


# COVID-19 PARTNERSHIP SURVEY: The Remote, The Hybrid, The Office

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## Introduction

The global pandemic marked a sudden shift to widespread remote work for many industries, including game development. However, as the pandemic begins to subside, it seems as though a return to the office is not inevitable. Rather, a number of game developers and the companies they work for are instead electing to either remain fully remote or explore means of hybrid development by splitting remote and in office work.

Expanding the results of the 2020 Developer Satisfaction Survey (Westar et al., 2020), this paper walks through the methods and results of a partnered research project between the International Game Developers Association and York University. It begins with survey data and interviews, culminating with recommendations for the future of remote and hybrid game development based on those findings. This project was funded by Canada's Social Sciences and Humanities Research Council (SSHRC) and titled "COVID-19: Assessing the remote production practices of Canadian and international game developers."

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## Context

Prior to COVID-19, many game developers worked in fast-paced environments that facilitated face-to-face communication and collaboration; after the pandemic took hold, those game developers found themselves isolated individuals reliant on quality webcams, stable internet, patient loved ones, and bosses tasked with laying off staff or canceling projects altogether (Informa Tech, 2020). In response to these emerging stories, the overall goal of this partnership project was, first, to assess the impact of COVID-19 on the production practices of game developers, specifically how they have had to modify their communication and collaboration methods to compensate for working remotely. The second goal was to identify and share any remote solutions and adaptations implemented by game developers that have proved useful to their professional needs. The partnership comprised: the International Game Developers Association (IGDA), the industry's largest non-profit membership organization serving approx. 10,000 individuals who create games, with a mission to support and empower game developers around the world in achieving fulfilling and sustainable careers, including during these very challenging pandemic times; and the research team of Dr. Rich Shivener (PI, York University) and co-applicant Dr. Elizabeth Caravella (York University). This project was funded by SSHRC's Partnership Engage Grants. These grants provide short-term and timely support for partnered research activities that will inform decision-making at a single partner organization from the public, private or not-for-profit sector.

The objectives of the partnership are relevant and significant to IGDA because they prioritized the organization's initiatives to advocate publicly on issues that concern members. COVID-19 has been a major issue for game developers, and thus, the IGDA was seeking more information about ways to empower its members facing the challenges wrought by COVID-19. For example, on May 14, 2020, IGDA and the mental health advocacy non-profit Take This co-hosted an all-day virtual conference on COVID-19, gathering more than 15,000 viewers ("COVID-19 Resources"). It also conducted a preliminary survey to gather data about the pandemic's impact on game developers (read ["Remote Work, Distractions, and Unemployment – IGDA's COVID-19](#)

[Survey Results.” 2020](#)). The partnership built on such initiatives by conducting mixed methods research and developing open-access support resources and content for public dissemination and seeks to better serve developers and convey to the public a number of professional challenges faced by those involved in various roles across game development.

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## Methods

This section details our methods of recruiting and surveying members of the IGDA for the partnership study. The findings discussed here also appear in a forthcoming article in *Communication Design Quarterly*, though that article links the results with their impact on the field of technical communication, rather than recommendations for game developers in particular.

## Data Collection

Participants for this study were recruited through IGDA member lists. Members received an email from IGDA with a link to the survey to be filled out via Google Forms addressing concerns in and around mental health and perceived productivity before and during the pandemic, as well whether or not developers saw a need to return to physical offices in order to improve either of the two areas. The survey itself recorded demographic information such as participants' age, gender, and occupation/title at their current company. Following the demographic information, participants were asked to rate their mental health on a 7 point scale, with 1 being “Very Poor” and 7 being “Excellent,” as they understood it both prior to and during the height of the COVID-19 pandemic. This question mirrored the IGDA's 2020 survey of its membership and its aims for hosting the 2020 Game Development Crisis Conference (“COVID-19 Resources”), and was included to see if there had been any significant changes since the initial transition into remote work; these comparisons are discussed in more depth in the results section.

In addition to the likert scale questions, the survey asked three open-ended questions for participant response:

1. In one word, how would you sum up your overall work experience during the pandemic?
2. A number of game developers have reported difficulties communicating/collaborating with their team(s) remotely (e.g., GDC's “State Of The Game Industry 2020: Work From Home Edition”). How would you respond to this?
3. Game studios have reported plans to return to the office, take on office-home hybrid models, etc (e.g., Ubisoft's report). Do you think a return to the office will increase productivity, and if so, why?

After the initial survey questions, participants had the option to provide an email address if they consented to be contacted at a later date for follow-up interviews. Once we had reviewed the survey data, we generated purposive samples of individuals who consented to follow-up interviews and sent out batch requests. These semi-structured interviews took place over Zoom

roughly two months after the survey was completed; participants were reminded how they had responded to particular questions and asked to elaborate, with follow-up questions aiming to gain more insight to the contexts and experiences their initial survey responses could only allude to. We close the results section with a brief walkthrough of 5 semi-structured interviews, as these interviews in conjunction with the survey results helped us determine what we believe to be the most useful recommendations for a sustained remote/hybrid approach to game development.

### *Analysis*

With regard to analyzing our survey data, we took a mixed-methods approach, as we wanted to see both patterns from the quantitative and qualitative data and how they worked together to craft a fuller picture of varied remote work contexts in which participants were working. In addition to the relevant statistical tests, we also performed word frequency analysis and sentiment analysis on the responses to the first question of the survey, quantifying some of our qualitative results in order to see patterns standard qualitative methods might otherwise miss, though we performed the sentiment analysis by hand rather than using software. We began this process using a grounded theory approach by categorizing responses to our first qualitative survey question above as either positive, negative, or neutral, but soon added a mixed and undetermined category, as some responses such as “half down/half up” appeared both positive and negative, rather than neutral, and others such as “busy” or “intense” were clearly not neutral, but also clearly not positive or negative. Three researchers coded the responses individually and then the team compared results to test for reliability; our codes were the same in 92% of cases, and we then had a collaborative discussion to finalize the remaining 8%. In most cases, our coding differences were between the neutral and undetermined category, as there was often overlap or a case could be made for either interpretation more readily than for the other category combinations. The following table provides an example section of this process:

**Table 1. Sample Sentiment Coding**

Response	Positive	Neutral	Negative	Mixed	Undetermined
Fine		X			
Prisoned			X		
Okay		X			
Good	X				
Quieter					X
Up & Down				X	

In our coding of the qualitative analysis, we categorized responses to each survey question based on common themes we noted while reading responses. For the second question

examining the pandemic's impact on communication/collaboration, responses fell into one of four categories: those who mentioned difficulties with remote communication/collaboration, such as not being able to have quick chats with teammates, those who did not find it difficult or even found it easier to communicate/collaborate remotely, usually due to the ease of access to messaging apps such as Slack, and responses that were either a mix of the two previous categories, or undecided. For the last survey question, we coded results to the final survey question based on if participants agreed with a return to the office as a means of increasing productivity, if they disagreed or thought that a return to the office would decrease productivity, if they opted for a mixed or hybrid approach to remote/office work, or if we could not tell their opinion based on the response. Finally, after quantifying the categories established for these two survey items, we performed a Pearson  $r$  and t-test to see if these specific responses indicated any relationships.

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## Survey Results

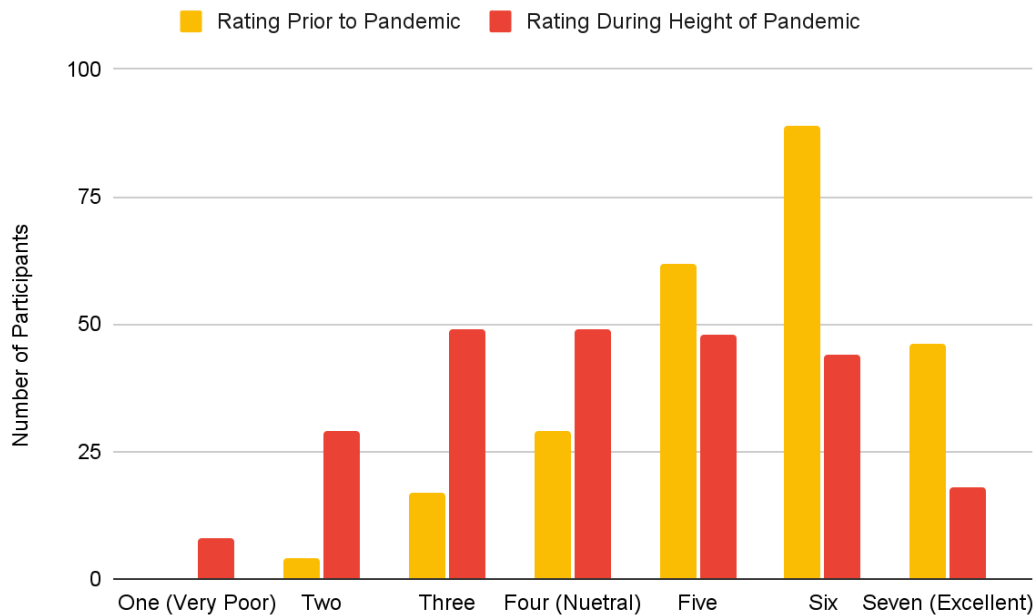
As previously noted, our study began with emailing a survey to all IGDA members and proceeded with follow-up interviews with those participants that indicated interest. In the future, we would like to collect more interview data to further expand these results and recommendations for the future of game development post-pandemic.

## Participants

A total of 246 members of the IGDA responded to the survey, but one response did not review the informed consent and their data was removed, leaving a final response rate of 245. Participants' ages ranged from 21 to 71, with the majority between 30-45 years old; 69% (169) respondents were male, 24% (59) female, 4% (10) nonbinary, and the remaining 3% (7) chose not to disclose gender. The age and gender spread matched the general profile of IGDA members as noted in the organization and Western University's 2020 Game Developer Satisfaction Survey (Weststar, p. 5-6; 2021), and thus is most likely an accurate representation of larger IGDA membership. Though respondents provided a number of unique role titles, these roles can be condensed into four categories, with 38% (93) supervisory or administrative roles such as project managers/directors, 37% (90) programming or development roles such as software developers, 17% (42) creative roles such as freelance artists, and the remaining 7% (17) academic roles such as professors or graduate students (the remaining 3 participants did not provide a title/role). That said, despite these four discrete categories emerging organically, roughly a third of responses held titles such as "Lead Art Director" or "Senior Project Manager/Developer," reflecting the fact that the boundaries between roles within game development are often porous, especially in the case of creative directors.

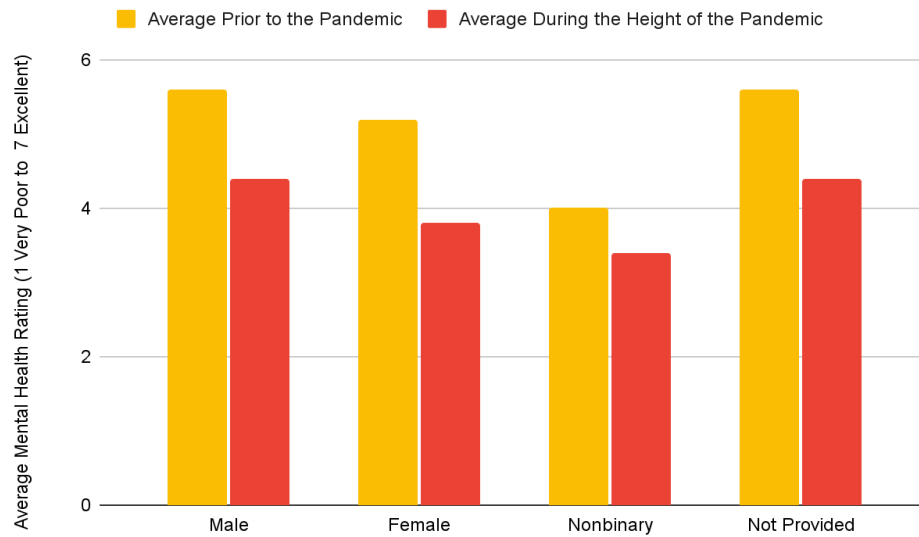
## Mental Health & Remote Work Experience

Illustrated by Figure 1 below, participants rated their mental health slightly lower during the height of the pandemic ( $M = 4.24$ ,  $SD = 1.58$ ) than prior to the pandemic ( $M = 5.42$ ,  $SD = 1.2$ ), indicating the pandemic as a likely cause of this dip,  $t(245) = -11.57$ ,  $p < .00001$ .

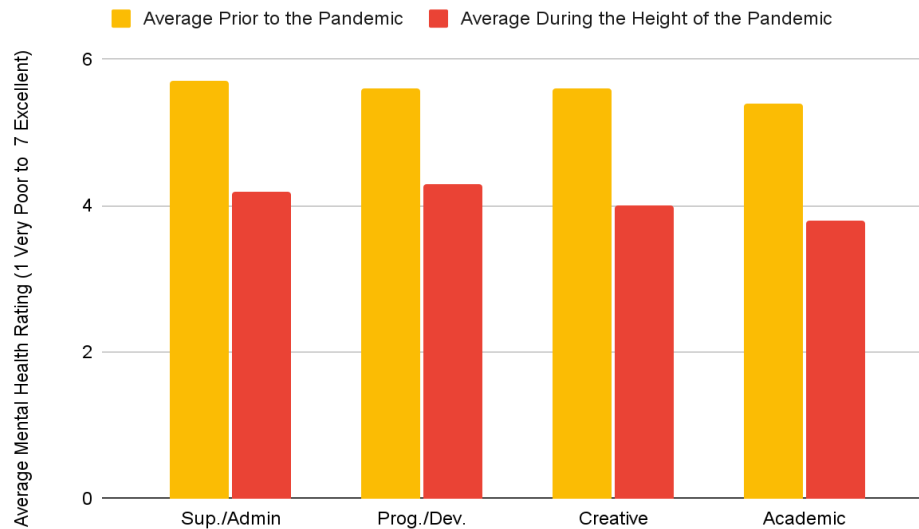


**Figure 1: Mental Health Ratings Prior to and During the Pandemic**

We also examined these results for differences based on gender across our 4 categories; each group's average prior and during means are provided in the graph below. Nonbinary respondents had the lowest overall mental health average prior to the pandemic at 4, or neutral, but the other three groups resulted in similar prior averages. Women and nonbinary participants reported a greater decline in overall mental health than men or participants choosing not to provide their gender, suggesting that the pandemic may have taken an additional toll on these groups in particular, as illustrated in Figure 2. We also compared these ratings based on the 4 larger job type categories. As shown in Figure 3, while there was a clear decline overall, there were no significant differences in the amount of decline based on occupation/role. Similar to the results of the 2020 Developer Satisfaction survey, overall mental health seemed to drop due to the pandemic. However, as we discuss in more detail below, based on the qualitative responses, the general belief of the developers surveyed was that the drop was not necessarily due to remote work conditions, but seemed to be more connected with the negative aspects of the pandemic itself (fewer means of socializing outside of work, larger health concerns, etc).



**Figure 2: Average Mental Health Ratings by Gender**



**Figure 3: Average Mental Health Ratings by Role/Occupation**

### *Word Frequency Analysis*

Moving to the open-ended survey questions, we used a mixed-methods approach to quantify some of our qualitative results in order to see patterns usual qualitative methods may miss (2009 article, Sierra & Eyman 2020). The first of our three survey questions asked participants to sum up, using only one word, their experiences working remotely; the following word cloud illustrates the most commonly used words, with good (13 instances), stressful (10 instances), great (9 instances), productive (8 instances), and remote (8 instances) appearing with the highest frequencies.





Despite the majority of respondents citing no issues, 28% (67) did report difficulties, especially with regard to managing teams, and 15% (37) noted a mixture, most often citing organization or managerial concerns as being the hardest to tackle remotely. As one respondent stated, “It’s really difficult with [internet] connection lag, people without fail talk over each other, and it breaks a flow. It feels transactional. Some people don’t like cam so turn theirs off and straight up don’t contribute, it becomes a lot of noise.” Speaking to two positions, another wrote: “In 2020 I worked for remote-only company and it was not causing much difficulties, at the end of 2020 I’ve started a new job in a company that was not remote-ready, so now it’s a bit complicated, especially with long meetings without any agendas.” The remaining 15% (35) responses were undecided as to if remote collaboration was more or less difficult. Despite the tendency to cite administrative concerns as a pain point, these percentages did not vary significantly when broken in role/occupation categories; that is, even when looking only at supervisory/administrative participants, the spread between categories did not suggest certain types of roles had more or less issues with communication and collaboration.

Our last survey question asked participants to weigh in on whether or not they thought returning to the office would increase productivity. Despite the slight decline in overall mental health and the 28% of negative responses reporting difficulties while working during the pandemic, 40% (96) responses did not think that returning to the office would increase productivity, and roughly 70% (67) of these responses even indicated that forcing a return to the office would decrease productivity. One respondent, for example, stated, “My own productivity will plummet as people can once again disturb me during tasks that require full focus.” Similarly, other responses noted things like less commute time and more control over their work hours/schedules as key reasons why they are more productive working from home than in the office.

Though they had been presented with information about the larger games industry moving to remote work, developers themselves seemed to be aware of some of the individual contexts of their remote work experiences, as 34% (81) noted that a hybrid or mixed approach, or, one that combined remote work with either some individuals going to the office or individuals only going to the office some of the time was how they thought productivity would best be maintained or increased. Only 23% (55) of responses agreed that returning to the office would increase productivity, but these responses tended to point to distractions at home, usually children or partners, as being the contributing factor to their lower productivity rate away from the office. As with the communication/collaboration difficulties, role or title did not seem to influence whether or not participants thought returning to the office would influence productivity. However, age does seem to be a contributing factor, as 62% (14) of the responses indicating a return to the office increasing productivity were over the age of 45. As one respondent in this age demographic reported, “[Returning to the office makes it] easier to make decisions and get answers in person. [It’s] [a]lso better for collaboration and inspiration.”

### *Statistical Analysis*

After breaking down the above responses, we performed a Pearson  $r$  correlation test to see if there were any statistically significant relationships between individuals who found it more difficult to communicate/collaborate remotely and those who thought returning to the office

would increase productivity. While there was technically a positive correlation between those that had difficulties communicating/collaborating and those positing that a return to the office would boost productivity, the overall relationship between these two variables is weak,  $r(244) = .457, p > .05$ . As no statistically significant relationship was found, this data suggests that despite some of the issues with remote communication/collaboration, the majority of game developers do not see being in a physical shared office space as essential to their productivity.

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### Interview Results: Going Deeper with Participants

This section features excerpts from interviews we began conducting after our survey closed. The mixed responses to our survey question regarding the difficulties of remote communication and collaboration opened our eyes to the varying ways in which game developers adapted to—and perhaps were already well-suited to work amid—the pandemic. Beyond revealing that the industry is divided about remote communication and collaboration, the answers to our open-ended questions show numerous mini-narratives about the workplace adaptations and the learning curves of adopting remote practices. One respondent, for example, wrote in: “Our company started using Zoom and Slack as a means to communicate with each other, and while we lost some of the niceties of being in person, like being able to whiteboard problems in a more organic way, overall our communication and collaboration have been well.” Another stated, “For me, communication in person is only slightly easier/quicker than a video call. Chat communication is fantastic for record keeping, but very time consuming!” Their responses echo those by game developer responses in the public sphere. As one anonymous developer told Matt Kim (2021) of the gaming news site *IGN*, there is “a bit of latency when artists are using a stylus and pad at home while remoting into their work computer to when it shows up on screen, people just being tired and burnt out of work being home and home being work.”

These mini-narratives in our study and beyond warranted a deeper investigation with interviews about specific tools and practices adopted by already remote or now-remote teams. Consider one audio director’s story about delivering audio-recording tools to voice actors of video games.

We basically created these systems with a computer system, a preamp, a microphone, everything self-contained, all pre-wired; the actors just literally open up the case....Once we built these rigs, [employees were] going to be scheduling, delivering, sanitizing, sterilizing, and scheduling all the delivery of these rigs. And now, we send out six to eight rigs a day. We bought a Prius that Molly, our head of operations, she’s delivering literally about 3,000 miles a month right now.

Consider also a creative director’s views on trying out virtual reality collaboration and communication. This creative director reports needing an alternative addressing thousands of messages on [Slack](#) per day. They value in-person communication, or some proxy of it.

I find that so much easier when I’m in a room with people, but I find it almost impossible to do virtually. And we tried so many things. We tried virtual whiteboards and whatever programs, and we’ve tried virtual meeting rooms that have you walk around. We tried

[VRChat](#); we tried a million things, but it's just not the same. And obviously on top of that, the actual social aspect of going for a coffee with someone or having lunch with someone and not only talking about work all the time is different. It's pretty profound how much I miss the social aspect of just being in an office together and meeting people in the kitchen and just standing there and talking about a weekend or something.

.... I think the proximity chat [features of VR] is very important. There's some other online tools that allow for proximity chat to be a thing. Like [wonder.me](#) is one, which is more of a video chat tool, but there is proximity so that you can move your little icon around in the space and depending on where you are, it's proximity based. But I just think it's important when you have a team that's bigger than 10 people, right? Because, otherwise, they can't have conversations.

That director isn't alone in trying to parse out or reconcile social and professional communication channels that get overcrowded. Here is another developer whose team has tried to divide those channels on Slack. This interview excerpt emphasizes how the team tries to mitigate feelings of being overwhelmed by messaging.

We also have tried to encourage voice and casual communication where we can. This is all still a work in progress. It's still kind of new trying to get a more casual connection, the sort of more organic connection through these tools that are very like, "you're connected or you're not, right?" A few ways that we do that is we have a basic thing where... Slack is sort of our official messaging platform that we all talk about back and forth between. We try not to make decisions in it, but we like, "Hey, I noticed this thing. Oh, what's going on?"

We have specific channels in [Slack] that are designed for social spam and stuff like that, where people just talk about whatever, pictures of their cats, the horribly gross thing that some pet just hawked up on the floor ... all of that kind of stuff or cool things that you did over the weekend, that sort of thing. But we do this where if something prompts more than a couple of messages, we try to encourage just kind of a jump in quick voice call.

Regarding the next steps of our study, interview-based narratives like these will parlay into case studies for future game developers and allied fields who are responsible for collaboration and communication channels in the industry.

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## Recommendations

As noted by the 2021 DSS report, all recommendations for game developers in either fully remote or hybrid workspaces need to address their local development needs. That said, based on our survey and interview data, we have provided three key areas we believe will generate the most success for those wanting to address the issues discussed above. Each one is discussed in turn below.

### *Focus on Social Support over Productivity Support*

Based on both the survey responses and interview data, the larger pain point for developer's working remotely seemed to be dealing with isolation rather than productivity concerns. Similar to the 2021 DSS, though some developers did report a slight dip in productivity (23%), the overwhelming concern and larger dip seemed to be mental health related. Illuminated by further interview data, it appears that the loss of socializing with coworkers in the office space and the difficulty of achieving ad-hoc or casual, non-work related connections was the largest difficulty developer's faced during the height of the pandemic. Some ways to address the need for socialization include connecting with your local IGDA chapter, participating in virtual group spaces, or building specific casual and/or socialization time between co-workers, either remotely or in person.

Two of the key features of the IGDA are [local chapters](#) and [special-interest groups](#) (SIGs) that provide social and professional development. For example, the IGDA's Seattle chapter promotes monthly events, such as its "Becoming" series held in partnership with the Diversity Collective +. Local chapters and SIGs are welcoming members on a continuous basis and have been viewed as crucial for maintaining social connections. These social connections could be particularly beneficial to solo, independent, and work-from-home developers. Even socially distant brainstorming and/or venting offscreen could offer benefits to developers' mental health, a welcome distraction from the myriad messages that accompany production cycles. However, we are reminded by the 2021 DSS that 49 percent of developers strongly disagreed that they feel "emotionally drained" and 70 percent of developers strongly disagreed that they "need more time for myself" (p. 23). Those who remarked as such have perhaps found more social connections and personal time outside of work due to fewer commutes, easing of pandemic restrictions, etc.. Thus, we encourage more association members to share their self-care approaches.

### *Allow Hybrid or Fully Remote Work as a Permanent Solution*

Overwhelmingly, game developer's did not express the need to return fully to the office to increase productivity and/or address some of the communication concerns discussed above. Rather, the majority of respondents noted that they would prefer to either remain fully remote or take on a hybrid office (74%) despite some of the difficulties and struggles with mental health. Coupled with the fact that the mental health dip seems more largely connected with suffering from isolation on the whole rather than only isolation from the workplace, this makes sense, as only 28% of developers reported difficulties or drops in productivity when working from home. In fact, developers noted that they felt a return to the office would itself create a larger dip in productivity than remaining remote or taking a hybrid approach, one with emphatically writing: "I will again have to sit through useless meetings and get interrupted every 5 minutes." Therefore, offices that would allow for both in person and remote work seem to have the best chance of addressing the needs and wants of both the developers who long for a return to the office and those who do not see the need to physically be in an office space to complete their work.

These discussions hold gravity when we turn to company reports and Informa Tech's game developer survey that precedes the annual Game Developers Conference. As BioWare general

manager Gary McKay wrote in a company blog post in January 2022, “Going forward, we’ll have new challenges with a hybrid approach to work and are focused on new tech that will help maximize collaboration and communication between onsite and remote people.” In Informa Tech’s survey, developers offered remarks such as “I see only positive things, less time commuting, less noise when coding” and “They are definitely going to get an awakening when people have to start actually commuting back to work and people have plans outside of the core hours of work” (p. 20-21). Simply put, transportation time and office space costs in major cities of game development are quite lengthy and expensive, so it’s imperative to consider permanent hybrid models.

### *Develop Additional Supports to Address Gender Specific Needs & Differences*

One of the biggest indications of both the Partnership Survey discussed here and the 2021 DSS report is the fact that remote work does not affect all developers equally. In particular, women and non-binary respondents seemed to not only report the largest dip in mental health, but they were also the most likely to report dips in productivity. Designed with our goal of honoring the time of game developers taxed in various ways by the pandemic, our survey was brief, including only five questions that developers could complete in 10 minutes or less. What was clear was that women and nonbinary developers saw more decline in mental health than men. This finding is no surprise to us, as women developers, for example, have long been facing an uphill battle for equality in the game industry (Hepler, 2017), not to mention facing a world where work and home lives have been inseparable (Cahn, 2021; Power, 2020). Recent scholarship and news articles about working women and COVID-19 continue to warn about disproportionate effects on those who aren’t white, male, and middle-class (Readon, 2021; White, 2021). As Judge (2021) argued in article about game development for *The Guardian*, “Black women from working-class families are already underrepresented in games studios, so for those graduating from state schools in 2020....there’s a significant mountain to climb before entering the games workforce, and it would be understandable if they’re already exhausted.”

When discussing this further in our interviews, the most common reason provided was having to juggle parental responsibilities while working from home. While we have some recommendations noted below to address this discrepancy, more research is needed to focus particularly on these groups to better develop recommendations for addressing this issue in particular. Our survey provided an in-road to understanding exhaustion and other mental health consequences in (post-COVID) game development and technical communication more deeply. If hybrid and remote workplaces become even more commonplace in the game development industry, future research questions might focus specifically on how women and marginalized developers are coping with the industry’s new normal. For example, we wonder if hybrid and remote workplaces will amplify the “refusal” strategies of games creators, like those in Harvey’s (2021) of students: “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” (p. 12). In short, changes can have consequences, for better or worse.

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### **IGDA Statement**

The International Game Developers Association (IGDA) is the world's largest nonprofit membership organization serving all individuals who create games. The mission of the IGDA is to support and empower game developers around the world in achieving fulfilling and sustainable careers.

The International Game Developers Association (IGDA) would like to thank the tremendous support of their actively engaged volunteer community, York University, and the researchers for their contributions to the development of the survey and this resulting report. Information about the impacts of the COVID-19 pandemic and remote work on game developers is critical to understanding how to best support the people within our industry.

The results of this survey show that game studio leadership need to carefully weigh the impacts of remote work on individual developers. Remote work can disproportionately affect women and non-binary developers, so special considerations should be taken to support mental health, caretakers, and other potential employee challenges – these include core work hours, optional social virtual spaces, team building events, and support for improved home workspaces.

## References

- Cahn, N. (2021, February 9). How women can take control in a post-pandemic world. *Forbes*.  
<https://www.forbes.com/sites/naomicahn/2021/02/09/how-women-can-take-control-in-a-post-pandemic-world/?sh=14223f2b4222>
- Harvey, A. (2021). Making the grade: Feminine lack, inclusion, and coping strategies in digital games higher education. *New Media & Society*.  
<https://doi.org/10.1177/1461444820986831>
- Hepler, J. B. (Ed.). (2019). *Women in game development: Breaking the glass level-cap*. CRC Press.
- Judge, A. (2021, February 8). Could the pandemic make the video games industry even more white and middle-class? *The Guardian*.  
<https://www.theguardian.com/games/2021/feb/08/could-the-pandemic-make-the-video-games-industry-even-more-white-and-middle-class>
- McKay, G. State of BioWare and Looking Ahead. *BioWare*.  
<https://blog.bioware.com/2022/01/06/state-of-bioware/>
- Power, K. (2020). The COVID-19 pandemic has increased the care burden of women and families, *Sustainability: Science, Practice and Policy*, 16(1), 67-73, DOI: [10.1080/15487733.2020.1776561](https://doi.org/10.1080/15487733.2020.1776561).
- Readon, S. (29 March 2021). Pandemic measures disproportionately harm women's careers. *Nature*. <https://www.nature.com/articles/d41586-021-00854-x>.
- Weststar, J. (2021). Developer satisfaction survey 2021: Report on the impact of COVID-19.  
[https://igda-website.s3.us-east-2.amazonaws.com/wp-content/uploads/2021/07/31184838/IGDA-DSS-2021-COVID-Report\\_July-18-2021-1.pdf](https://igda-website.s3.us-east-2.amazonaws.com/wp-content/uploads/2021/07/31184838/IGDA-DSS-2021-COVID-Report_July-18-2021-1.pdf)
- White, S. (2021, June 4). Women in IT are burned out. The pandemic is making it worse. *CIO*.  
<https://www.cio.com/article/3620897/women-in-it-are-burned-out-the-pandemic-is-making-it-worse.html>