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NASEF Y4 Research: Diversifying Student Participation
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The calls for increased diversity in esports – and the STEM fields that esports participation often leads into — have been ongoing for several decades; however, these areas still struggle to have representative participation (Kricorian et al, 2020; Ruberg, 2019). In an effort to contribute positively to diverse representation in esports and esports organizations, the following list of recommendations has been compiled by researchers at Games+Learning+Society center at the University of California, Irvine. Through this report, we identify four areas to help expand the reach of NASEF's efforts and to increase the diversity of their programming. These include providing pathways for underrepresented people through highlighting all of the roles that they can take in esports; providing paid opportunities for students that need to support their families outside of school; creating a spotlight for representation in esports through highlighting successful esports professionals from diverse backgrounds; hiring diversity, equity and inclusion outreach specialists to provide outreach and conduct research with underrepresented populations in order to identify the barriers these communities face to participation in esports; and by establishing partnerships with existing organizations dedicated to expanding diversity in games, esports and STEM. Taken together, these initiatives will help NASEF achieve their goal of providing a space that is welcoming to all students.

Providing Pathways for Marginalized Groups

One of the critical career paths for underrepresented communities seeking opportunities in the video game workforce is internships or apprenticeship programs. Game development and esports careers currently do not have direct structures for hiring new employees or a talent pool of diverse mid-level candidates. Unlike other industries, gaming professionals do not have a clear path to success from the mailroom to the board room or from intern to CEO. Additionally, standard entry-level roles like quality assurance testers are usually outsourced to third party vendors. With the industry's new emphasis on diverse talent acquisition, particularly within companies in California, NASEF should focus on building recurring relationships with publishers, esports agencies, gaming studios, and others to propel diverse talent towards becoming the next generation of gaming leaders. Internships serve as a pipeline for current students or individuals looking for their first step into gaming and esports. Alternatively,

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apprenticeships may prove helpful for individuals who may have 40-60% of the qualifications needed and can serve on a one-year contract to develop the skills required for continued success in the industry. These formats will ensure a return on investment in building a diverse talent pool while working towards a more inclusive and equitable esports workforce.

Paid internships also provide opportunities for students to focus on the activities and career pathways that are most relevant to their goals and aspirations. Oftentimes, summer periods are the most critical for students who originate from working class communities, especially from an intervention perspective. The more opportunities we can give students to be occupied in activities that build skill or advance their goals, the better chance we have of keeping students from the influences of criminal street gangs, drug use, and detrimental behavior. Students who are not afforded paid internships have to divert their attention to wage earning opportunities to assist their families with bills and living expenses. It is also the case that many such students take on parental roles and responsibilities while parents work. Providing paid internships allows the student to not have to be forced to worry about an income source while trying to learn. In other words, paid internships relieve the stress of having to survive and therefore allow the student to focus on the activities that are most important and rewarding for them.

Provide Accessible Hardware to Low Income NASEF Implementation Sites

The COVID-19 pandemic changed the way people interact with, adopt, and utilize technology on a global scale. Access to technology and hardware is more critical than ever, especially for low-income schools, community centers, and civic spaces. A crucial path for NASEF to expand on its current diversity, equity, and inclusion efforts is to create better physical access to safe and equitable gaming spaces. The World Economic Forum (WEF) report states "that technological adoption will impact workers' jobs by displacing some tasks performed by humans into the realm of work performed by machines" (2020). As emerging technologies surface, new jobs and the technical skills needed for those roles will increase in demand while eliminating obsolete positions. Further, the WEF continues by stating "data from the Forum's Future of Jobs Survey shows that companies expect to restructure their workforce in response to new technologies." Workers will need to upskill and reskill to find success in a knowledge-based economy. Esports provides a multi-faceted medium to teach the skills needed to fill the demand of these new roles and provide opportunity for those who have been traditionally underrepresented in the STEM workforce. The access to quality materials and hardware are crucial components of a multi-pronged approach for addressing the complexities of increasing diversity, equity and inclusion for marginalized groups.

Establishing physical spaces equipped with both loanable gaming, podcasting, streaming and computing equipment can provide avenues to close the gap on technology literacy, skills, and training. Palmer, Maramba, and Dancy (2011) highlight the importance of having the necessary resources to achieve student academic and skill development. The research points out that many schools located in marginalized communities cannot afford up to date "laboratories, instructional material, and technology" causing a digital divide between affluent and underprivileged students. The digital divide has become a particularly salient issue as covid has

exposed how vast and deep this issue is for students who live in working class communities. Statistics from the National Center for Education Statistics' National Assessment of Educational Progress (NAEP) depict the stark reality for these students where "nearly 16% of eighth-graders overall, and almost a quarter of eighth-graders who are poor, don't have a desktop or laptop computer at home on which to follow their classes (Emma García et al., 2020)". This digital divide can have lasting effects on the opportunities afforded to students from these groups, effects that NASEF is well-positioned to ameliorate through its partnerships, resources, and community.

These alliances can be leveraged to expand access to the technology resources (and digital literacy skills) students need to participate not only in competitive esports but also beyond, in the domains that NASEF clubs and student roles represent. Leveraging its social capital to raise money for technology infrastructure for diverse individual students and the community centers that support them, may be one lasting contribution to the student population it serves.

Although students need equipment to participate in NASEF activities, continued support and dedicated avenues for establishing connections to underserved communities is pivital for the lasting success of NASEF efforts. It is recommended that the organization identify key partnerships with existing community efforts and or other institutions. For example, organizations such as Homeboy Learning Works, Homeboy Industries, Boys and Girls Club and City Year, as well as local churches, tribal schools, BIE schools, community centers and community colleges, can prove beneficial, logistically and administratively, for the day-to-day efforts of NASEF initiatives. These strategic partnerships can allow NASEF to leverage resources and community insights as well as eliminate duplicate work in the communities it is attempting to reach. Such alliances can also enable NASEF to inspire and impact populations it might not otherwise have, such as students with IEP's (Individualized Education Program), disabilities, dropout, aged out, and previously incarcerated or gang affiliated youth (See Homeboy Learning Works).

Spotlight Diverse Representation in Esports

Through a series of public-facing campaigns, NASEF can recruit diverse talent through promoting current diverse leaders in the esports field. Through coordinated activities and commitments, such as posters in high schools, educational activities after school, or marketing leaders to esports clubs, NASEF can position underrepresented communities for future growth and success. Highlighting today's diverse esports champions through a series of posters, literature, and recorded webinars will demonstrate to underrepresented communities that they too can envision a career in gaming and esports. By highlighting talented, diverse industry leaders, students can visualize their next steps and aspire to work towards similar roles. These actions also have the potential to provide students with a form of social capital that may not have been previously afforded to them. The ability to expand a student's network of gaming professionals can greatly impact the chances of opportunities and NASEF is well positioned to be the catalyst for these opportunities. A coordinated marketing campaign can include

workshops at school assemblies, creative materials posted in schools, and Ask Me Anything style after-school programs with esports talent.

Enlist Expertise to Research and Redress Barriers to Participation

Diverse participation often requires a diversity of approaches. Hiring a team of community outreach specialists and researchers with backgrounds or training in culturally responsive and equity focused techniques could vastly increase participation by, and recommendations for, accommodating underrepresented communities and populations (Meléndez et al, 2018; Redd, Andrews, & Abdi, 2020). Since NASEF is, at root, an educational program, it would make sense to model these approaches after previously successful programs in educational and afterschool program community outreach (Vossoughi et al, 2020; Meléndez, 2018; Redd et al, 2020). This would help obviate "one size fits all" framings that often only serve to reinstate existing inequities and social imbalances (Barnes & Schmitz, 2016; Vossoughi et al, 2020). A successful team of community outreach specialist would be able to:

- Identify existing community programs with which to partner (such as those listed above).
- Help raise awareness in underrepresented communities of potential NASEF partnerships and engage their participation by identifying and overcoming barriers to participation.
- Identify supply line gaps (such as access to technology) that prevent participation and make recommendations for how best to close these gaps.
- Identify and recruit community leaders of various ages with the ability to organize and maintain engaged and thriving community groups.
- Organize and provide venues for community members to voice their needs and interests.
- Identify potential "feeder" activities such as community gatherings and events at which Esports mini-tournaments could be held, providing a route to more long term Esports involvement for populations previously unaware of or unable to participate.
- Diversify and advertise what "counts" as esports to help overcome perceived barriers of what counts as an esport or who counts as a "gamer".
- Conduct targeted research with non-dominant communities to identify further recommendations for expanding diversity in esports.

Continue to Expand Interest by Diversifying Games

There is an overwhelming perception that "gamers" conform to a particular stereotype: young white or Asian men who play first person shooters, real time strategy, MMORPG, and other fast-paced battle-oriented games (Chess, 2017). Esports is particularly known for games such as *League of Legends* and while a broader diversity of games such as puzzle games like *Tetris* and building games like *Minecraft* are often underrepresented, rarely broadly perceived as falling under the umbrella of an esports at all (Willingham, 2018). To increase diverse interest in esports, a broader diversity of games and game genres should continue to be promoted and publicized.

In an announcement earlier this month, in regard to NASEF's new *Diversity and Non-discrimination Policy*, the organization made it clear that the games played through NASEF associated clubs should reflect the organizations values. This is something that collegiate esports organizations have had to tackle for the last decade as well. "...One of the important factors you want to consider when choosing a particular title is whether or not that title is going to accurately represent the values and missions that you hold as a university" (Shelton & Haskell, 2018). In keeping with NASEF's 2019 blog post entitled "Choosing Games for Competition," Shelton and Haskel recommend using the ESRB rating system as a simple and consistent way to guide appropriate game selection, yet this is only one among many possible strategies for deciding what games are appropriate for the audience playing them and for the sensibilities of the communities supporting them.

To facilitate a more robust consideration of titles we recommend the following:
1. Do consider games without intentional peer-against-peer competitive elements
2. Do consider titles with the following ESRB ratings: Everyone, E10+, and Teen (or up to PEGI 16)
3. Do pay considerable attention to the following ESRB content descriptors as they may be inconsistent with NASEF's values: Blood and Gore, Intense Violence, Real Gambling, and Sexual Violence & Strong Sexual Content
4. Do allow for deviation and exceptions to be made from these considerations.

By opening consideration to other titles that might not traditionally be considered competitive, the program becomes open to a more diverse array of students. By using ESRB ratings that generally fall within the age range of participants, and avoiding specific content descriptors, NASEF avoids conflicts with parents and other community members who might be concerned with the content of the games being played. While this excludes games with large and storied communities and narrows the pool of interested students, it also allows the program to generate more buy-in from community members. The allowance for deviation and exceptions to these basic considerations builds in flexibility in cases where students' interests might not align. There are cases where students might prefer a more violent game for reasons unrelated to the rating, such as consistency, strategy variation, or netcode. If student engagement is paramount, interest is necessary.

Expand NASEF's Career Pathways Program

Promotion of diversity and inclusion initiatives should push beyond the boundaries of the experiences that students have at their schools, well into their careers. Whether students choose to attend university, master a trade, or work elsewhere, NASEF's career pathway should be expanded in ways that help facilitate the development of the pathways students might take. With this in mind, we recommend the following expansions of NASEF's current career pathways programme:

1. Support for the development of strong application materials (Resume, Portfolio, and Reel) and interview skills for each facet of Esports Ecosystem Diagram, including Strategists, Organizers, Entrepreneurs, and Content Creators alike.
2. Soliciting professionals from each topical area to mentor students and thereby increase their understanding of where they can improve their work, materials, or skills to better fit into a developing esports ecosystem.
3. Facilitate small-group Resume and Portfolio Review to assist students with representing their experiences in NASEF (like CTE certifications) to a professional or academic audience.

By improving on key aspects of NASEF's current robust career pathways programme, we can prepare students for professional internships and job applications, effective both in and out of university. Building connections and getting advice from professionals will ensure that students trust the information they are given. Students should leave NASEF programs not only with a high quality secondary education and professional skillsets but also with a knowledge of how to make those skills visible to academia and industry. Whether it be resume, portfolio, and reel development, or individual CTE programs that grant exposure to fields and techniques, experiences should be widely available and engaging, applicable well beyond the scope of higher education and industry, and – most importantly – of value to students who need them.

Conclusion

The recommendations listed herein are intended to support NASEF in its goal to increase diverse participant participation across its programs. Such changes are well aligned with current NASEF practices and ongoing efforts to ensure that ALL students have the opportunity to build on their passions for esports in ways that pay off in their out-of-game lives. A final recommendation to expand NASEF's current robust program partnership initiatives is to cultivate relationships with established stakeholders in the community. The Appendix provides a comprehensive (albeit not exhaustive) list of foundations, organizations, and associations working diligently in the United States and internationally to encourage, foster, and promote diversity, equity and inclusion initiatives. With aligned agendas such as these, partnerships among such entities offer real promise to diversity booth esports and the STEM fields to which they connect.

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APPENDIX: Potential Sites of Outreach for Underrepresented Communities

- **AIAS Foundation:** Founded in 2010, the Academy of Interactive Arts & Sciences Foundation's mission is to advance an inclusive worldwide interactive entertainment

creative and business community through collaboration, education, and professional development.

- **Varsity Esports Foundation**: Founded in December 2018 the Varsity Esports Foundation was created by a group of Esports professionals from the Kansas City area. The Foundation brings unity to the Esports industry as the first non-profit built from necessity. The Esports industry has been and will continue to grow faster than expected. The foundation works to be proactive through its initiatives and leading the next generation of gamers, Generation E.

- **IGDA Foundation**: The IGDA Foundation focuses on improving the lives of game developers by making game development a more diverse and inclusive community. IGDA wants every person on the planet to love playing games, and thinks the best way to make that happen is to have a game development community that is inclusive of, and welcoming to, every person who wants to make games. IGDA believes that diversity of all kinds in game development leads to better and more successful products and companies, and happier and more successful game developers.

- **GameHeads:** Based out of Oakland, CA, Gameheads uses video game design, development and DevOps to engage, prepare and train low-income youth and youth of color ages 15 to 24 in the Bay Area for careers in the tech and video game industries. Through a powerful medium that youth are familiar with and passionate about, our students learn how to code, design, manage projects, work in teams, lead, and create interactive projects that tell stories to enrich us all. In the process, they are also graduating from high school, getting into college to pursue STEAM-related degrees and preparing themselves to enter the tech and video game industries.

- **Global Game Jam:** The Global Game Jam® (GGJ) is the world's largest game creation event taking place around the globe, typically at physical locations. A "game jam" is essentially a hackathon focused on game development. It is the growth of an idea that in today's heavily connected world, we could come together, be creative, share experiences and express ourselves in a multitude of ways using video games – it is very universal.

- **ESA Foundation:** Two decades ago, the video game industry's pioneers created the ESA Foundation to showcase the many ways in which software technologies can help solve social and global issues. Since then, the Foundation has supported programs that harness the power of the video games to benefit students, schools, and charities, with the ultimate goal of improving the lives of America's youth and setting them on the path to productive and fruitful careers.

- **Women in Games International:** Women in Games International (WIGI) is a 501(c)(3) nonprofit organization based in Los Angeles, California, with a mission to cultivate resources to advance economic equality and diversity in the global games industry.

- **Latinx in Gaming**: Latinx in Gaming connects Latines across the gaming industry worldwide to promote cultural appreciation and representation in games and related content, providing a platform for Latinx community members to elevate each other and themselves.

- **Pixelles**: Pixelles is a non-profit organization dedicated to empowering more women to make and change games, founded by Tanya Short and Rebecca Cohen-Palacios. Pixelles organizes free monthly workshops, a mentorship program for aspiring women-in-games, game jams, socials and more. While committed to helping women in game dev, many of their programs and events are open to the community no matter your age, orientation, gender, or background – no experience or programming knowledge required.

- **Code Coven:** Code Coven aims to be intrepidly daring, providing marginalized developers with the skills and confidence needed to thrive in the games industry.

- **TakeThis:** The TakeThisMission is to decrease the stigma and increase the support for mental health in the game enthusiast community and inside the game industry. Their Vision is a game community that welcomes and supports people experiencing mental health challenges, and that recognizes the humanity and mental health of game creators.

- **Native Girls Code:** funded by Seattle based non-profit Na'ah Illahee Fund, introduces young Indigenous women (ages 11-17) to technological skills, careers and academic fields. It involves not only skill building for entrance into technological fields, but also supports and emboldens our participants to become innovators and change-makers who change the ways that technology is made, and evolves.

- **Gay Gaming Professionals:** GGP is a leading organization of lesbian, gay, bisexual, and NNtransgender game industry professionals and enthusiasts from around the world. Since 2006, their mission has been simple: to promote, cultivate, and unite the professional LGBTQ+ community with results-based content and programs focused on 4 key areas: Education, Expertise, Employment, and Entrepreneurship.

- **Homeboy Learning Works Charter High School:** Learning Works@Homeboy serves as a re-entry site for all the youth Father Greg Boyle, Homeboy Industries founder and Executive Director, visits in the juvenile probation camps and detention centers. In the context of our partnership with Homeboy Industries, we are the perfect school for youth being released from these camps.