statistics on the demographics of their student bodies. That said, it is immediately evident that institutions employing female members of teaching staff also have a greater number of female students present in these course. Still, interviewees note that the majority of students in their programmes are white, cisgender, and male, with female students in particular overrepresented on arts-related courses and dramatically underrepresented in programming and design. Some instructors assert that LGBTQ+ people are quite visible in these courses, reflecting trends noted in the 2019 alumni survey conducted by the Higher Education Video Game Alliance (where 26% of respondents identified as female, and 20% as LGBTQ+).

Where cis and trans women are clearly underrepresented and therefore deviate from the average student in games programmes, it might not seem surprising to encounter exceptionalism as a recurring narrative. In a range of ways my participants articulated how being a feminine subject was out of alignment with the norm and therefore exceptional, entailing a range of strategies for bypassing the discomfort of being an outlier. One international student studying game art for instance emphasizes the value of "the woman's perspective":

> 'A lot of men from professional game industry… said that it's awesome that I'm a girl because they need that. They need fresh minds... A lot of games that I worked on in first year for example, were very programming-heavy and they were very difficult to play. They seemed really unapproachable for many people because nobody was there to say, "Look, actually we have a variety of people who would play such a game. And we have to think about different levels of a player."'

This shows how exceptionalism can be linked intrinsically to notions of feminine lack, where women in games are uniquely situated to provide insight into audiences with less technical ability or as this student later adds, a 'lack of experience'. This positive lens on the elusive question of "what women want" is shared by another international student studying indie game development. She describes warmly an internship experience where the company specifically sought her opinion about the look of a female character, who they wanted to 'keep more realistic, rather than a guy's fantasy':

> 'they definitely wanted my perspective… just so they could get into the female mindset, because they've only worked with guys and for them to branch out to reach the female market, it was important for them to get my point of view.'

While for the character design the student conducted research on the physiques of athletes to construct a figure that could be "relatable" for women, on the main her vision of how to attract female players is based not on her own preferences or experiences, but on a vision of the "girl gamer" as distinct from herself:

> 'For a shoot 'em up game kind of thing, girls typically won't be into that kind of thing, whereas if you make it so that the characters are customizable, you can add your own skin to a gun or something, that brings them in a bit more. I think what I've noticed whenever I've spoken to girls who play games, they were normally playing *The Sims* or a lot of mobile games, but most of them have customised characters and accessories and stuff like that. I think that's an important part if you want to reach certain markets.'

As this demonstrates, female students deploy narratives of exceptionalism to discuss their place in games not by comparing themselves to their male counterparts but to other women, including within their own programmes. Disturbingly, this positioning of exceptionalism is not limited to a re-entrenchment of stereotypes about female audiences but also associated with an ability to cope with marginalization and experiences that might be intimidating or uncomfortable for 'some girls'. This is articulated by a mature queer student of colour studying game design and production, who tells me:

> 'Sadly, I think girls are a little intimidated to be the only female in a male environment. I'm used to it because all the companies I've worked at, I have been the single female. I just ignore it, but I do understand how some girls might find that intimidating.'

When I followed up on experiences that she had to ignore, she tells me that she had adapted to the discomfort: 'I just got used to that so I don't care. That's just me. The other girls, I'm not quite sure about them'. This student, like many others, emphasizes her abilities and her work ethic when discussing her successes, but also attributes carrying on in her studies, including a previous degree in computer science, to being able to get on with work despite the challenges of being one of few or even the only woman in the cohort. While students on the main are reluctant to discuss specific hostile interactions, they did tell me in more general terms about exclusion in games programmes ranging from female students being talked over in team meetings, student groups known for evaluating the sexual attractiveness and availability of their female peers, and classroom discussions about sexual harassment claims ruining the industry and of women's innate deficiencies related to technology. In these environments, highly individualized approaches to managing and modifying one's expectations, behaviours, and tolerances based on exceptionalism are common, but they run

two risks. First, they can serve to reaffirm exclusions in games by normalizing the need to adapt and cope with both microaggressions and overtly toxic experiences in games. Second, they reaffirm assumptions related to feminine lack through one's ability to manage masculinist norms, a perpetuation of hegemonic gaming subjectivities linked to the second coping strategy.

(Mis)Alignment with the Default

Based on the need to be exceptional to be able to flourish in environments premised on feminine lack, another common tactic among these participants is to situate and align their interests and identity with the default game student subject-position. This is exemplified by the above-mentioned indie game development student, who tells me she is unsurprised to be the only girl in her programme but still wholly positive about her experiences. She explicitly aligns herself with the hardcore gamers she says populate her course, telling me: 'I'm more of a guy than a girl really in the terms of, I game, I'm not into fashion or that kind of stuff, I go to football games, so I fit in pretty well with everyone else.'

This positioning depends on the discourses of default male gamer subjectivity, valuation of hegemonic masculinities, and the notion of the girl as Other. In this way these utterances align with research on female science students (Francis et al, 2016), where participants rejected stereotypes about gender and scientific ability, and instead rely on a narrative of equal opportunities. As they argue, this rhetoric is linked to neoliberal discourses of individual power framing gender inequalities as outdated and individuals as in power of their destinies given sufficient effort, aptitude, and self-motivation. However, despite these claims about equality, their participants discuss femininity in ways that characterize it as lacking. In parallel, it was quite common in my study for participants to situate themselves in relation to

the hardcore or casual gamer identity, positions deeply tied to notions of masculine supremacy and feminine lack.

The entrenchment of the default gamer subjectivity informs those who perform alignment, as well as those who negotiate feelings of misalignment. Some women in games education tell different kinds of gaming histories, such as preferences for watching others play or games outside of the dominant mainstream, Triple-A canon, and here anxiety about not conforming to the default gamer identity is common. For some students entry into their courses dispelled such concerns, while for others their lack of gaming capital and misalignment becomes a subject of derision for their peers, deeply entangled with technicity and a valuation of technical skills in games. Students specializing in arts-related degrees often note feelings of lack in this regard, and struggle to overcome 'steep learning curves' to find a fit in their programmes. Not simply a matter of succeeding in coursework, one art and design student synthesized the relationship between technical skills and social standing clearly:

> 'There's seems to be ... like a hierarchy? You've got the really good 3D people who are hired like that and then you've got a group of ... like a clique of people who want to work for Blizzard [a large mainstream American game developer and publisher] and they're really good at what they do who won't talk to people like me kind of thing'

Within games education the culture is premised on a love and passion for games and an emphasis on technical mastery, and this informs expected work styles, social activities, and the formation of working and leisure groups. (Mis)alignment with the expected default entails work for all women in games, as the above student further crystallizes:

> 'I did everything I could to try to fit in before the course because we had a Facebook page set up and… the girls are into something that I'd never heard of called cosplay

> and I was like, “Oh. I get it. So you dress like game characters by the sounds of it” .... I mean I had no idea. I was like, “Steampunk?” So I said to my mom, “Right. I need to do this thing called cosplay because I think that's going to be pretty big here.” And we went around car boots looking for steampunk-looking things and I got there and I was like, “Oh I completely misjudged it”’.

As with exceptionalism, this coping strategy hinges on notions of feminine lack and careful positioning of oneself relative to a defined gaming identity to ensure belonging. These tactics, however seamless or in tension with the default, place the onus on each woman to grapple with the correct performances of gender in relation to games as part of their time in their studies. As the next two coping strategies demonstrate, at times this also requires participants to tactically distance themselves from their peers, actions clearly demonstrating the strain of taking opportunities to get into games.

Getting on with it

The third strategy discussed by cis and trans women in these courses reflects less overt effort in trying to fit in and instead strategic engagement recognizing lack of fit, what I am here terming ‘getting on with it’. This entails some form of isolation from their peers, despite the fact that games courses are largely team-based and assessed on collaborative work. Some participants for example report that they did not participate in any of the student societies in their programmes, and others describe avoiding social situations entirely. For these students there is a clear “me vs them” understanding of their peers, a sentiment of not fitting in partially or totally. As one game design student articulates, ‘I don't really have that much contact with other students outside of just asking them about work. I couldn't really comment too much on their culture’.

This coping strategy is framed as agentic resilience, based on personal strength and individual independence rather than as a response to outright exclusion, what one MA student described as a ‘fake-it-to-make-it confidence thing’. However, for some trans students this strategy also entails not disclosing to their peers their gender identity or preferred pronouns. One student had shared her preferred pronouns with her parents, friends on Facebook, and online gaming communities, but feels that it is easier to avoid sharing with peers in her game design programme to prevent negative comments. Another games writing student tells me it was simpler to avoid lengthy conversations about preferred pronouns and to get on with it, saying ‘I'm just going to let it go, let's just do work’. It is important to note that these are individuals for whom asserting their pronouns and names are the first step to transitioning, so these approaches are not inconsequential.

These students clearly articulate how the norms of games education spaces require them to obscure or isolate elements of their identity to cope, self-regulation efforts that illustrate how the constraints of the presumed subject of gaming impacts on those who trouble them by dint of being Other. This approach hinders some trans students from transitioning, and several women in these courses indicated that tolerance for sexism, transphobia, and misogyny were key to their success in the field. But for some participants these strategies became untenable, and it is to this last tactic that I turn to now.

Refusal

The individualized responses I have synthesized are premised on making efforts to negotiate narratives of feminine lack in games through discourses of personal strength charged with positive, agentic affect. This bravado mirrors how students articulate acceptance of

exploitation in labour discourse (Ashton, 2011; Harvey, 2019) and envision promising working futures despite structural challenges (Harvey, 2020), normalizing structural problems from sexism to overwork. It is therefore striking to encounter a minority of students who respond to these norms with the idea of refusal, especially as they are more likely to speak about the pain they have experienced in trying and failing to fit in. Two female students in the study disclose that perhaps they would not continue on in games. One was the above-mentioned student in games art that worked to fit in by trying to get into cosplay, and the other was a queer game design student. The former identifies as a 'girly girl' interested in augmented reality and tactile media in games, while the other self-describes as a feminist and proclaims diversity in games to be her greatest passion. Though quite dissimilar in their experiences and pursuits, these women share a clear deviation from normative, uncritical passion for games.

The games art student, for instance, refers to multiple instances of feeling left out, of being an outsider, not belonging, and even being 'literally left outside' when work groups were being formed. Her work is cited by instructors as exemplary in its creativity but she recounts her experience of the programme as being solitary and harsh. She was an outsider because being a gamer girl, from her perspective, aligns with a technomasculinist, 'muscular' approach to games, having a passion for mainstream games as well as strong technical abilities. Her interests in artistic design for diverse audiences including children simply did not align. This student is direct about the costs of trying to belong- physical and emotional distress, isolation, discomfort in an exploitative internship, and a sense that she would have to change her style to fit into the industry, a sacrifice she ultimately refused to make.

This student's explicit discussion of anger, sadness, and the disappointments of her education experience, on which she only enrolled because of a charismatic female course leader encouraging her by dismissing the need for coding abilities, does not map neatly onto the experiences of the second student studying game design. This student articulates a passion for games that mirrors in many ways ideal gaming discourse, enthusiasm for a range of mainstream and indie titles, and love for her course. This however is inflected with a deep commitment to addressing structural issues such as whitewashing and intersectional exclusion in games. In her programme, her criticality is a subject of mockery by some peers but she embraces opportunities to educate others. When it came to future work, though, she did express some reservations given the scale of the structural issues:

> 'It puts me off, not necessarily the course, but going into the industry. It's a massive issue. It's my biggest passion and it's something that I'd love to change but the representation of women in the games industry and in games is such a big issue. That's not even including LGBTQ+ and people of colour'

The systemic challenges of dealing with underrepresentation and exclusion as well as devaluation of difference for these students entails the possibility of leaving games entirely, not yet a full refusal but one that is possible. As Gregg (2015) argues, moments of attrition are strategies too; 'a leaky pipeline might actually be a sign of workers' agency- of their empowerment and willingness to leave intransigent cultures that don't align with their values' (np). Refusing to fit in or get on is an approach that most clearly indicates the still-exclusionary cultures of games influencing educational contexts, and points to the ultimate sacrifices entailed for women in these contexts.

Opportunity Costs & Alternatives

These coping strategies have clear costs for women in games education, as such positionings are premised on individual efforts and often contradictions, depending on denigration of femininity, acceptance of marginalization and harassment, denial of the pain of isolation and obfuscation of one's gender identity, and in some cases attrition from games entirely. Even those aligning as closely as possible with the masculinized gamer subjectivity, as with the student who described herself as 'one of the guys', articulate a toll to endure. This student mentions that her peers fit the stereotypes of gamers in that they are socially awkward with girls. In other words, she clarifies, they do not talk to her, despite the high degree of sociality required by pervasive group work in these programmes. Because she depends so heavily on her two friends for this mandatory collaboration, she decided against participating in a placement opportunity lest she lose her working group. In accepting this social isolation and costs to her professional development, she demonstrates what 'gamer girls' have to bear to belong.

In some ways the opportunity costs experienced by women in games higher education become clear when they talk about alternatives offered by collectivist women-focused gaming actions. For example, the Master's student who expresses an ability to cope with the challenges of being the only woman evidences a major shift in her affect when discussing her participation in the feminist XX Game Jam (Kennedy, 2018). Her face lit up, she became animated, and she describes the experience enthusiastically as 'amazing' and 'awesome':

> 'It's so quiet. It's like everyone's respecting one another. Nobody's talking over each other. It's like everyone's just so nice. It has always been a male-centric environment where people do talk over each other and get aggressive, so it's very pleasant. I hope there are more activities like that.'

This enthusiasm for events and spaces organized by women in games initiatives (and emphasis on the novelty of games atmospheres that are respectful, nice, and pleasant) is repeated by many other students, including a game art student telling me she enjoyed one of their conferences and the keynote in particular because ‘it was really encouraging to see so many women there. Her keynote as well talked about her struggles, as a woman and stuff in the industry. The talks were just really encouraging as well.’

This eagerness extended also to industry environments, including within internships. One games writing student works at a woman-led company where female employees are well-represented, and she recounts:

> ‘They were telling me all of these horror stories about what they've experienced in triple-A board meetings and actual in-office industry. We've got none of that because the people she's hired are all trusted and lovely. It's such a wonderful environment to be nurtured in. I don't have to be scared of being talked down to or whatever, even though I don't know anything and all of these people know everything. They still treat me like one of them and it's really nice.’

Social networking by women-focused groups and initiatives was viewed positively, with one game arts student noting:

> ‘I don't feel like I have to worry about the fact that I'm a girl, because I know there's those things there that, if I ever did run into a situation where I wasn't getting hired because of my gender kind of thing, I'd know… there's people there to help if it did. It's like a nice little safety net, I guess.’

From these responses to women-focused interventions, we can discern more about the unspoken characteristics of student experiences in male-dominated cultures- for instance that they do not provide the encouragement, acceptance, kindness, respect, and safety found in women-focused spaces. These students also indicate the concrete benefits provided by collective efforts recognizing the challenges they previously negotiated alone. Coping strategies by women in games, as Cote (2015) notes in her discussion of women facing harassment in online play, can be temporary fixes that perpetuate exclusionary norms and assumed male subjectivities. As she suggests and my participants demonstrate, collectivist approaches can provide important redress.

Conclusions

The dominant frame placed around diversity and inclusion in higher education mobilizes the metaphor of the pipeline, a powerful trope used to discuss inequities in STEM since the 1970s (Metcalf, 2010). Despite the metaphor's primacy, participation gaps in tech remain, and scholars have roundly critiqued this approach for failing to account for diverse pathways (Xie & Shauman, 2003) and intersectional barriers in what are largely white, male cultures (Carlone & Johnson, 2007). As this analysis demonstrates, ignoring the social and cultural elements of higher education contexts necessitates students to accept that some identity performances such as resilience in the face of structural exclusion such as sexism are intelligible, while others, such as feminist critique, are not. A further issue with the pipeline metaphor is that it fails to address institutional forces disproportionately impacting on underrepresented and marginalized people in tech fields, especially beyond the supply-side of education. In the case of my study, the women who teach on these programmes are instructive about what it costs to be the role model in higher education. One, who most female students cite as the reason they enrolled, left her university because of a lack of

progression opportunities and denigration of her work on inclusivity. The second describes the exceptionally heavy load of pastoral care work for which she is responsible, labour she notes is undervalued and unrecognized. The third instructor opts to work in education rather than the industry because of the serious material costs to being in games, including the gender pay gap and a lack of maternity leave. The fourth, a games artist, tells me she expects to eventually leave her more technical-focused education domain. These instructors demonstrate that coping strategies, particularly refusal, are not unique to the educational experience, but necessitated by women who have gotten into games across their careers.

More promisingly, while expressions of bravado and individualized responses to structural exclusion are common amongst students, we can see that collectivist actions such as women-focused spaces and initiatives provide students with alterative resources to draw on, enabling expressions of passion, commitment, triumph, and resistance rather than tolerance, isolation, or conformity. This enables repertoires for understanding the problems in games as structural rather than about individual lack, as articulated by this games writing student:

> ‘I've met a lot of those people here, fantastic, feminist men and strong women who will go into an industry and not put up with it. Basically, that's what we've got to do, is not put up with it and then it won't continue.’

What this consideration of games higher education reveals is that measures to increase the representation of women and other marginalized communities in tech need to recognize the cultures in which they are seeking to induct them. Efforts to ‘get in’ to spaces based on discourses of feminine lack fail to account for how these environments require marginalized people to undertake tremendous effort to develop strategies for coping with exclusionary norms to ‘stay in’. This ultimately leaves unchallenged the structures that maintain the more

visible problems of sexism, harassment, and exploitation in games specifically and potential tech more broadly. Opportunities for increasing diversity and fostering inclusion need to focus on rectifying the costs this currently entails, as at the moment studying and then working in games appears to depend on the degree of resilience of a given individual. In this configuration, only those who can tolerate the pain will not "leak" from the pipeline. We might think of these leaks as leads for critical inquiry, as suggested by Ahmed (2017), and consider imagining alternative metaphors that challenge rather than support what remain structures of exclusion.

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