

## **Examining the impact of esports program on higher education: A systematic literature review**

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### **Abstract**

This Systematic Literature Review examines the impact of an Esports program in higher education institutions. This study will analyze various articles to show how colleges and universities that incorporate an Esports program can have several benefits from generating an additional stream of revenue, to fostering inclusion amongst the student body. Also, this Systematic Literature Review will examine how students participating in an Esports program can lead to STEM career opportunities. Students who take part in an Esports program can develop workforce development skills as they begin to enter into industry. This research will examine the advantages and challenges of establishing an Esports program in a college or university. This study will implement Pearl Brereton's method in which articles will be evaluated to determine if they meet the inclusion and exclusion criteria. The following themes are examined in this study: marketing, revenue, scholarships and workforce development skills, and toxicity and incorporating inclusion. This paper explores how higher education institutions leverage and overcome challenges in implementing an Esports program that can benefit the college and support the student body.

**Keywords:** esports, inclusion, toxicity, STEM opportunities, marketing, revenue, scholarships, workforce skills

### **Introduction**

There are dedicated Esports Tournaments for specific gaming titles, including the NBA 2K series, Madden Series, and Overwatch (Carfagna, 2020; Newham et al., 2022) (Newham et al., 2022). This Systematic Literature Review addresses the numerous benefits of implementing an Esports program in higher education institutions i.e. marketing, revenue, STEM opportunities, scholarships, and workforce skills. Also, this study highlights the challenges and risks regarding incorporating an Esports program at a higher educational level. This research will contribute to the constant and ever-evolving Esports Industry and Higher Education. This study will be instrumental for higher educational organizations seeking to incorporate an Esports program for their institution.

### **Problem Statement**

Esports have progressed since becoming mainstream in the 2010s. Darvin et al. (2021) noted that Esports have become the mainstream in which competitions are televised and viewed online. There are countless tournaments locally within the United States and worldwide. In academia, universities globally support and provide Esports gaming clubs and curricula. These programs are in place for students who have a passion

for and are seeking a career in the Esports industry (Jenny et al., 2021). Jenny et al. (2021) state that only seventy-four higher education institutions provided ninety-five Esports programs which ranged from a master's degree to a diploma. Higher education institutions are realizing that implementing an Esports program could lead to potential employment for students. How can higher education institutions leverage and overcome the challenges when implementing an Esports program that would benefit the college and support the student body (Jenny et al., 2021)?

## **Purpose of the Study**

This study aims to examine the impact of implementing an Esports program at the higher education level. Higher educational institutions can take advantage of this platform which can increase revenue. Also, Esports programs can serve as a catalyst in which students can develop workforce skills, obtain scholarships, and explore career opportunities in the STEM arena.

## **Research Questions**

RQ1: What are the key findings of incorporating and leveraging an Esports program at a higher education institution?

## **Research Objective**

This research will examine the impact of an Esports program on higher education. This study will summarize and serve as an introductory point for future colleges and universities that are thinking about developing an Esports program for their organization. This study will highlight many possibilities and challenges that colleges and universities will face when incorporating an Esports program. In addition, this study will not only contribute to future studies in the Esports industry but also in post-secondary education.

## **Review of Literature**

In this section, this paper presents a review of the literature in which there will be a series of articles that explore how incorporating Esports in higher education can impact the student body regarding soft skills and teamwork. This review will evaluate and synthesize articles about the impact and growth of Esports competitions in higher education. Also, this review explores an Esports curriculum from a non-traditional versus a traditional academic setting. Furthermore, this section covers how students who participate in Esports competitions can find a career pathway through STEM education.

## **Higher Education and Esports**

Esports programs at the time of this writing continue to grow in universities in the United States and globally. Jenny et al. (2021) state that several universities offered Esports degrees including Danube-University Kerns in Austria which offered a Master of Science in Esports and Competitive Gaming along with Becker College in the United States and Staffordshire University in the United Kingdom which these colleges offered a bachelor's degree in Esports. According to Kauwelo and Winter (2019), In 2017, 40 colleges invested four million dollars in developing and implementing an Esports program. In 2018, two hundred universities and colleges supported an Esports program in which they offered fifteen million dollars in scholarships (Kauwelo & Winter, 2019). Kauwelo and Winter (2019) state the following:

In 2014, Robert Morris University was the first university to declare Esports as a collegiate sport. In 2016, the University of California in Irvine was the first college to officially offer Esports

scholarships to students. Furthermore, in 2017 the University of Utah was the first college in a major conference in the National Collegiate Athletic Association (NCAA) to offer Esports scholarships to students. (p. 35-36)

### **Improving Soft Skills and Fostering Teamwork**

In today's fast-paced and digital world, students need to be able to communicate and articulate their thoughts and ideas in the classroom and the workplace. In the age of social media and mobile technology, students participating in Esports can bridge the gap and improve their communication skills overall. These skills can bring more success as they advance in their professional career. Zomer et al. (2021) noted that gaming has been an area of interest in education and teachers would like to incorporate this platform into their curriculum as a method of instruction to students in the classroom. They pointed out that current gaming titles have been instrumental in the development of soft skills in which students are more aware of current global issues.

Another effect of incorporating an Esports program in a post-secondary institution is the improvement of teamwork in which students will have to collaborate and cooperate by participating in a multiplayer online environment (Zomer et al., 2021). Dekker and Slotboom (2021) state that incorporating a gaming environment in the classroom will promote inclusion among the students in which they can interact with each other. Jenny et al. (2021) state that when students participate in an Esports environment they will learn how to work as a team and build effective communication skills that will transfer into the workplace. Participation in Esports can be an opportunistic avenue for socially awkward individuals who struggle with direct social interaction. Pizzo et al. (2022) stated that joining an Esports competition for socially awkward individuals can serve as a platform to connect with a community with a diverse group of individuals.

### **Emotional Skills and Cognitive Ability**

Students who take part in Esports may further develop problem-solving skills along with improving overall creativity. Zomer et al. (2021) mentioned that sandbox and puzzle games such as Minecraft fostered and simulated creativity among gamers. Along with developing critical thinking skills, gaming can improve the attention levels of an individual in which the gamer can focus on a specific goal. Dekker and Slotboom (2021) highlight the many effects of participating in recreational gaming that can improve overall cognitive ability and social skills. Regarding emotional behavior, they state how participating in gaming can build emotions positively, which in turn promotes social behavior (Dekker & Slotboom, 2021). In academia, recreational gaming can be instrumental in improving overall self-esteem, confidence, and performance. Dekker and Slotboom (2021) highlight this point by stating how recreational gaming can lead the player to achieve a common and singular goal which can lead to an increased commitment, drive, and high self-esteem along with less anxiety.

### **Non-Traditional vs Traditional Education**

Universities and colleges have offered Esports programs in an academic setting and a non-traditional route as well. Regarding non-traditional routes of Esports education, Jenny et al. (2021) state that this type of program offers an Esports certification program. One advantage of this format includes smaller classes and specifically subject-focused in contrast to their traditional academic counterparts. In addition, the non-traditional route can prepare an individual for a future career in Esports whether from management to coaching. The non-traditional route can serve as an alternative for those individuals who are not interested in enrolling in a traditional university to earn a four-year or advanced degree.

For students who are interested in enrolling in a traditional academic setting, Jenny et al. (2021) state that today's colleges and universities offer bachelor's and master's programs. Also, they offer undergraduate, and graduate certificates and technical degrees as well. Jenny et al. (2021) The most common academic credential that the majority of students obtained was a bachelor's degree (Jenny et al., 2021).

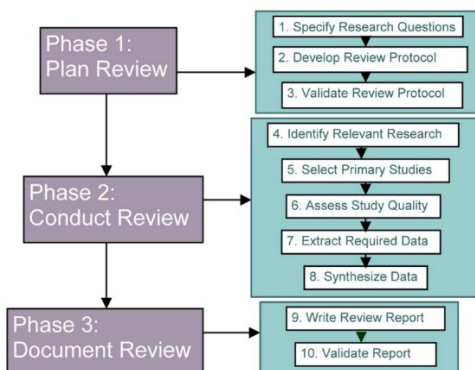
Scott et al. (2021) state that the emergence of the Esports platform has educators considering the skills that can be learned and developed in the classroom which can transition into the industry. For an Esports program to be successful in higher education, faculty, staff, and administration must embrace the growing platform and understand that there are career opportunities for students who choose to participate (Scott et al., 2021).

## Challenges and Risks

When it comes to incorporating an Esports program in a post-secondary institution there will be challenges and risks. According to Pizzo et al. (2022), North American universities and colleges are hesitant to invest in an Esports program since video game developers and social media platforms control their video games and content respectively. Pizzo et al. (2022) state challenges that include toxicity, diversity and inclusion, job security, and sustaining health insurance are additional barriers that higher education institutions must confront when implementing an Esports program. Linkinen (2021) states that students who take part in an Esports program may be exposed to mature content which can lead to a hostile and toxic environment.

## Research Methodology

This study adopted the Systematic Literature Review technique developed by Pearl Brereton. Previous and past works related to Higher Education in conjunction with Esports will be reviewed and analyzed. This study adopted a three-step process that included: planning, conducting, and documenting.



**Figure 1** Brereton's Systematic Review Methodology

*Note.* Brereton's System Review Methodology includes three phases which include the following: planning the review, conducting the review, and documenting the review. From "A Study of Computing

Undergraduates Undertaking a Systematic Literature Review” by Pearl Brereton, 2011, *IEE Transactions on Education*, 54(4) p. 559 <https://doi.org/10.1109/TE.2010.2090662>

## Planning the Review

The purpose of this review is to explore past and current research regarding the impact of Esports on higher education.

## Identifying the relevant literature

Here are the following terminologies that will be identified and used in this study.

**Table 1:** Literature Terminology

Retention
Student Enrollment
STEM opportunities
Scholarships
Revenue
Marketing
Workforce Skills
Inclusion

Also, this study will use specific terms to conduct a thorough search of previous works and articles:

- (Esports AND Higher Education) AND
- (STEM opportunities AND Careers) AND
- (Revenue AND Retention) AND
- (Student Enrollment AND Workforce Skills) AND
- (Scholarships AND Marketing) AND
- (Esports AND Challenges) AND
- (Esports AND Risks) AND
- (Esports AND Challenges AND Higher Education) AND
- (Esports AND Risks AND Higher Education)
- (Esports AND Inclusion)

Google Scholar, Scite, Semantic Scholar, and Galileo were the selected databases used to generate high-level search results about Esports and higher education.

## Selection of primary studies

Categorizing inclusion and exclusion criteria ensured that this research used only relevant literature. Each article was carefully reviewed and assessed using Table 2’s criteria.

**Table 2:** Inclusion and exclusion criteria

ID	Specific Criteria for Evaluating the Report
S1	Does the research focus on Esports?
S2	Does the research focus on Esports and higher education?
S3	Is the research study analyzed or discussed?
S4	Are there gaps, limitations, and future research opportunities regarding the impact of Esports on higher education?

## Inclusion & Exclusion Criteria

“Prospective studies for systematic reviews are evaluated for eligibility on the basis of relevance and acceptability (Robey & Dalebout, 1998),” (Meline, 2006, p. 22). Meline (2006) states that the following questions should be considered when developing a systematic review: Does the study meet the researcher’s purpose? Is the study acceptable according to the researcher’s criteria? The table below outlines the inclusion and exclusion criteria for this study.

**Table 3:** Specific criteria for the evaluating studies

Include Criteria	Exclude Criteria
Qualitative, Quantitative, or Mixed Method Study	Individual Level Study
Research published from 2003 to 2024	Research published before 2003
English Language Only	Other languages not accepted
Full-text paper	Shorter than six pages

## Analysis

For this research, keywords that were identified at the beginning of this study were used to search for articles from the following databases: Google Scholar and The International Journal of Esports. The period that was searched for these articles was between 2003–2024. The inclusion and exclusion criteria were used to evaluate each paper that was discovered through manual searches. Fifty articles were searched and assessed and only nineteen articles met the inclusion criteria. Here are the following publications that meet the inclusion criteria.

**Table 4:** Publication List

Authors
Anderson et al., 2018
Banfi, 2023
Brereton et al., 2007
Carfagna, 2020
Darvin et al., 2021
Dekker & Slotbloom, 2023
Jenny et al., 2021
Newham et al., 2022
Meline, 2006
Newham et al., 2022
Delello et al., 2021
Scott et al., 2021
Zomer et al., 2021
Nielsen & Hanghøj, 2019
Kauweloia & Winter, 2019
Pizzo et al., 2022
Stewart & Price, 2022
Brereton, 2011
Block & Haack, 2021

This study contains various articles to answer the research question. From analyzing these articles, here are the following themes that will be discussed regarding higher education institutions incorporating an Esports program:

- I. Toxicity and Promoting Inclusion and Diversity
- II. Workforce Development Skills and STEM Careers
- III. Marketing, Revenue, and Scholarships

## Discussion

Colleges and universities can incorporate an Esports program to generate revenue, promote workforce development skills, maintain retention, promote STEM career opportunities, and promote inclusion and diversity amongst the student body. Higher education institutions can implement an Esports program as an added revenue stream. According to Stewart and Price (2022) in 2023 the projected revenue for the Esports industry was approximately 1.5 billion dollars. Higher education institutions should implement an Esports program because the gaming industry has surpassed film and television combined (Block & Haack, 2021).

The gaming industry has gained momentum in which gamers have spent approximately 139 billion dollars on a multitude of gaming platforms. In 2019, approximately 2 billion people were following and keeping up with the Esports industry. In 2023, it was projected that the Esports industry would have close to 650 million followers (Block & Haack, 2021). Higher education institutions can capture and participate in this phenomenon. In this section, this paper will discuss the benefits and challenges of incorporating an Esports program in higher education institutions.

## Toxicity and Promoting Inclusion and Diversity

Higher education institutions can incorporate an Esports program to promote inclusion and diversity amongst the student body on campus. Diversity and inclusion continue to be a major challenge due to the levels of toxicity in the Esports industry for the past several years.

According to Amazan-Hall et al., (2018):

In the United States, the Esports industry has continued to boom but there are still challenges promoting diversity and inclusion in which it has low female viewership at fifteen percent along with thirty-five percent amongst the Hispanic and the African American communities respectively. Taylor (2017) the reason for the lack of inclusion and diversity in the Esports Industry is due to the toxicity towards women and people of color. In the history of Esports, it has maintained a level of sexism, racism, and harassment amongst online female players. Despite these levels of toxicity, there have not been any serious efforts to combat these elements in the Esports Industry.

Since the arrival of video games, there has always been some level of toxicity in the video gaming community. Cote et al., (2023) state that players who are not white, straight, young, and male will face some form of toxicity whether racial, gender, or sexual. The same level of toxicity intensifies in competitive video gaming spaces as well. It is challenging for African and Latin American communities to enter an Esports environment due to the level of societal stereotypes. Due to these stereotypes, these communities inevitably will face some form of racism in an Esports environment. Cote et al., (2023) state Ortiz (2019a, 2019b) and Gray (2013, 2014) that African Americans are considered outsiders due to stereotypes. Asian Americans despite being pre-dominant in the Esports community will experience some form of toxicity through racism and xenophobia from their non-white counterparts (Cote et al., 2023).

To have a successful Esports program, colleges must promote a culture of inclusion and diversity (Cote et al., 2023). There are several ways that a higher education institution can promote inclusion in its Esports program. Colleges and universities can form a gaming club to promote diversity which in essence can lower and combat toxicity. Higher education institutions that supported student-driven gaming clubs were more diverse, especially regarding female representation. Also, colleges and universities that support gaming clubs tend to be more welcoming and accepting with less pressure (Cote et al., 2023).

Cote et al., (2023) state the following:

The college or university's administration must understand the impact of toxicity in an Esports program. By having an understanding, of the effects and consequences of a toxic Esports environment, the administration can offer solutions to solve problems, but they will be emboldened to promote diversity not only in the Esports program but as an organization.

By promoting inclusion, colleges can minimize the levels of toxicity along with promoting diversity in their Esports program which is crucial.

## Workforce Development Skills and STEM Careers

Higher education institutions that incorporate an Esports program as part of their organization have the possibility of promoting workforce development skills along with a career in the STEM arena to their student population. Students who take part in Esports competitions can potentially find a career in STEM. Anderson et al. (2018) stated how students who participate in Esports can find a pathway to a STEM Career whether from enrolling in a college preparation or a career technical track. Anderson et al. (2018) state how learning mathematics and data analysis are parallel to a career in Esports coaching. Esports coaches

must form a strategy and determine what variables are in play to guide their team to successfully win a competition. Multiplayer video games such as League of Legends were used in which students were responsible for maintaining the services of this platform. The experience of troubleshooting and maintenance that students gain can lead them to a career in Information Technology (Anderson et al., 2018). Anderson et al. (2018) stated how Esports players who use streaming platforms such as Twitch and Vimeo to record their gaming experience can lead to a career in Marketing and Sales. Business leaders in the Esports industry are urging colleges and universities to embrace and accept Esports as a platform that can present career opportunities to students (Scott et al., 2021). Students who take part in Esports will use information and communication technologies to navigate this platform. These skills can translate to a STEM area which is crucial for a student's educational development (Scott et al., 2021).

### **Marketing, Revenue, and Scholarships**

Colleges may offer scholarships to students by participating on their Esports team to compete against other universities around the nation. Universities and colleges today realize the financial opportunities that they can capitalize on by immersing themselves in the Esports realm. Colleges and universities in the United States see Esports as a business opportunity in which it can generate revenue. Higher education institutions are hoping that they can take advantage of the Esports platform in which it can capitalize like college football and basketball. Both these sports generate billions of dollars annually in the college landscape respectively.

Rothwell and Shaffer (2019) state:

Esports scholarships can serve as an opportunity for students who want to attend and enroll in a college in which they compete for the school's Esports team. This allows for educational opportunities for a group of students who may have been previously excluded from traditional academic or athletic scholarships (p. 5)

Esports scholarships are a primary source of funding, and they can serve as a platform to bring social change and inclusion for those students who are not interested in getting involved in traditional sports (Pizzo et al., 2022). According to Pizzo et al. (2022), implementing a scholarship program will further garner Esports as a legitimate platform in which it will be accepted and respected as part of the mainstream of professional modern-day sports. When colleges and universities decide to award Esports scholarships, this choice can not only help them attract the top Esports competitors, but it can also improve their marketability.

### **Limitations of the Study**

Higher education institutions can incorporate an Esports program to benefit the organization along with the student body. Nonetheless, further analysis and data collection on the many aspects included in this Systematic Literature Review will be required to ascertain the overall impact and efficacy. This Systematic Literature Review highlighted that toxicity is one of many challenges for higher education institutions when implementing an Esports program. However, there are additional challenges, barriers, and questions that remain. Will the college's administration, teachers, and staff embrace an Esports program? What about the cost and resources required to establish an Esports program at the college? These are open-ended questions that will necessitate further investigation and analysis for future studies.

## Conclusion

Esports programs have had a significant rise in popularity during the past two decades. Higher education institutions are investigating and using this platform to capitalize on the potential benefits it offers to their organization. Higher education institutions can take advantage of an Esports program which can generate an added stream of revenue. Students who take part in an Esports program can gain and develop workforce development skills that will eventually lead to a STEM career. Colleges and universities can implement an Esports program to market their institution and offer scholarships to students. Finally, colleges and universities must prevent toxicity and promote inclusion to have a successful Esports program.

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