

Towards a Framework to Support the Design of Esports Curricula in Higher Education

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ABSTRACT

Esports has generated an industry of increasing economic and cultural importance. In recent years, universities and other higher education institutions have responded to its growth by establishing undergraduate courses to satisfy the needs of innovators operating in the area. However, there is not yet consensus on what an esports curriculum should include. Despite being a technology-driven sector with ethical and professional dimensions that intersect computing, current ACM and IEEE curricula do not mention esports. Furthermore, existing courses tend to provide teaching and training on a wide variety of topics aside from those traditionally in computer science. These include: live events management; psychological research; sports science; marketing; public relations; video (livestream) production; and community management; in addition to coaching. This working group seeks to examine the requirements for developing esports studies at universities with a focus on understanding career prospects in esports and on the challenges presented by its disciplinary complexity. The group will identify key learning outcomes and assess how they align with industry needs, paving the way for a framework to support the design of esports curricula in higher education.

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CCS CONCEPTS

• **Social and professional topics** → **Computing education programs**; *Computing industry*; *Model curricula*.

KEYWORDS

esports, curriculum, course design, higher education, e-sports, eSports, electronic sports, vsports, v-sports, vSports, virtual sports, cybersports, eGames, e-games, e-gaming, professional gaming

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1 BACKGROUND & MOTIVATION

The esports industry is emerging as a global phenomenon of significant and increasing importance, both economic and cultural. Though esports has existed since at least the late 1990s [20], as platforms, infrastructure, and multimedia streaming have matured, it has become increasingly democratised [17] meaning it has become more accessible to members of the public. As such, in recent years the sector has been booming [10], with audiences reaching 495 million people in the early months of 2020 [15]. Ahn, Collis and Jenny [1] showed that global esports revenues surpassed \$24.9 billion in 2019, and it is anticipated that esports viewership will continue to grow following increased public awareness in the wake of the COVID-19 pandemic [8].

With this being the case, the scale of the industry is driving educators to consider the knowledge, skills, and attitudes that will be relevant to this new sector. Esports is appearing in many higher education institutions across the world [13], often in different ways and in different contexts [5]. Likewise, many students already spectate or participate in esports, expressing interests in the career opportunities that it presents. However, there does not seem to be a widespread understanding of career prospects amongst university educators. The novelty and nuances of the industry make such considerations a non-trivial endeavour.

Setting aside debates on what esports is or isn't (e.g., [4, 6, 19]) and on varying terminology (from [6]: electronic sports; cybersports; professional gaming; competitive computer gaming; and virtual sports), there isn't yet a widely accepted notion of what esports professionals do. For the most part, people in the industry are involved in a form of media creation and consumption which surrounds an activity which is similar, in at least some ways, to that of traditional sports. Some recent work places emphasis on livestreaming [7]: content that is produced, recorded, and broadcast online in real-time. This may be due to the appeal of live interaction with such broadcasts and the increasing popularity of Twitch and YouTube. However, different parts of the industry focus on different aspects of this process and at differing scales. So, although it is at least clear that a media and entertainment industry has emerged to support the spectatorship of esports, its spheres of activity are diverse and draw upon skills across a wide range of domains.

In line with these debates and this broadness, calls to action argue that commercial activities in this sector are not "studied in an adequate degree" [11]. This raises the question: what should an esports curriculum include? The disciplinary entanglement inherent to esports problematises traditional degree pathways. Anderson *et al.* argue that esports "connects to STEM entrepreneurship, and [forms] a community that natively fosters acquisition and mastery of knowledge and skills that connect to high tech sector jobs" [2]. Computing educators will, therefore, have a key role to play in the design and delivery of esports education. However, whilst there is promising work on transferable skills [9], there is a conspicuous absence of discourse on esports itself in the computing education literature. It doesn't receive a mention in CC2020 [16] and would be a timely inclusion into CS202X. Computing educators also have a role to play in nurturing critical thinking regarding esports. It faces many ethical and operational challenges [12, 14] which are relevant to computing professionals. Striving to preserve 'graduateness' in terms of reflective practice, scholarship, moral reasoning and lifelong learning (see [18]) would likely lead to critical engagement with such challenges. Thus, the state-of-the-art in esports would be driven towards a positive, equitable, and sustainable model.

In some ways this trend is reminiscent of the rise of game courses in higher education, with institutions using games as a means to attract and motivate students (e.g., [3]). However, the interface with computing departments will likely have greater complexity. Early adopters offer training and education that spans many areas aside from those traditionally in computing, such as: live events management; psychological research; sports science; marketing; public relations; video (livestream) production; and community management; in addition to coaching. As such career opportunities

cross disciplinary boundaries to a greater extent than with games. Hence, a holistic lens is necessary.

This working group will therefore assemble a framework to help educators design curricula in this area by investigating the role of esports studies in higher education. This will focus on identifying learning outcomes whilst also assessing how they correspond to industry needs. It is anticipated such insight will not only aid educators in untangling the disciplinary complexity, but will also help curriculum designers wading into the esports domain. In doing so, this work will lay the foundations for future model esports curricula.

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