

Leagues of Learning

The Rising Tide of Esports in K-12 Education





Executive Summary

Video games, as with all gaming, have almost always included a competitive element, even in the earliest video games such as *Pong*.^{*} However, it wasn't until the early 2000s that technological innovations provided the environment for esports to thrive. Broadband Internet speeds have allowed gamers to join multiplayer competitions, first through local-area network connections (a LAN party) and later through wireless networks. Gaming consoles like Xbox,^{*} PlayStation,^{*} and Nintendo^{*} created their own online networks to keep pace. Streaming services like Twitch^{*} and YouTube^{*} popularized watching others play video games and viewing gaming tournaments. Additionally, a host of new games, such as *StarCraft*^{*} and *FIFA*^{*}, and game types, including first-person shooter and multiplayer online battle arena, capitalized on the vastly improved power, performance, and graphics of modern computing. While still rapidly evolving, the esports industry is now mature enough to include niches for almost anyone with any affinity toward gaming, no matter their age, interest, ability, or level of enthusiasm.

With this rise in popularity has also come a rise in the professionalization of gaming. Professional esports competitors routinely earn thousands of dollars, and the largest competitions can have purses totaling in the millions of dollars. In 2020, 662.7 million people watched livestream gaming content. Throughout 2021, esports audiences grew 10 percent to 728.8 million viewers. This number is expected to reach 800 million by the end of 2023.¹

Esports has also proved to be “pandemic-proof” and a powerful way of maintaining team camaraderie despite challenging circumstances. In a survey of esports fans conducted in September 2020, over 63 percent of fans under the age of 17 reported an increase in esports interest during the pandemic. Meanwhile, nearly 42 percent of respondents between 25 and 34 also reported an increase in interest in esports over this time period.²

¹ Source: [Tuning in: Esports vs Sports Viewership monumental shifts in 2022](#)

² Source: [US eSports fans increase in eSports interest during COVID-19 in 2020, by age](#)

It's no surprise, then, that this popularity has trickled down first to colleges and universities, and now to K-12 schools. Many high schools prefer to adopt a gradual approach to implementing an esports program. They might start by providing a space for students to bring in their own gaming systems and compete against one another after school. As their esports programs become more competitive, however, schools frequently move to PC-based gaming and/or setting up their own esports lab.

Purchasing for esports programs is different than for other education technology. With esports, system performance can often correlate directly to a player's performance in a game. As a result, purchasing tends to be more modular. Instead of purchasing all new PCs, a school may begin with a powerful Intel® Core™ i7 or i9 PC, and then upgrade the graphics card or add more memory over time.

This paper will help educators and leaders begin to understand the esports movement, its impact in K-12 education, and how they can leverage the excitement and engagement that have fueled the growth of this industry over the past few years. It will do this by reviewing four areas:

- 1** The definition of esports;
- 2** What the benefits of esports are for K-12 education;
- 3** How to start an esports program; and,
- 4** What type of hardware is required for an esports program.



Benefits of Esports	Improves school climate 
Creates career pathways 	Supports social, emotional, and academic growth 

Introduction to Esports

What Are Esports?

Although some esports are console-based (e.g., Xbox* or PlayStation*), many K-12 schools are using high-powered laptops and personal computers (PCs) using the Microsoft* Windows* Operating System (OS). Some schools invest in equipment that can be used for other purposes, such as a CTE classroom during the day, and dictates what games can and cannot be played as part of the school's team. For example, if Xbox or Nintendo Switch* is the only gaming console that will host a game, the school may not take part in the game. If the game is cross-platform, however, it is eligible for PC play.

Like traditional sports, esports require dedication, practice, focus, quick reflexes, and a passion for the game. Similar to other quintessential high school extracurricular activities, such as debate team or Model UN, esports require dedication, practice and, in many cases, a certain innate skill. Esports also include the same team requirements as traditional sports. Being part of a strong team requires effective planning, communication, and decision-making skills. Most importantly, esports, like traditional sports, are competitive, allowing the best gamers to rise to the top.

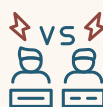
And although some may still hesitate to consider esports a true sport, it's impossible to ignore esports' meteoric rise in popularity around the globe. Global professional esports revenue topped \$950.3 million in 2020 with an audience of over 450 million people with projected growth to \$1.185 billion by 2024.⁵ The mainstream sports industry is beginning to take notice as well. ESPN now maintains an esports page filled with the latest news and league results.⁶



Multiplayer: In the early years of competitive gaming, individuals played turn-based games like *Space Invaders** to see who could get the highest score. Today, players compete against others simultaneously in real time.



Online: An Internet connection allows players to compete against opponents in the same room or on the other side of the globe. The Internet also allows esports competitions to be streamed through services like Twitch for live online viewing. According to a study by Streamlabs and Stream Hatchet, Twitch saw an 83% year-on-year uprise in viewership when the pandemic hit, with over 5 billion hours of content viewed in the second quarter of 2020 alone.³ Similarly, YouTube Gaming* saw their audiences increase during the pandemic by 15% in March, 2020.⁴



Competitive: Esports is the competitive arm of the gaming industry. As opposed to the casual gamer who plays for fun, esports players compete. At the professional level, gamers compete for large cash prizes, while at the high school level, players earn trophies, titles, and merchandise for their schools.



Team-based: Esports players compete as part of a team. While players may compete as individuals, they are doing so on behalf of their team. The first step to considering the role of esports in education is a definition that works for schools and students: Esports are multiplayer, online video games played competitively as part of a team.

³ Source: [How Has COVID-19 Impacted Esports and Its Technology Needs? | Live Design Online](#)

⁴ Source: [How The Gaming Industry Has Levelled Up During The Pandemic](#)

⁵ Source: [How Has Esports Been Affected By The Pandemic?](#)

⁶ Source: [Esports News: LoL, Dota 2, Hearthstone - ESPN](#)

What Games Are Played in Esports?

A search for ball sports on Wikipedia yields a long list, from baseball to tennis. Similarly, esports encompasses a wide variety of competitive games.

Sports Games

Sports video games parallel their real-world alternatives. Games like *FIFA** let gamers take on the roles of their favorite soccer/football players in their favorite clubs. Another sports game popular with many high school esports teams is *Rocket League**, a fantastical game that crosses cars and soccer. The team-based element and generally tame content make sports games ideal for new high school clubs and teams.



Released in 2015 by Psyonix, this popular video game crosses cars and soccer in 3 versus 3 competition. Many high schools choose *Rocket League* for their game of choice, because it captures the interest of their students and the content is rated E for Everyone.

Fighting Games

In this type of esports, a limited number of players (frequently two) fight in a contained space. Each character has unique strengths and abilities. Like a boxing match, the game takes place over a period of rounds until time expires or one player is defeated. Many multiplayer fighting games, including *Street Fighter** and *Mortal Kombat**, have found a role in esports. Though some consider these two games to be too violent for the high school environment. More age-appropriate fighting games, like *Super Smash Bros.** are only available on gaming consoles, however, not PCs.

Esport Revenue Predictions from Media and Advertising Sponsorships

Global professional esports revenue topped \$950.3 million in 2020 with an audience of over 450 million people and projected growth to \$1.185 billion by 2024.

950.3 million

Dollar market in 2020

1.185 billion

Dollar market by 2024

Real-Time Strategy (RTS) Games

Real-time strategy games are not turn-based; players compete simultaneously and games progress in real time. Players often build, position, and maintain structures and characters, called units. Players gather resources, build bases, and develop technology with the goal of taking over or destroying their opponents' units. RTS games popular with esports leagues include *StarCraft II** and *Age of Empires**.

First-Person Shooter (FPS) Games

First-person shooter games are weapon-based games that place the player inside the body of a character. The player, seeing the world through the eyes of a character, tries to eliminate an enemy. First popularized with games like *Doom** and *Halo**, multiplayer versions of FPS games have become popular in esports. While the realistic violence in games like *Call of Duty** and *Counter Strike: Global Offensive** make many FPS games inaccessible to most high school esports teams, other games like *Overwatch** are finding a niche in high school and collegiate esports environments. It's important to note that other game types, like Battle Royale and multiplayer Online Arena, may have first-person shooter elements.



In *Overwatch*, an FPS game from Blizzard Entertainment, players work together in teams of six to secure and control their territory and transport a “payload” to another part of the map. Players can choose from 31 different characters, each with unique abilities. According to Active Player, *Overwatch* racked up at least 5 million average players each month in 2021—peaking as high as 7.3 million—with a peak of around 500,000-600,000 daily players.⁷ Blizzard operates *Overwatch* League, a competitive league of 20 professional teams, from an esports arena in Los Angeles. The communication and teamwork involved, as well as the relatively obscured violence, make *Overwatch* a popular high school esports game as well.

LEAGUE OF LEGENDS

League of Legends, commonly referred to as LoL, is one of the more popular MOBA games. With an average monthly player base of 118 million of 150 million registered players, *League of Legends* averages 500,000 concurrent live players. It is cited as the world’s most-watched and largest esports game, composed of 13 leagues, with 109 teams and 545 players in total. It won “Best Esports Game” at The Game Awards in 2019 and 2020.⁸ In the game, players compete in squads of five to capture the opposing team’s base structure, called a Nexus. Each character has different strengths and roles, and teamwork and communication are key to becoming a winning squad. In March 2022, between 2 million and 3 million people played *League of Legends* concurrently across all platforms.⁹

Multiplayer Online Battle Arena (MOBA) Games

Multiplayer online battle arena games are a subgenre of RTS games. Teams try to destroy the opposing team’s structure or base and eliminate their adversaries, whether other player- or computer-controlled. *League of Legends*,* *Dota 2*,* and *Smite** are currently three of the most popular MOBA games.

Battle Royale Games

In Battle Royale games, players gather resources and compete to be the last player (or group of players) remaining. Unlike in MOBA games, the map in Battle Royale games gradually gets smaller, meaning players are forced to interact with each other as the number of living players dwindles. Currently, *Fortnite** is the most talked-about Battle Royale (and is also an FPS game). Although the violence is cartoonish, many parents object to the amount of violence, the sexualized depiction of female characters, as well as the addictiveness of the game and its freemium model (provided free of charge, with additional features that expand the functionality available for a fee). *Fortnite*’s role in the esports scene cannot be ignored, but many high school esports teams are choosing not to use it as a competitive platform due to its negative stigma.

⁷ Source: [Overwatch Live Player Count and Statistics](#)

⁸ Source: [What is League of Legends? Inside LoL's 100M+ Playerbase](#)

⁹ Source: [League of Legends player count 2022: how many people play League of Legends?](#)

Selecting an Esports Game

The first step to considering the role of esports in education is a definition that works for schools and students: Esports are multiplayer, online video games played competitively as part of a team. Ultimately, it is up to a school or district to decide the right type of games for their unique young gamers. The choice of games can also influence the types of students drawn to an esports club or program to better serve the population. *Valorant**, for example, has a roughly 40% female player base.¹⁰ Asking students what games they like and what games could help the team be more inclusive is a great first step. This can be done through surveys asking students what they want to play and what systems they have. Gaming can be a powerful way to draw out diverse voices to support inclusion while deepening engagement.

Starting from just one program at Robert Morris University Illinois in 2014, collegiate esports programs now number in the hundreds. Many are actively recruiting athletes and offering millions of dollars in scholarship money, and some have created degrees in esports.¹² Over 94% of all varsity esports programs in the U.S. have joined the National Association of Collegiate Esports (NACE). With over 5,000 student-athletes, the NACE is recognized as the premier governing body for varsity-level esports in the United States. However, thousands of other schools in North America are competing through the Collegiate Starleague (CSL), Tespa, the Electronic Gaming Federation (EGF), the American Collegiate Esports League (ACEL), and many more.¹³

Nearly 200 colleges and universities are currently members of the NACE and contribute over \$16 million in esports scholarships on an annual basis.¹⁴ These schools have coaches and offer partial or full-ride athletic scholarships. Varsity programs can become a member of the NACE or other regulatory bodies since the National Collegiate Athletic Association (NCAA) does not currently regulate esports.¹⁵

How is Competition Organized?

At the professional level, gamers compete in leagues and tournaments all over the world. The competitions, mostly organized by the game developers themselves, are broadcast to global audiences via Twitch and other streaming services. Teams compete for lucrative prize money and sponsorships. Esports as an entire industry is projected to see 29.6 million viewers this year, with those numbers only set to rise in the future.¹¹

Scholastic Esports Leagues

There are thousands of high school esports clubs and teams across the country, with many states now having teacher-run, nonprofits that are organizing competitions. Most of these organizations are on par with for-profits. Similar to the collegiate landscape, high schools have a plethora of options when it comes to selecting a league. Most leagues promote themselves as turnkey solutions, and not only organize the leagues and tournaments, but also provide solutions and consulting to help high schools get their programs up and running.

Similar to the collegiate landscape, high schools often have several options available when selecting which league to join. High schools have to decide whether they will join a national organization like HSEL or NASEF or follow the league adopted by their local athletic association. The good news is, in this decentralized landscape, schools are free to choose the league (or leagues) that work best for their program goals.

¹⁰ Source: [How Riot Games will ensure that Valorant's esports stars include women](#)

¹¹ Source: [A new frontier in college athletics – video games](#)

¹² Source: [The Growth of Collegiate Esports](#)

¹³ Source: [The College Esports Scene is Ready for a Boom in 2022](#)

¹⁴ Source: [Esports in higher education: key considerations for starting a program at your college or university](#)

¹⁵ Source: [The College Esports Scene is Ready for a Boom in 2022](#)



Figure 1: The esports ecosystem and learning opportunities for students



Who’s Involved in Esports?

Consider a traditional sport like basketball. Obviously, the players on the court are key, but many more people are involved, including the coaches and extra players on the bench, as well as the spectators in the stands. There are also video crews and producers, announcers, and even more fans watching at home. Like these traditional sports, esports also support a large ecosystem of involved people. For high schools, this is an exciting way to form a new community and is opening a door to a wide variety of new career opportunities for students who enjoy esports.

Figure 1¹⁶ shows the maturity of the ecosystem at the professional level and highlights some of the possible career paths for high school students preparing for a future economy. Esports fosters careers that include journalists, shoutcasters (esports announcers), game developers, streamers, advertisers, social media managers, coaches, analysts, and more.

¹⁶ Source: adapted from Anderson, Tsaasan, Reitman, Lee, Wu, Steele, Turner & Steinkuehler



Impact of Esports in Education

Esports Benefits

A survey conducted by Phi Delta Kappa International in the fall of 2020 asked students and educators what challenges were most important to address during the 2020-21 school year. Overall, both groups offered similar responses to each question. Notably, 55% of students responded that providing extracurricular activities was an integral piece of returning to school, which stands in stark contrast to the far smaller 10% of teachers who identified extracurricular activities as important.¹⁷ Generally speaking, there's little argument about the benefits of extracurricular activities for high school students. The National Center for Educational Statistics's study "Extracurricular Participation and Student Engagement" suggests that students who are involved in extracurricular activities are more successful in a number of ways,¹⁸ including:

- Higher graduation rates and higher attendance.
- Improved scores in math and reading.
- More students aspiring to higher education.
- Higher focus in class.
- Higher self-esteem, with fewer engagements of smoking and drinking.

Apart from tangible benefits such as these, students who engage in extracurricular activities (athletic, artistic, scholarly, or otherwise) experience an essential sense of belonging within the school community. Players learn to negotiate the dynamics of a team, they must attend meetings and practices regularly, and they are held accountable for contributing through their competitions.

¹⁷ Source: [Student and Teachers Share Homes and Fears for the New School Year](#)

¹⁸ Source: [Extracurricular Participation And Student Engagement](#)

School Environment

“Maslow before Bloom”¹⁹ was a common refrain heard throughout school classrooms and Zoom meetings during remote learning in 2020. The oft-repeated statement was made by educators and administrators in an effort to place a proper emphasis on students’ foundational needs to feel safe and like a member of a community, both of which must be met prior to pursuits like cognitive growth, a considerable challenge especially in the midst of the COVID-19 pandemic.

Many students in U.S. schools have never found themselves as a member of the school community. Whether they feel excluded due to bias or simply have yet to find a connection with others, these limiting factors impact students across the country. Esports, while not a panacea for all students, helps to address poignant equity and inclusion issues along the lines of gender, race, and ability. Additionally, by emphasizing important social and emotional development, players gain lifelong skills that can help them interact with others, problem solve, and communicate effectively.



Equity and Inclusion

In traditional sports, players are often separated by gender, age, weight, and able-bodiedness. Athletes are confined to a team that, in many ways, looks like them. And, depending on the region where the team is located, they are playing against opponents who also look like them. In esports, gender assignments and their restrictions fall away: the best player may be the youngest, a player in a wheelchair is on an even playing field and opponents may not speak the same language. An esports team breaks traditional boundaries; rivals could be across town or across the globe. Together, schools and esports programs can combat divisive structures and behaviors to create an inclusive and supportive community.

The “Diversifying Student Participation” report recommends a multi-tiered approach to providing a welcoming and inclusive esports program.²⁰ One area of importance it emphasizes is equity of access for schools with limited funding. The report suggests that these programs could partner with community organizations to create centralized gaming centers if school-based options are not available.

Creating and enforcing a strong code of conduct helps a program or league identify potential harmful behaviors that may target marginalized groups such as BIPOC or female athletes. Teams can consider how the code of conduct applies to both digital and physical spaces, the role of an upstander, and help name and deconstruct toxic racist or misogynist behaviors.

Representation and mentorship can also prove vital for a program’s diversity. By connecting under-represented participants to esports athletes from similar backgrounds, students are able to envision their own presence and position within the field. Esports advisors have an opportunity to connect students to both esports athletes and people in STEM fields of

¹⁹ Source: [How to Maslow Before Bloom, All Day Long](#)

²⁰ Source: [Diversifying Student Participation - NASEF | Free High School Esports Clubs](#)

interest. Consult lists that collect inclusive esports organizations²¹ to help build connections between the larger esports community and high school esports athletes. Programs like the*gameHERS²² spotlight women contributors and also have crossover into other diversity areas like able-bodiedness, sexual orientation, and race.

Game choice can often prove an important factor when recruiting students. Consider using a survey at an initial student interest meeting that asks potential players which of the league-approved games they enjoy playing. An interest survey allows advisors to intentionally build a program that appeals to a diverse group of students. Teams can search to see trends that may exist between demographics and particular game titles so that the esports program better represents the entire school population. For instance, Garden State Esports data shows that its girl gamers particularly enjoy *Valorant*, so a team that is trying to recruit more girls may prioritize the title over others.

Girls in Esports

Esports organizations suggest several approaches to improve recruiting girls for esports teams. Ashley Hodge, an esports coach at Dodge County (Ga.) High School suggests, "Different schools have all-girls teams, or all-girls' tournaments. Others make sure there's a variety of [game] titles that could be used to expand access and equity for girls."²³

Many schools are also looking to all-girls esports teams in an effort to attract more female players.²⁴

- Ladies of League at Troy High School in Fullerton, California, may be the first all-female high school esports team. The team focuses on *League of Legends*, and female students play alongside male students on *Overwatch* teams.
- Fountain Valley High School in Fountain Valley, CA has an all-female *Overwatch* team in its esports club.

In addition to school-based efforts, extracurricular programs such as Girls Who Game are providing opportunities for girls and underserved students. In collaboration with Microsoft, Dell, and Intel, the program uses *Minecraft* to focus on empowering female students in grades 4–8 with learner-driven experiences that broaden their knowledge, skills, and dispositions within STEM-related fields. By the end of a term with the club, students have greater self-awareness of their abilities, and they're empowered to join the STEM ecosystem beyond K-12.²⁵

Finally, schools and leagues provide codes of conduct for gender inclusivity that can help a team provide a welcoming environment to counteract misogyny within esports.

Because misogyny is a real issue in the gaming community, K-12 esports curriculum can help shift the tide with the next generation of gamers. Instead of learning toxic behavior in an isolated gaming environment, esports teams can model inclusive behavior, hold gamers accountable for their online and in-person conduct, and provide experiences where male and female players collaborate. Esports provide a unique opportunity for traditional gender restrictions to fall away.

²¹ Source: [Diversifying Student Participation - NASEF | Free High School Esports Clubs](#)

²² Source: [the*gameHERS](#)

²³ Source: [Anyone's Game: K-12 Esports Opportunities Abound for Girls](#)

²⁴ Source: [The Esports Edge](#)

²⁵ Source: [Girls Who Game: Community of the Future Design Challenge](#)

Gamers with Disabilities in Esports

Fortunately, adaptive technology and inclusive programs help break down barriers for gamers with disabilities. Since 2018, Microsoft and the Special Olympics have partnered to include esports competitions. The 2021 Special Olympics featured an esports tournament with over 90 Special Olympic athletes who competed in *Madden NFL 22*, *Rocket League*, and *Forza Motorsport 7*. Amber Gertsch, a Special Olympics athlete from Utah, stated, “I can’t participate in contact sports, but can compete in sports like gaming.”²⁶ Consider connecting with a local or statewide Special Olympics program for additional esports competition or volunteering opportunities

“ I can’t participate in contact sports, but can compete in sports like gaming.”²⁷

— Amber Gertsch, a Special Olympics athlete from Utah

In the K-12 realm, Garden State Esports reports that 12% of its players have special needs. High school programs can partner with or learn from organizations like AbleGamers, who support inclusive gaming and providing social opportunities for people with disabilities.²⁸ As school esports programs mature beyond a purely competition-based model, schools can create spaces that are inclusive by design such as Ohio State University’s Arena, which features stations with adaptive Xbox controls.²⁹

²⁶ Source: [Gaming for Inclusion](#)

²⁷ Source: [Gaming for Inclusion](#)

²⁸ Source: [AbleGamers](#)

²⁹ Source: [Arena Hours: Esports](#)

³⁰ Source: [The AbleGamers Charity](#)

³¹ Source: [How to Sell SEL: Parents and the Politics of Social-Emotional Learning](#)

³² Source: [2021 Educator Confidence Report: Annual Teacher Survey](#)

³³ Source: [Scholastic Esports: Current Trends and the Future](#)

³⁴ Source: [What Is the CASEL Framework?](#)

AbleGamers features a Support section³⁰ that provides Assistive Technology suggestions for gamers based on their unique needs. The guide addresses among others:

- General Assistive Technology;
- Microsoft Xbox Adaptive Controllers;
- Gaming with One-hand; and,
- Gaming with a Visual Impairment.

Social and Emotional Learning

With over 90% of parents supporting students gaining life skills at schools³¹ and 82% of U.S. educators reporting that “an integrated, detailed well-being program would positively impact students,”³² stakeholders throughout the school community are identifying highly-important social and emotional learning (SEL) skills as top priorities.

By aligning esports with social and emotional skills, schools can unite students’ interest in gaming with an established school priority. Building off a toolbox model in which schools use multiple strategies to reach their students’ diverse needs, passions, and interests, esports provides a unique approach that complements SEL curricula or programs.

Utilizing resources like the “Esports Personal and Performance Improvement Curriculum”³³ (EPPIC), developed by Garden States Esports, programs can leverage the Collaborative for Academic, Social, and Emotional Learning (CASEL) Framework by developing the following skills in their players:

- Self-Awareness;
- Self-Management;
- Responsible Decision-making;
- Relationship Skills; and,
- Social Awareness.



Integrating Esports into Curriculum

As esports matures in K-12 schools, leagues have begun providing resources that connect the esports industry and skills as a framework for far more than entertainment or competition. Schools throughout the country have adopted both integrated and stand-alone esports curricula to help prepare students for a range of college and career options. Esports has grown beyond offering careers for only gamers. Today, it has an increasingly diverse set of career options like management, event planning, broadcasting, media production, and entrepreneurship. Modern comprehensive esports programs include both competition and academics providing students with authentic experience in their passion areas while still in high school.

Offering esports is a compelling way for high schools to encourage students to pursue careers in STEM fields. Students who are drawn to gaming are often equally interested in technology. As the global economy shifts increasingly towards STEM careers at an annual rate of 2.3%³⁵, it is vital that U.S. schools provide students experiences that prepare them for these careers.

Nationally, as of 2019, only 18% of post-secondary students pursue STEM degrees.³⁶ These figures are in

stark contrast to esports athletes. According to a 2020 survey of over 1,100 esports athletes conducted by GYO, over 60% stated that they planned to pursue a career in either a STEM or esports field.³⁷ Chris Aviles, Founder and President of Garden State Esports, says that the number is even higher for athletes in his league as “65% of kids in Garden State esports want to go on to major in STEM.” Naturally, students who major in STEM are drawn to STEM careers, which, according to the U.S. Bureau of Labor Statistics, have higher wages than the national average.

Esports can also help students develop the soft skills required in higher education and careers, ones that may not develop through involvement with traditional sports. According to “ESports in K-12 and Post-Secondary Schools”³⁸ by Gregory Rothwell and Michael Shaffer, “soft skills are defined as intra- and interpersonal skills essential for human development, social participation, and success in the workplace, such as communication, teamwork, and solving problems under pressure.” Successful esports require an additional set of soft skills relating to technical skills, tactics, and mental preparedness as teams collaborate, strategize, and reflect together. Team advisors and captains foster discussions and develop complementary roles within the team.

³⁵ Source: [The STEM Labor Force of Today: Scientists, Engineers, and Skilled Technical Workers](#)





³⁶ Source: [Indicator 26: STEM Degrees](#)

³⁷ Source: [The Correlation Between Esports and Desired College Majors](#)

³⁸ Source: [eSports in K-12 and Post-Secondary Schools](#)

STEM Readiness

Participating in esports offers students the academic and technical skills necessary to succeed in learning opportunities and careers both inside and outside of STEM. Scholastic esports organizations have developed a range of curricula³⁹ for middle and high schools centered on English Language Arts, Health and Wellness, and a CTE curriculum that involves a multiyear sequence of courses. The 25 CTE courses integrate core academic and technical knowledge and are organized around the four major esports sectors.⁴⁰

<p>Strategists</p> 	<p>Organizers</p> 
<p>Content Creators</p> 	<p>Entrepreneurs</p> 

To better serve their athletes, both non-profit and national scholastic esports leagues are partnering with universities, local organizations, and esports companies to develop a range of esports-focused STEM curricula ranging from topics like journalism, video production, and even cybersecurity. NASEF's curriculum provides pathways to at least 15 careers, including:

- Event Planner
- Analyst
- Fandom Art
- Marketing
- Theory Crafter
- Shoutcaster or Broadcaster
- Streamer
- Journalist
- Web Developer
- Referee
- Coach
- Social Media Director

Pathway to College and Career

When students take part in esports in high school, coaches can nurture a passion for STEM and guide students to explore a STEM pathway in their future. Nationwide data suggests that 66% of high school graduates were enrolled in college by the fall of 2019.⁴¹ By comparison, that same year, 92% of Garden States Esports athletes planned on attending college following graduation with the other 8% indicating plans to join the military.

The field of esports can offer students the academic and technical skills necessary to succeed in STEM and non-STEM related learning opportunities and careers. When students take part in esports in school, coaches can nurture a passion for CTE pathways and guide students to explore STEM careers.

Colleges with a strong esports culture often offer robust STEM curriculum for students. Shawnee State University is a pioneering leader in game design and esports competition.⁴² The university offers a BS in Gaming Programming, a BA in Game Art, and a minor in Game Design.

It's not just smaller schools who have gotten into developing esports majors. While programs at Shawnee State University or Shenandoah University were among the first to offer degree pathways, some of the largest universities in the country, such as University of Arizona⁴³ and Ohio State University⁴⁴ have developed academic programs to prepare students for esports careers.

There are many opportunities for high school students interested in esports to receive scholarships and participate on college teams. In 2016, only seven colleges and universities had esports programs, and by 2018, 63 institutions had esports programs. As of January 2022, nearly 200 colleges field varsity esports programs⁴⁵ and are offering approximately \$16 million per year in combined scholarships for esports.⁴⁶

³⁹ Source: [Free High School Esports Clubs Curriculum](#)

⁴⁰ Source: [CTE - Esports + Career Technical Education](#)

⁴¹ Source: [Fast Facts: Immediate transition to college](#)

⁴² Source: [Game Design and Esports Program Wins with ViewSonic Gaming Monitors](#)

⁴³ Source: [University of Arizona: Arizona Esports](#)

⁴⁴ Source: [Academic and Research Programs in Esports and Game Studies](#)

⁴⁵ Source: [The College Esports Scene is Ready for a Boom in 2022](#)

⁴⁶ Source: [NACE Announces Strategic Partnership with Skillshot Media For Comprehensive Collegiate Esports Program](#)

Health and Wellness

In the summer of 2021, state departments of education submitted plans for spending federal Elementary and Secondary School Emergency Relief (ESSER) funds. Across the nation, states and local districts prioritized students' physical and mental health and well-being by allocating funds to support additional staffing, programs, curricula, and other types of support. Though unexpected, an esports program can help schools meet their students' health and wellness needs.

Esports and the community that it fosters can play an integral role in supporting students' health and well-being as gamers who participate in school-sponsored esports programs are less isolated because they are held accountable for their own growth in a team environment. According to Aviles, "We are seeing numbers as high as half of the kids participating in esports don't participate in any other activities at their school." For some students, this may be the first time they have ever been involved in a team sport. Because gaming can be isolating, getting students involved in esports teams shifts their experience from a solo to a social one where they can feel like an accepted member of their school community, boosting physical and mental health.

When comparing traditional sports to esports, the issue of physical fitness frequently surfaces. For example, while soccer players gain exercise and stamina through practice and game play, esports players may not. Furthermore, while a soccer player will experience fatigue and diminishing returns after hours of play, a gamer may extend their play almost indefinitely. These realities can and should be addressed by the school, and in fact provide an opportunity to "round out" students for whom gaming is a priority. Similar to GPA requirements in traditional sports, esports teams can institute athletic

requirements. For example, a team could implement "walking meetings" for a change of pace and scenery or include wellness equipment in the gaming room.

K-12 esports organizations and leagues also use their codes of conduct and other structures to prioritize players' health and wellness. Schools can positively influence gamers' physical health in their esports programs and can actively shape the curriculum to include healthy habits. In Maize, Kansas, Complete High School students are offered a class that promotes healthy gaming by teaching students interpersonal and problem-solving skills, and focuses on appropriate online behavior strategies. Students also keep an exercise and food log. Results from a trial have demonstrated increased attendance rates and team members' GPAs are 1.5 points above the average for the school.⁴⁷

Several national organizations have integrated wellness into their esports curriculum including NASEF who partnered with the Susan Samueli Integrative Health Institute, UCI Esports, Dr. Wayne Jonas, and the San Diego County Department of Education. This collective developed a curriculum titled "Play Well. Be Well,"⁴⁸ which includes resources on healthy relationships, choices, and goal-setting. Centered on the acronym GAMERS⁴⁹, the free curricular initiative helps students develop:

- **G**rowth;
- **A**ctivity;
- **M**ind;
- **E**nvironment;
- **R**elationships; and,
- **S**ustenance.

⁴⁷ Source: [An Interview with Dr. Kristy Custer & Mike Russell, Complete High School Maize](#)

⁴⁸ Source: [Health and Wellness Learning](#)

⁴⁹ Source: [NASEF Gamers Infographic](#)



The Pathway to K-12 Esports

Launching an Esports Program

“It is no longer “cutting edge” to have an esports team at your school. What is cutting edge is what you propose to do with this opportunity through esports...The games should provide an experience to something beyond the games. To focus solely on gaming is missing why esports is so important in school culture.”

— James O’Hagen, Rockford IL Public Schools⁵⁰

High schools generally have little trouble attracting students to esports. Some of the most recent data suggests that 90% of US adolescents play video games,⁵¹ 81% of teens have access to a gaming system, and 72% of teens actively play video games outside of school.⁵² Playing games formally in a school is a natural next step, one that schools can have a positive role in shaping. Esports programs have the power to “transform what is often an isolating activity into a social experience...giv[ing] their student gamers a chance not only to hone their craft but also to learn how to be team players.”⁵³

⁵⁰ Source: [The Academy of Esports](#)

⁵¹ Source: [Percentage of teenagers who play video games in the United States as of April 2018, by gender](#)

⁵² Source: [Video Games Are Key Elements in Friendships for Many Boys](#)

⁵³ Source: [Esports Programs Start to Pop Up in K-12 Schools](#)

⁵⁴ Source: [High School Esports League: School Programs](#)

⁵⁵ Source: [Gaming Concepts](#)

Many esports leagues provide resources to help high school clubs or teams get started. HSEL’s “Handbook” walks students and stakeholders through the entire process, covering topics such as identifying a coach or advisor, hosting the first meeting, and preparing for the first competition.⁵⁴ HSEL also offers a paid curriculum, “Gaming Concepts,” that covers everything from gaming history and appreciation to troubleshooting and field trips. HSEL claims that 82% of students who participated in “Gaming Concepts” as an after-school activity stated it was the first time they had participated in any extracurricular activity.⁵⁵ NASEF’s guide to starting an esports program offers an “Activation Kit”⁵⁶ and curriculum for different formats of esports: ELA, CTE, Middle School, and Out-of-School Time.⁵⁷ The National Federation of State High School Association offers a handy guide with practical steps to starting an esports program.⁵⁸

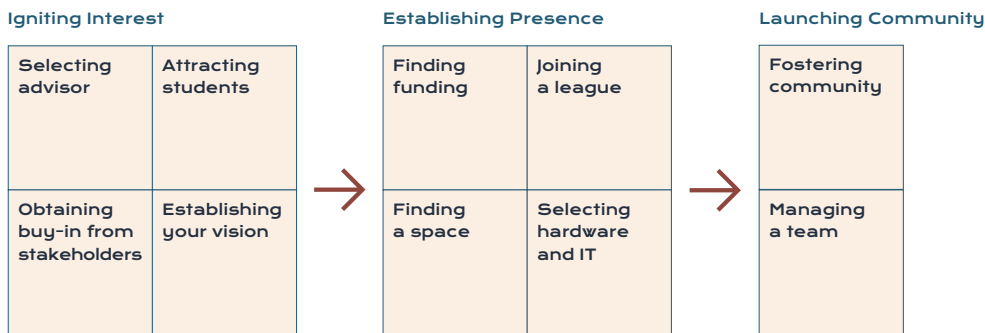
There are many pathways to creating a successful program. The following phases outline a typical path for esports in K-12 education. Note that while the phases follow a linear progression, the steps within each phase are not sequenced in a specific order.

⁵⁶ Source: [Sign Up Your Esports Club](#)

⁵⁷ Source: [Free High School Esports Clubs Curriculum](#)

⁵⁸ Source: [Adding Esports to Your High School Activities Program](#)

The Path to Esports in K-12 Education



Phase 1: Igniting Interest

Selecting an Advisor

In traditional athletics, coaches usually have some experience in the sport themselves (and may even excel at it). And—while in the past—esports teams were often only helmed by teachers who were gamers themselves, according to Aviles “in esports we see as many coaches with a gaming background as we see coaches who are just the favorite teacher these students went to to get their club up and running.” As with many extracurricular activities, ideal advisors are adept at connecting with students and fostering positive relationships among players. More important than hours logged gaming, is a coach or advisor who has excellent people-management skills: getting students who may be accustomed to playing alone to work together as a dynamic and respectful team.

Prospective advisors may feel concerns about game strategy; however, Aviles continues that “strategy is not something that you have to know as a coach, I can go to Google* or YouTube and watch a video” or by connecting the club with a college esports team in the community or virtually. For instance, if students choose *Rocket League* or *Overwatch* as their competitive focus, the coach would ideally need to do some practical research on those games to better serve the team.

The most important qualities of an esports coach or advisor are passion and a belief in the legitimacy of esports as an endeavor. Coaches should be excited to facilitate a positive, inclusive environment where gamers can hone their teamwork and sportsmanship skills in a supervised program, and celebrate their shared accomplishments.

Attracting Students

The 1989 classic *Field of Dreams* contains the oft-quoted line “If you build it, they will come,” which is particularly true when talking about attracting K-12 students to esports. Early in the process, the coach or advisor should have an interest meeting. This will help establish game preferences and allow students to share what they would like out of an esports team, as well as establish future meeting times.

Many state and national leagues recommend highlighting the team’s goals, possible esports college and career options, and conducting an interest survey asking about topics like preferred game, past esports experience, platform experience, and career aspirations.

It’s important that this meeting be separate from the first team meeting, since that event will potentially involve writing a team charter, appointing student officers, prioritizing games for competitive play, and other decisions that affect the team’s future.

Obtaining Buy-in from Stakeholders

The primary obstacle for many nascent high school esports programs lies in convincing other stakeholders—teachers, administrators, families, and community members—of the value of a high school esports program. Often this is because these stakeholders do not have a strong grasp of the what, why, and how of esports. Therefore, instead of simply asking for permission to start an esports program, potential coaches and advisors should be prepared to teach their community about esports, preemptively addressing concerns and, most importantly, highlighting the benefits that an esports program will offer students.

Consider connecting the benefits of esports with the school's priorities. For instance, if the school is committed to improving its STEM or CTE offerings, emphasize the wide range of esports-related STEM careers as well as the pre-built CTE courses found in the Integrating Esports into Curriculum section of this paper. Additionally, many state and national esports leagues have pre-built presentations and informational packets for specific stakeholder audiences such as parents or school and district administrators.

It has never been more important to actively seek opportunities to integrate hands-on project-based learning, which can be the foundation of esports programs and ongoing initiatives. Moreover, scholastic esports combines hands-on experiences with cross-curricular content to intentionally address academic standards in the disciplines of English Language Arts, mathematics, and science.

Once all stakeholders are on board, the rest is relatively easy because it is rarely a challenge to attract students to an esports program. In fact, as with many new school initiatives, the students themselves can and will lead the charge.

“The start of the conversation is how you can help kids grow socially, emotionally, and academically, by adding an esports team, and how adding an esports team really has some other value. You can invest in STEM for your school and also get an esports team out of it. When I talk to schools, I talked about how it's an investment in STEM that comes with an extra curricular program that tends to appeal to underserved students.”

— Chris Aviles, Garden State Esports

Establishing Vision

Because the scale of esports in K-12 schools varies greatly from one school to the next, it may prove helpful to determine the initial vision for the program. While it is true that some schools have matured to a level where they offer for-credit esports CTE curriculum, grant varsity letters, and play their games in an esports arena equipped with the latest hardware, those programs assuredly grew over time.

Here are some questions that can help establish a vision:

- Will this be a club that plays together or a competitive team?
- Will there be a curricular connection or courses offered?
- How many games will the program field? How many teams will be offered for each title?
- Will the program be open to all students or will it start by only being open to a specific grade level for starters?

After establishing the vision and initial scope, be sure to communicate this information regularly throughout each of the other phases. Remember that the vision is iterative and will most likely evolve over time.



Conversation Starters

Here are some Conversations Starters to use during Phase 1 - Igniting Interest:

Focus on Students

Which students in the school might benefit from feeling like they belong in a community?

Focus on Self

What is your experience with gaming and esports? How has it evolved?

Focus on Others

What impact have you seen esports have in other districts, schools, etc.?

Phase 2: Establishing Presence

Finding Funding

As with other school programs, esports represent an investment, not only of time, but of school funding. Players need a place to practice, meet, and play; they need specialized equipment that doesn't limit their ability to be competitive; and coaches or advisors need compensation for their time and expertise.

The paradox of modern esports is that for many K-12 programs the competitive aspect is a by-product of the academic investment. By framing an esports program as an academic or school culture initiative that aligns with the school's other priorities, there are far more funding opportunities from the school, district, or through a grant than if a club simply asks for an esports arena with gaming stations. If stakeholders are budgeting a large amount for their traditional athletics and none to esports, it may be worthwhile to ask if the dollar amount supporting traditional athletics mirrors the economy of the real world, especially as esports grows in terms of participation, advertising, and viewership—all of which lead to revenue. As this industry grows, so do the associated careers an esports team can equip students to enter. Fortunately, start-up costs of an esports team are low, and purchases can be phased in as the team grows.

Many state esports leagues have resources on their websites about potential funding sources. Teams can also refer to "Finding Federal Funding to Support Your Scholastic Esports Programs,"⁵⁹ which brings together funding sources and sample language for discussing with decision makers.

The Elementary and Secondary School Education Relief (ESSER) fund—part of the American Rescue Plan—injects K-12 education with close to 130 billion dollars, with much of the money flowing directly to Local Education Agencies (LEAs), meaning school districts. School districts can use ESSER funds

in meaningful ways to address learning loss—a primary focus of those funds—through strong learning opportunities, ensure effective teaching practices, and increase student engagement through scholastic esports.

Schools have a great deal of flexibility in how they use this money towards required areas like Accelerated Learning, Extended Day Programs, and Extended Year Programs. Districts around the country have allocated Accelerated Learning funding towards hardware and software purchases while others have considered supporting STEM programs, such as esports, for extended year summer camps. By utilizing these funds for CTE- or STEM-related technology purchases, schools and districts can fund esports programs by leveraging this new equipment.

In order to allocate funds, school districts will need total cost as well as a breakdown of specific program costs. They are required to attach budget strings to any costs associated with the program. Here are some questions to consider while requesting funds:

- How much is needed for the program?
- How many students can be included?
- What's the educator/student ratio?
- What technology/equipment is needed?
- Are there licensing fees and/or software costs?

⁵⁹ Source: [Finding Federal Funding to Support Your Scholastic Esports Programs](#)

Funding Source	Esports Connection & Program Goals
Title I ⁶⁰	Reduce at-risk youth from dropping out. Esports are a proven way of including students who otherwise may feel disenfranchised from school. They also can keep school spirit and camaraderie alive during periods of remote and hybrid learning.
Title IV ⁶¹	Primarily for schools with high-poverty and low-performance to “offer students a broad array of enrichment activities that can complement their regular academic programs”. Esports are a powerful way of introducing STEM skills to students who may not otherwise show interest.
Elementary and Secondary School Education Relief (ESSER) fund ⁶²	<p>School districts can use ESSER funds to address learning loss—a primary focus of those funds—through strong learning opportunities, ensuring effective teaching practices, and increasing student engagement through scholastic esports.</p> <p>Potential esports-related connections:</p> <ul style="list-style-type: none"> • Well-being - improve student mental health and community through extracurricular activities. • Extended Year - create CTE or STEM summer camps and then continue to use the PCs for esports during the school year. • Accelerated Learning - very broad category that has been widely used to provide learning resources and programs as well as technology.
Cybersecurity	<p>H.R.6868 - Cybersecurity Grants for Schools Act of 2022⁶³</p> <p>Program designed to “provide for financial assistance to fund certain cybersecurity and infrastructure security education and training programs and initiatives, and for other purposes.”</p>
Perkins Grants ⁶⁴	“Identify, support, and rigorously evaluate evidence-based and innovative strategies and activities to improve and modernize CTE, and to ensure workforce skills taught in CTE programs [...] align with labor market needs.” Several national esports organizations have developed CTE curriculum that involves a multiyear sequence of courses.

⁶⁰ Source: [Neglected, Delinquent, or At-Risk – Title I, Part D - Office of Elementary and Secondary Education](#)

⁶¹ Source: [Nita M. Lowey 21st Century Community Learning Centers - Office of Elementary and Secondary Education](#)

⁶² Source: [American Rescue Plan Elementary and Secondary School Emergency Relief Funds](#)

⁶³ Source: [Cybersecurity Grants for Schools Act of 2022 117th Congress \(2021-2022\)](#)

⁶⁴ Source: [PCRN: Innovation and Modernization Program](#)

Joining a League

Joining a league has a large impact on an esports program's experience. Community rivalries, team member cost, game choices, and inclusivity expectations can largely be impacted by the league that a team joins.

Some leagues follow an affiliate model in which local educators develop smaller leagues. Both Garden State Esports League and Esports Ohio are examples of affiliates that facilitate competitions at the state level. Affiliates often use resources created by the parent organization and also abide by certain policies such as inclusivity or codes of conduct. HSEL has two types of leagues (Majors and Opens) that run in the fall, winter, spring, and summer. Programs are also encouraged to refer to state athletic boards or divisions as there may be established options though they vary by state. Local affiliates select which games will be offered, may create smaller conferences or divisions, establish competition guidelines, and conduct post-season tournaments.

Local organizations can help replicate the sense of community within the school by providing opportunities for teams to play other schools in their area, across town, or within their traditional sports conference. Increasingly, schools are moving beyond the mindset of "esports teams can simply play each other online" to facilitating in-person competitions similar to traditional sports. These opportunities are available to teams competing in local organizations to a far greater extent than teams competing in national competitions.

National organizations offer a more formalized experience for esports programs and facilitate competitions across the country. There are multiple companies that a team can join and some offer the ability to compete in multiple tournaments or leagues simultaneously.

NASEF⁶⁵ and HSEL⁶⁶ both offer resources to help teams get started with league play.

Establishing a Space

Technically, esports team players can meet online in their own homes at a coordinated time, which means the school need not supply any equipment or space at all. However, if schools plan to take their participation in esports to the next level, they will want to think about establishing and investing in a space where the team can meet, discuss strategy, plan practices, scrimmage, and bond. A natural place to start is an existing computer lab in the school, where students can access and reserve computer time. As participation and funding grow, teams can look to adding furniture and equipment.

⁶⁵ Source: [How to Form a High School Esports Club](#)

⁶⁶ Source: [School Programs — High School Esports League](#)

Selecting Hardware and IT

Schools starting an esports program can rely heavily on PCs that they already have access to such as those in a computer lab or even a single Nintendo Switch. Many leagues provide PC requirements for each game title that they offer. Newer teams can focus on ensuring that they have access to the number and level of hardware for their initial competitions and then scale in future seasons or years. For instance, *Overwatch* teams have six members and would need six PCs for game play while *Rocket League* teams have three members and could use either consoles or PCs for competition.

Esports programs will benefit from establishing a clear vision, including which games will be played, specific career or curricular connections, and local or league requirements. Consider which PCs and peripherals meet the program's unique needs. Next, consult with school and district administrators, athletic directors, IT staff, and league representatives to make certain that all requirements are met from a competition and infrastructure standpoint.



Conversation Starters

Here are some Conversations Starters to use during Phase 2 - Establishing Presence:

Focus on Students

How can an esports STEM summer camp support accelerated learning or extended year programs?

Focus on Self

What are our team's priorities for joining a league?

Focus on Others

How are other schools in our district or area supporting esports? How might we learn from or partner with them?



Phase 3: Launching Community

Fostering Community

After the team is up and running, what will ensure it stays successful? As with any team, it's important that esports teams not only achieve wins in their chosen competitions, but that they have a healthy culture that helps ensure their continued presence in their school.

Team culture is fostered over time as players and coaches build trust. To begin, a team charter can be helpful in articulating the team's goal(s) and norming behaviors. A few items to include in the charter might be:

- The articulated goals for why the team exists.
- What is viewed and expected as respectful behavior. Many leagues provide resources similar to this "Code of Conduct."⁶⁷
- Wellness and GPA requirements.
- Other expectations.

Beyond establishing guidelines for how the team interacts with each other, consider other methods of creating a presence and identity for the team within the school. Garden State Esports recommends jerseys for each team as it helps the students feel a sense of belonging and membership.

Williamson County Schools in Tennessee launched its esports program in all 10 high schools in 2022. The district-wide program is building community by working towards a "Williamson County Cup" competition among its teams. Additionally, several students were "moved to tears" when the district presented players with Adidas jerseys.⁶⁸

Also, work to establish the team in the school through pep rallies, announcements, social media, and other areas. By opening up matches to spectators, teams can build enthusiasm, awareness, and camaraderie while providing non-playing team members an authentic audience. These approaches celebrate team members' accomplishments and advertise to prospective future members.

⁶⁷ Source: [Free High School Esports Clubs Code of Conduct](#)

⁶⁸ Source: [An ecosystem of talent: Williamson County Schools introduces esports partnership](#)

Sample Program Schedule

	Monday	Tuesday	Wednesday	Thursday
Practice - Bank 1 of PCs	<i>Rocket League</i>	<i>SMITE</i>	<i>League of Legends</i>	Open Play
Competition - Bank 2 of PCs	<i>League of Legends</i>	<i>Rocket League</i>	<i>SMITE</i>	<i>League of Legends</i>

ALL EVENTS START AT 4 PM.

Managing a Team

Once established, the coach can then help determine meeting times based on their availability and the league schedule. Considerations include whether the team will be an elective during the school day or will meet and practice before or after school. Meeting more than once a week allows players to practice together, discuss strategy, scrimmage, and engage in tournament play.

Commonly, esports leagues will establish regular competition days and times for each of the offered games, which may help reduce the number of gaming stations needed and allow players to compete in multiple games.

Finally, for an esports coach (or any other type of organization), there is no substitute for communicating with and learning from other esports coaches. New coaches can reach out on social media, locate other coaches at nearby schools, and research meet-ups and conferences to foster fellowship and exchange advice. Many leagues utilize Discord* for coaches and captains. This communication platform allows coaches to share ideas and develop relationships with one another.

As esports coach Aviles says, “You don’t need coaching experience or game experience to use esports to help make your kids better players and better people; there is a wonderful #esportsedu

community willing to help. Everything that students can learn playing ‘real’ sports can be learned in esports including social skills and teamwork. And esports taps into a segment of your school that may not have a home-school connection while getting them excited for a career path they might not have known existed.”⁶⁹

Aviles shares more insights from his experiences coaching esports teams in his Teched Up Teacher blog.⁷⁰



Conversation Starters

Here are some Conversations Starters to use during Phase 3 - Launching Community:

Focus on Students

How can our program foster an inclusive experience and culture for all students?

Focus on Self

How can we structure aspects of our matches like local opponents or traveling for in-person matches to improve our program's mission and vision?

Focus on Others

What partnerships might be leveraged on and off campus to support esports?

⁶⁹ Source: [What I've Learned From Coaching An Esports Team](#)

⁷⁰ Source: [What I've Learned From Coaching An Esports Team](#)

Addressing Common Myths

After establishing a shared definition, it's essential to further educate stakeholders on the value of esports and to articulate justifications in the face of common myths. Depending on the level of reticence, it may be valuable to address these beliefs prior to or in conjunction with introducing the benefits.



Myth

K-12 esports programs are primarily about competition.



Truth

Modern K-12 programs affect a school's ability to provide an equitable education, contribute to strong college & career readiness in areas like STEM, and support improved health and well-being.



Myth

Esports are expensive and avert money from academic areas that lack funding.



Truth

Investing in esports directly supports common curricular priorities such as STEM and CTE. Curriculum also exists that connects to ELA and Well-being.



Myth

Coaches have to be skilled gamers.



Truth

Coaches need to foster a positive team environment and can learn strategy later from the students or online. Often, students look towards their favorite teachers when seeking a coach.



Myth

Gaming is a loner activity and a waste of players' time.



Truth

When esports programs emphasize social and emotional development, players gain lifelong skills that help them interact with others, problem solve, and communicate effectively.



Myth

Participating in esports will negatively impact student academic progress.



Truth

Students on Complete HS's esports team experienced individual growth and achieved 1.5 GPA points higher than the school average.⁷¹



Myth

Esports programs can save money by not buying jerseys and buses.



Truth

In-person play helps students treat competitors as real people and improves respect among players and teams. Jerseys build a student's sense of belonging and improve well-being.



Myth

Esports leads to an unhealthy lifestyle.



Truth

Many leagues provide guidance and resources around physical and mental health. Being a member of a community can increase a student's sense of belonging.

⁷¹ Source: [High School Esports League \(HSEL\) Partners with Kansas School District](#)

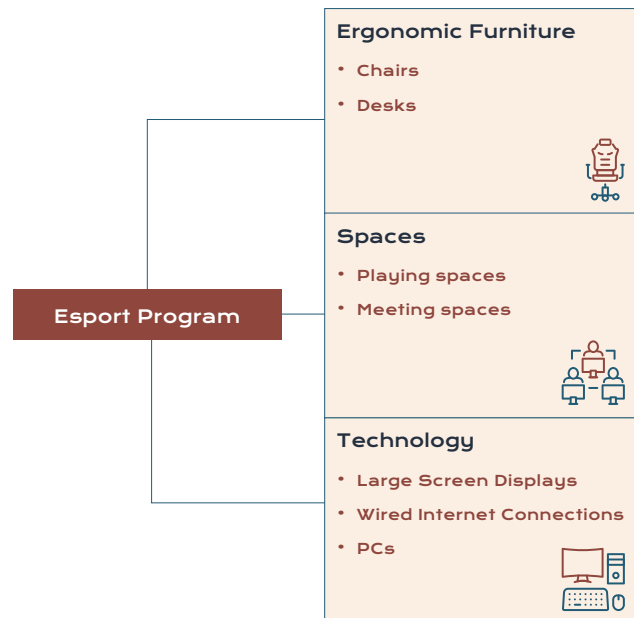


Esports Hardware and Innovation Spaces

Think for a moment about the spaces available to athletes in a traditional sport at the professional, collegiate, and high school levels. Professional basketball teams play in huge arenas and have state-of-the-art facilities for training and practice. Collegiate basketball players don't have quite the same caliber of spaces, but colleges and universities do strive to provide the best resources possible to attract the best athletes and coaches. The average high school basketball player competes and practices in spaces that pale in comparison, but high schools attempt to provide at least a minimum level of requirement.

Esports teams operate in a similarly wide spectrum across the professional, collegiate, and high school levels. And while high schools aren't expected to provide professional-level spaces and hardware, they do need to meet a basic level of support for their esports athletes.

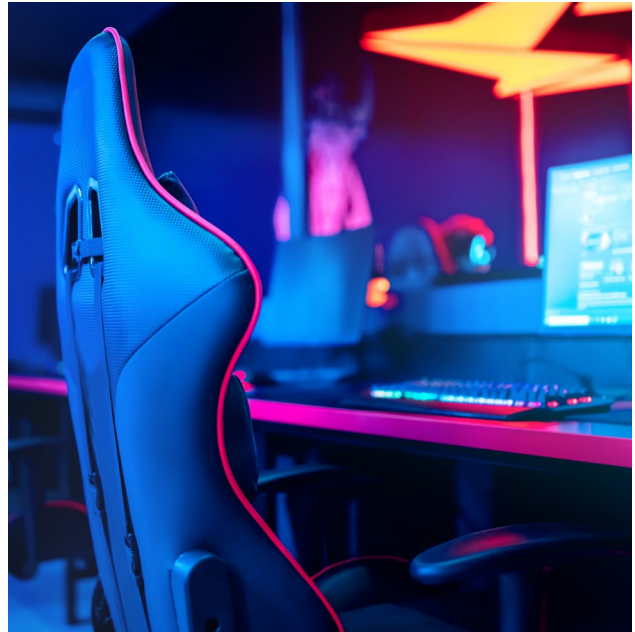
The following figure summarizes the space and hardware considerations for an esports program:



The good news for high schools is this set of minimum requirements can and should be multi-purpose. In addition to being the home base for the esports program, the hardware and space provide the foundations for modern learning environments for all sorts of CTE and STEM applications and can even begin in an existing computer lab. Indeed, when deciding about the space and hardware for their esports teams, high school decision makers should consider their larger vision. Instead of basing their purchasing on the requirements for specific games, they should base their decisions on how the technology and space will benefit students both in their esports program and in the entire school community.

Often schools adopt a gradual approach to implementing an esports program. They might start small, providing a space for students to bring in their own gaming consoles and compete against one another after school. As the esports team becomes more competitive, the natural next step is moving to PC-based gaming that allows for more powerful cross-platform competition.

Purchasing for esports programs is different than for other education technology. With esports, system performance can correlate directly to an athlete's performance in a game. It can cause the refresh cycle to be faster, avoiding "lag" that drastically shifts a player's ability to compete in an online, real-time environment. Many schools begin their esports programs with existing technology infrastructure and a handful of upgrades to the CPU and graphics cards. Then, over time, they will often upgrade their PCs based on their needs.



When deciding about the space and hardware for their esports teams, decision makers should consider their larger vision. Instead of basing their purchasing on the requirements for specific games, they should base their decisions on how the technology and space will benefit students both in their esports program and in the entire school community.

Desktops or Laptops	Existing Computers	Other Considerations
<p><i>Programs will want high-end Intel powered PCs with dedicated graphics cards. Esports should be seen as an investment in STEM and/or CTE programs as the same devices used for esports can be used during the school day to enhance STEM and CTE offerings for students.</i></p>	<p><i>Most Intel powered PCs built within the last 3-5 years should work for basic esports, though software, accessories, and associated equipment will need to be upgraded as your program evolves.</i></p>	<p><i>Schools on a budget may consider getting Nintendo Switch devices. Chromebooks, however, aren't designed for esports.</i></p>

Recommended Specs

Good	Better	Best
<p>CPU: Intel® Core™ i5 RAM: 8GB GPU: iGfx Monitor: 60-120hz</p>	<p>CPU: Intel® Core™ i7 RAM: 16GB GPU: dGfx Monitor: 144-240hz</p>	<p>CPU: Intel® Core™ i9 RAM: 32GB GPU: dGfx Monitor: 240-360hz</p>

Hardware Options

Computers

Different games publish their own set of minimum computing requirements. Here are some general considerations to ensure athletes can compete.

Operating System: Some games can be played across platforms, but Windows-based PCs dominate the esports landscape and will generally give an esports program the most versatility.

Laptop vs. Desktop: Laptops provide the added benefit of easy portability when a team travels to esports competitions. But because travel is minimal in the world of esports—a fortunate money-saving feature— desktop PCs can give players more power to game and multitask, as well as greater flexibility to upgrade memory and graphics components in the future.

CPU: The processor inside of a gaming computer affects everything from frame rate to general stability to battery life (for laptops). A PC with an Intel® Core™ i7 processor will provide a competitive platform for game play. Higher-end processors may be needed if the esports program plans on streaming and/or recording gameplay, since encoding video requires additional processing power. Purchasing a 12th Gen Intel® Core™ processor provides superior gaming performance while delivering the flexibility to seamlessly multitask. Innovative new architecture matches the right core to the right workload, so background tasks won't interrupt gameplay. Players also have the freedom to chat, browse, stream, edit, record, and play without skipping a beat.

Memory: RAM, or the short-term memory of a computer, is vital to smooth and fast gaming. Many games list 8GB of memory as the minimum requirement, but 16GB is becoming the standard in many gaming setups.

Storage: High-speed, solid-state drives (SSD) give systems quicker access to gaming and media storage. The absence of moving parts decreases the likelihood of hardware failure.

GPU: If planning to play games at 4K resolution, the gaming systems will need to push twice the number of pixels as 1080p. Serious competitive gamers need the best possible frame rates, with 144 frames per second as, typically, the bottom limit. Once a gamer has played competitive games at higher refresh rates, it may prove frustrating to play on a computer that can't keep up, so it is worth the extra investment if you're looking for a dedicated card for gaming and esports.

When deciding on the number of gaming computers an esports program will need, consider the team's game of choice. Teams of three compete in *Rocket League*, so at least three PCs are needed, and up to six if athletes will scrimmage internally for practice. Other games will require additional gaming setups. *League of Legends*, *Dota 2*, and *Overwatch* have five and six players on a team respectively.

Monitors

More so than with other education technology applications, the monitor is extremely important in esports. A slight lag in response time can have an enormous impact on game play and viewing a live tournament. While the computer hardware outlined above will ensure a balanced gaming system, choosing the right gaming monitors will ensure the computer power is actualized in the gaming experience. When choosing a monitor, it is important to consider the following:

Resolution: the number of horizontal and vertical pixels

Screen size: the viewable area of a monitor

Refresh rate: the frequency with which the image on the screen is refreshed, measured in hertz or frame per second

At a minimum, high school esports programs should consider a 1080p monitor with a 144Hz refresh rate, twice as fast as the standard 60Hz monitors.

Networking

While most other parts of high school technology are prioritizing Wi-Fi, hard-wired Internet is still preferable in esports. For reliability and speed, ensure that the locations of esports practices and competitions have access to Ethernet connections.

Input-Output Devices

Esports also require a different set of input and output accessories for gaming setups, and many high schools are also adding these items as their programs grow:

Keyboards: Many players prefer mechanical keyboards over the traditional and more common membrane variety. The spring-activated switches give players a much better feel.

Headsets: Players will need headsets with mics so they can communicate with their teammates inside a game during competition.

Controllers: Depending on the games chosen, external controllers or gaming mice for gameplay may be required.

Esports Spaces

In addition to planning for appropriate hardware, decision makers need to think about where their budding esports club or team will meet, practice, and compete. Again, as with the hardware, the space can grow as an esports program develops. Remember, the space can and does serve multiple purposes. Consider how the space can benefit students in other classes and programs, including CTE applications.

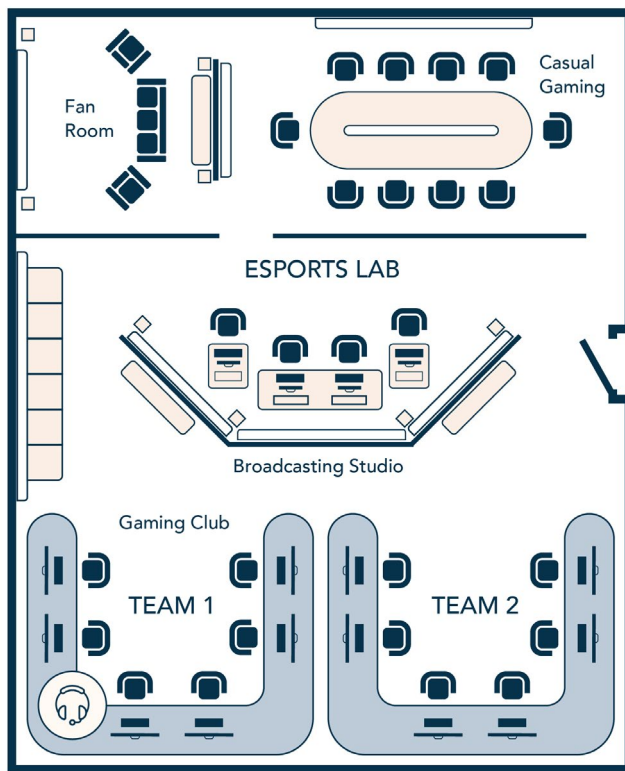
“Alex Egan’s graphics classroom at Naperville North High School can hold 26 students. Plenty of space, he thought, for an introductory meeting about a new esports program...[but] students kept piling into the room, doubling the attendance within minutes—and then doubling it again. By the end of that first meeting last fall, more than 130 students had signed up.”

— *Overwatch at school, Daily Herald*⁷²

Chairs and Desks

Banks of gaming setups are often placed against a wall. The chairs don’t need to be gaming chairs, but they should be ergonomically designed and reinforce healthy computing habits. Esports is not a couch-based activity. Computers are often set up in groups based on the number of players on an esports squad. For example, if a school is playing *Overwatch* competitively, they may set up their computers in two groups of six.

⁷² Source: [Overwatch at school: Esports 'moving fast' toward becoming IHSA-sanctioned event](#)



Meeting Areas

Esports programs need places for athletes and coaches to work together, plan, and debrief in both large and small groups. It is helpful to include a larger monitor in these areas, so players can review film and strategy, as well as a whiteboard for discussion. These areas can also include couches and comfortable seating options, because players likely won't be in front of a computer. Fortunately, there is a lot of overlap between these types of spaces and collaboration spaces in the modern, active classroom. Many programs are also converting extra space in shoutcasting and media production rooms by separating them from the larger room and including AV equipment.

Arena or Competition Spaces

Because many tournaments and matches are played remotely, a dedicated competition space is usually not necessary, especially at the start. Consider how meeting areas can double as places where audience members can watch their peers compete. As a program develops, decision makers can start thinking about how to use some of a school's larger assembly areas, such as gymnasiums or theaters, as esports arenas.

Other Considerations

Gaming PCs can give off a lot of heat, and excessive heat can affect performance and even cause temporary or permanent malfunctions (not to mention player discomfort). The two main options here are an air cooling solution (the most common and affordable choice) or a liquid cooling solution (superior performance, but may be more than some setups require). Another key requirement for your esports space is a stable and robust power system, as well as a backup plan if the power goes down. You're going to be setting up a great deal of electrical equipment, with many players and assorted team members, shoutcasters, etc. tapping into the power supply to charge their computers.



Closing Thoughts

Maturing esports programs address far more components of a school's culture than simply providing an avenue for students to play games or compete. Instead, modern K-12 esports programs have far larger effects on a school's ability to provide equitable education environments, stronger college and career readiness in important areas like STEM, and support for improved student health and well-being. By emphasizing one or more of these connections, esports programs demonstrate clear value to a school community both inside and outside of the classroom while also appealing to stakeholders, such as administrators or families, resulting in support and buy-in.

Additional Resources

- Cynopsis Esports (<http://www.cynopsis.com/esports>): industry information, links to jobs (relevant to CTE discussion).
- Dot Esports (<https://dotesports.com>).
- Electronic Gaming Federation (<http://egfederation.com/high-schools>).
- Intel, "Transforming the Future of Esports," (<https://www.intel.com/content/www/us/en/gaming/esports.html>): Intel's industry-focused landing page on esports.
- Super League (<https://www.superleague.com/aboutus>).
- Aviles, Chris, et al. *The Esports Education Playbook: Empowering Every Learner Through Inclusive Gaming*. Dave Burgess Consulting, Incorporated, 2020.