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IT'S GAME ON FOR ESPORTS IN EDUCATION

Rapid growth for video gaming in both K–12 and higher education is helping schools to improve student engagement and boost recruitment.

EXECUTIVE SUMMARY

Video games have changed immensely over the years, and so have the people who play them.

Having been popular among young people for decades, video games are now a legitimate global phenomenon experiencing explosive growth. Studies show that overwhelming majorities of teenagers and young adults play video games, and various projections estimate that the esports industry will become a multibillion-dollar market in the near future. Even that term — "esports" — may be unfamiliar to many midcareer education professionals, and some might be tempted to dismiss the activity as a fad or a waste of time. However, a growing number of high schools and colleges across the country are implementing their own on-campus esports programs to capitalize on student interest, increase students' engagement and sense of belonging, and (in the case of colleges and universities) entice prospects to enroll.

Supporting an on-campus esports program requires a mix of existing technologies and new investments. Perhaps even more than technology, though, a successful esports initiative needs the enthusiastic backing of school staffers (including IT professionals, educators and even athletic directors), as well as a solid plan for rolling out the program and supporting it over time.

Get Started: An Introduction to Esports

For people whose worlds rarely bump up against Fortnite or League of Legends — a group that, in all honesty, likely includes a large percentage of K–12 and higher education instructors and administrators — it can be frankly shocking to learn just how large esports has grown in recent years.

According to a 2018 report from Goldman Sachs, the global monthly esports audience is estimated at 167 million people — larger than the audience for either Major League Baseball or the National Hockey League. By 2022, the report estimates, that number will reach 276 million, making esports competitive with the National Football League in terms of viewership. And while gamers have historically played against one another in informal settings like living rooms and basements, esports leagues have emerged and grown in recent years, bringing a measure of standardization and even professionalism to video game competitions. A professional League of Legends league, for example, has drawn sponsorships from brands such as Geico, State Farm, Nissan and Coca-Cola; the 2018 world championships distributed more than $6 million in total prize money and attracted nearly 100 million viewers.

Forward-thinking K–12 school districts and higher education institutions have gotten in on the action, creating esports programs that range from informal after-school clubs to scholarship-granting varsity college teams. For the moment, there's still an opportunity for high schools and colleges to be early adopters of esports. However, if schools haven't implemented programs just a few years from now, they'll likely find themselves playing catch-up with their peers.

What Is Esports?

If educators are familiar only with video games from dorm room PlayStation battles or the occasional visit to an arcade, they may not understand what all the esports fuss is about. But that's a bit like seeing a group of 12-year-olds playing an informal game on a playground hoop and then dismissing the entire game of basketball as "not a *real* sport." The term "esports" typically refers not to casual gameplay, but rather to contests among serious competitors — often organized into teams and playing multiplayer games that require strategy and coordination.

Aside from the digital component, one factor that differentiates esports from traditional athletics is the sheer number of video games available to play. In esports, leagues can incorporate several different video games or be organized around a single game. Another aspect that sets esports apart is the way that competitions are staged. In some cases (especially larger tournaments), esports participants travel to each other's homesites or compete at a neutral location. But, because video games can be played online, teams often compete against one another without either team ever leaving its home campus.

It's only recently that national media have begun to pay attention to the phenomenon, but high schools and colleges across the country have been quietly building up their esports programs for several years.

K–12 Esports: Getting in the Game

Several national esports associations, including the High School Esports League and the North America Scholastic Esports Federation (NASEF), have emerged to help schools support their esports programs and organize competitions. Additionally, a number of states have their own esports governing bodies, some of which organize state championship tournaments. It's difficult to pinpoint exact participation numbers, in part because those numbers are growing so quickly. From 2017 to 2018, the number of schools represented by HSEL exploded from around 200 to more than 1,200.

Esports is even making its way into the high-school curriculum. NASEF, for one, has developed four high-school English language arts classes centered on gaming. The classes, which have been approved by the University of California, each cover one aspect of the video game industry, with topics including game design, marketing and entrepreneurship. The group is also working on a career technical education curriculum and is field testing several middle school curricula.

College Esports: Conquering New Levels

Esports has grown so quickly in higher education that some observers are calling the activity "the new college football." Several national associations have popped up to help govern college esports, the most prominent of which is the National Association of Collegiate Esports. While NACE focuses on varsity collegiate esports, an organization called Tespa helps to forge connections among college student gaming clubs across the country. At the most recent count, NACE included more than 3,000 student-athlete participants at more than 130 member schools. Tespa, meanwhile, has more than 270 chapters and more than 102,000 members and alumni. The pace of growth is dizzying. When NACE was founded in 2016, only seven colleges and universities in the U.S. had varsity esports teams.

Smaller colleges have seemingly been quicker than large universities to adopt esports, in part because gaming offers a more level playing field between institutions than more established sports. A recent ESPN listing of varsity esports programs is dominated by schools from NCAA Division II and Division III, as well as the National Association of Intercollegiate Athletics — institutions including Bellevue University, Illinois College and Missouri Baptist University. While these schools could never hope to compete with the Alabamas and the Dukes of the world in major college football and basketball, esports offers them an opportunity to stake an early claim in a booming new area.

$3 billion

The estimated annual total revenue that will be generated by esports in 2022 (nearly half of which will come from media rights), up from $655 million 2017[1]

Source: [1]Goldman Sachs Group, "Esports: From Wild West to Mainstream," October 2018

> **"There's a reason why there's a stereotype of gamers as basement dwellers, and that's because gaming has historically been a very lonely activity. Instead of being loners, now they're a part of a community. They're contributing to the school ecosystem, and what they're passionate about is being rewarded. These previously disenfranchised young people are being accepted — and, in some cases, celebrated."**

— Steve Jaworski, General Manager, High School Esports League

Some schools have found esports to be a driver of recruitment (an increasingly important factor as the number of college-age students in the U.S. has dwindled since peaking in 2013). After "Good Morning America" aired a segment about Ashland University's esports program (before the school's teams had even competed), the Ohio institution received applications from 500 prospective students — nearly enough to fill out an entire freshman class.

Esports 101

Don't know Minecraft from Super Mario Bros.? Here's a primer on some of the most popular esports played at the high school and collegiate levels:

Fortnite: This battle game took the gaming world by storm when it was released in 2017. Most educators in both high school and higher education have likely encountered their share of bleary-eyed students who've lost sleep to Fortnite binges.

Hearthstone: A turn-based card game between two opponents who use their card decks and selected heroes to try to reduce each other's health rating to zero.

League of Legends: A massively popular multiplayer battle arena game first released in 2009. Much of esports — at the high school, collegiate and professional levels — revolves around LoL.

Overwatch: A multiplayer game where teams work to secure and defend points of control or escort a payload.

Paladins: Champions of the Realm: A multiplayer game where teams race to capture the map's central point.

Rocket League: One source described this game as "soccer, but with rocket-powered cars."

Smite: Battleground of the Gods: A third-person battle arena game where players control such characters as Zeus and Mercury.

Super Smash Bros.: In this series of crossover fighting games from Nintendo, players can wage battle between characters such as Mario, Luigi, Bowser, Link and even Pac-Man.

Level Up: The Technologies Needed to Support Esports

Compared to most traditional sports, an esports program requires relatively little investment by schools in the way of facilities and equipment. While it's certainly possible to blow through a big budget by building out a state-of-the-art gaming arena, the barriers to simply enter the esports space — especially for a small trial or pilot program — are relatively low. Unlike with traditional athletics, high schools and colleges can get an esports program off the ground without building a gym, pouring an all-weather track or dedicating acres of open space to playing fields.

However, this doesn't mean that schools should merely buy a couple of gaming consoles and let the students set them up. At a minimum, esports participants need the gaming version of cleats — basic equipment that allows them to compete on a level playing field with participants from other schools. In esports, this means equipping participants with powerful computers, gaming-specific peripherals, ample connectivity and even ergonomic furniture that is specifically designed for gaming.

Computers, Graphics Processors and Monitors

- **Computers:** Different video games require different levels of processing power. Some can be played on a regular consumer-grade laptop connected to Wi-Fi, while others need powerful desktops with a hardwired Ethernet connection. A number of vendors now produce computers specifically designed to accommodate gaming, including MSI, Acer and ASUS. In some instances, schools may be able to facilitate esports with existing machines, but it's best to consult with a third-party IT provider, an esports association or league, or even another school that has successfully implemented esports to learn about the requirements of a given game.

- **Monitors:** Here again, different types of hardware are best suited to different types of games. Historically, gamers have been forced to choose between the speed of 144-hertz twisted nematic displays and the outstanding picture quality of (generally slower) in-plane switching screens. Now, though, some monitors combine an IPS screen with a 144-hertz refresh rate, giving gamers the best of both worlds. PC Gamer calls 2560x1440 resolution the "sweet spot" for high-end gaming. "It offers substantially more pixels than 1080p without being as

"It is a very low–cost activity to get started on your campus. One reason people are making esports into a varsity program is because it's an enrollment driver, and a lot of these students are interested in STEM fields and computer science. That's why schools are taking the jump."

— Layne Shirley, Esports Director, National Association of Collegiate Esports

demanding as a 4k panel, meaning games look sharp at 27 inches but won't bring a good GPU to its knees," the publication writes.

- **Graphics cards:** An upgraded graphics card can sometimes turn an existing computer into an esports machine or extend the life of a gaming computer that has aged its way toward obsolescence. The fastest graphics cards retail for over $1,000, but a number of cards in the $200 range offer performance levels that will meet the needs of most gamers. Schools that aim to update their gaming computers with graphics card upgrades should make sure that the machines' power supplies can support the new GPUs.

Money in Play

As of December 2018, NACE member institutions offered $15 million in esports scholarships and aid. Here's a small sampling of the schools offering financial incentives to esports participants:

- Ashland University in Ohio, which competes in seven different esports games, offers annual esports scholarships of up to $4,000. Players also receive a backpack, jersey, jacket, keyboard, mouse, mouse pad and headset.

- Illinois College offers scholarships of between $15,000 and $20,000 for League of Legends players. Financial awards are based on ranking and team play.

- Juniata College in Pennsylvania offers esports scholarships of up to $2,500. The awards are meant to recognize not only engagement with the esports program but also students' contributions to their schools and communities, as well as academic excellence.

- Alongside esports, Schreiner University in Texas offers several other nontraditional varsity sports, including bass fishing, equestrian and riflery. Varsity esports participants receive scholarships of at least $10,000 per year for up to four years.

- Texas Wesleyan University offers 12 esports scholarship of $2,000 each, based on tryouts. Team members are expected to participate in film reviews, leadership skills development sessions, study halls and workout sessions.

Gaming Peripherals and Furniture

- **Peripherals:** Successful esports play relies on precision, timing and communication — all of which are enabled by gaming peripherals such as mice, keyboards and headsets. Even if participants are playing on standard PCs, schools should outfit teams with peripherals that will help them to be competitive. Gaming keyboards are typically more durable than regular keyboards and have mechanical keys (as opposed to rubber domes and membranes) that respond more quickly to a player's input. Gaming mice are designed to be more sensitive, reliable and comfortable than regular mice, and have additional buttons to facilitate gameplay. Gaming headsets come with microphones to allow teammates to communicate and may have additional features such as surround sound.

- **Furniture:** Gaming furniture has come a long way since the video rockers that sat in front of seemingly every dorm room television in the early 2000s. Today's gaming chairs typically resemble something of a cross between a professional office chair and a race car seat, with adjustable headrests and ergonomic pillows, reclining capabilities and sharp designs.

Network Infrastructure

Often, an education institution's existing network infrastructure is enough to support esports play. Some colleges and universities, however, have built out practice spaces with their own dedicated internet pipes. At the K–12 level, IT administrators may need to make firewall adjustments and whitelist video games during after–school hours, if current filtering policies prohibit them.

Boss Level: Build Your Esports Program

Creating a successful esports program isn't merely a matter of buying the right games, computers and other equipment. Schools need to recruit players, build a team culture, get buy–in from athletics officials and other staffers, hire coaches, organize competitions, and take care of all of the other tasks that are associated with the implementation of any new sport on campus.

Organizing K–12 Esports

One of the most critical steps at the K–12 level is to find at least one staff member who is enthusiastic about leading an esports program. While many high school teams receive remote coaching through esports leagues or associations, an onsite staffer is still needed to lead meetings and practices, establish and enforce

norms and rules, and help turn a collection of individual players into a cohesive team. It's likely that a number of faculty members are already avid gamers, and schools can often find an interested staffer simply by asking around. HSEL recommends asking technology teachers first and then branching out from there.

Some larger school districts form their own esports leagues. Fresno Unified School District in California, for example, created a league for the district's 12 high schools to compete in the game Rocket League. This gave the district more control and standardization, allowing officials to provide the necessary infrastructure and support to each school's esports program. However, many districts have only one or two high schools, making such an arrangement impractical. In these cases, esports program leaders will want to connect with existing statewide or national leagues to explore possibilities. This can happen before or after officials decide which esports students will play — another important decision point. If a vocal contingent of students is clamoring to create a team in a specific esports game, such as League of Legends or Overwatch, that might influence a school's choice. Or, schools may simply compete in the esports offered by the league they join.

During this period, or shortly afterward, esports program

84%

The percentage of teens who have access to a gaming console at home[2]

leaders should recruit interested students and also establish meeting times and practice schedules. (Unlike most traditional sports, esports teams don't always meet daily.)

Along with purchasing and deploying gaming equipment, schools should spend time early on defining expectations for players and ensuring that esports will help them develop the collaboration and communication skills that, ideally, come with being part of a team. Some schools and leagues require players to maintain minimum grade-point averages, and program coaches and leaders often emphasize the importance of sleep and proper nutrition.

Team sponsors can build enthusiasm and support by participating in their schools' club "rush weeks" and sharing competition results in schoolwide morning announcements or monthly newsletters.

Building Esports for Higher Education

While starting a new varsity sport at the collegiate level is a more complex undertaking than creating a high school club or team, costs won't necessarily be a limiting factor for most institutions. According to NACE, the average cost of starting up an esports program in higher education is just $41,000, and the average program recruits 15 students to participate during its first year.

It is, of course, possible to spend quite a bit more than this, and schools hoping to use esports as a recruitment driver will likely want to invest in gaming spaces and technologies that will impress prospective students. Ashland University in Ohio spent approximately $85,000 converting a library computer lab into a state-of-the-art gaming space with a dedicated 1-gigabit-per-second internet pipe, 25 gaming computers, high-end monitors, two 65-inch high-definition TVs, gaming chairs and other peripherals. When SUNY Canton launched its esports program, it beefed up its networking infrastructure and built out an 1,800-square-foot gaming arena with 24 gaming computers and monitors, an 82-inch 4K Samsung Smart LCD TV for team meetings and game review, five console gaming stations with 55-inch 4K Samsung Smart LCD screens, and even lockers for the participants to store their jerseys and equipment.

It's crucial for varsity esports programs to get buy-in from their schools' athletic departments — a potentially challenging task, given that most athletic directors hail from more traditional sports such as football and basketball. If other institutions in a school's athletic conference don't currently offer esports, teams might have to participate in national leagues.

A number of colleges and universities offer esports-related courses or majors alongside their varsity programs. The Ohio State University, for example, rolled out an interdisciplinary esports curriculum at the same time the school was building a gaming arena for varsity esports teams. Becker College in Massachusetts, meanwhile, was already well-known for its game design program when the school launched varsity esports teams in 2018.

More Screens for Teens?

Some educators might reject the idea that schools should give teenagers the opportunity for yet more screen time. But esports proponents counter that high schoolers are already playing video games, and formal esports programs help kids to do so in a constructive, team-oriented environment that gets them more involved in the school community.

Additionally, research shows four benefits of gaming:

Improved spatial attention: One study found that action video games improve the ability to locate a target stimulus among distractions — a test that predicts driving ability.

Enhanced problem-solving: In one long-term study, teens who played strategy-focused video games improved their problem-solving abilities and grades the following year.

Increased physical activity: Really? Really! A Harvard study showed that kids who played sports video games were frequently motivated to take up athletics in real life. And some games, such as Pokémon GO, require participants to move around in the real world.

Practice, patience and perseverance: The Association for Middle Level Education points out that video games often require kids to perfect their strategies and methods of attack through repetitious trial and error. "Delays of gratification have been correlated to better study behaviors and decreased drug usage," the association notes.

Get in the Game with Esports

To gain the benefits that esports can deliver for both students and educational institutions, you need IT Orchestration by CDW™.

Esports is an emerging area that requires educational IT professionals to deploy and integrate a number of different technologies, ensure adequate computing power and connectivity, and maintain and upgrade resources over time. A trusted partner like CDW can help.

Whether a school is rolling out a handful of gaming stations or building out a 150-seat esports arena, CDW's experts can help. We'll outfit educational spaces with the latest gaming PCs and accessories, perform network capacity and speed assessments and upgrades, and even design a gaming room layout to account for ergonomic player seating and a fun spectator experience.

Esports consultation: CDW's solution architects will assess a school district or college's existing IT infrastructure, evaluate its suitability for supporting esports and make specific recommendations about upgrades and new investments.

Implementation services: Schools can speed up their time-to-objective by relying on CDW to install, configure and integrate new IT tools.

Managed services: Many educational organizations rely on CDW's experts to help them support and manage not only their esports investments but their overall IT environments as well.

Want to learn more about the fast-growing world of esports? Visit CDW.com/esports

The CDW Approach

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