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Educational Needs of the Esports Industry: A Delphi Study

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25 **Abstract**

26 Although esports has grown significantly over the past decades with educational programs expanding

27 globally, there is a lack of understanding of the specific areas where students in esports require

28 development, including technical and interpersonal skills essential for success in emerging disciplines. To

29 identify these educational needs in esports and thereby inform future research and educational

30 programs, a Delphi Study including global experts was conducted. Using an online survey, 25 experts

31 prioritized educational needs for esports based on existing programs and suggest missing elements.

32 Following this survey, 20 experts joined panel discussions to discuss the survey ranking and reach

33 consensus. The study highlighted "Entrepreneurship and Innovation", "Sport Science and Health", and

34 "Esports Management and Business" as the top three educational needs. Although aspects such as

35 "Technology and IT Skills", "Broadcasting and Journalism", and "Game Design and Development" were

36 ranked lower, the panels stressed the role of every educational need identified within this study and the

37 constant-changing environment, including short- and long-term needs. The findings underline the

38 necessity for evidence-based educational programs to support the esports industry and facilitate the

39 transition from education to employment. Further research is needed to adjust educational pathways to

40 keep up with the evolving esports industry.

41 *Keywords:* education, expert panel, competitive gaming, training

42   **Educational Needs of the Esports Industry: A Delphi Study**

43   The landscape of esports has undergone remarkable growth in recent years, transforming into a

44   dynamic ecosystem that engages players, coaches, and scholars alike. In short, esports refer to "the

45   casual or organized competitive activity of playing specific video games that provide professional and/or

46   personal development to the player" (Pedraza-Ramirez et al., 2020, p. 4). While the esports industry

47   generated revenues of US$493 million in 2016 and US$660 million in 2017 (Cunningham et al., 2018),

48   the esports revenue market is projected to reach US$5.43 billion by 2027 (Statista, 2023). Despite

49   America being the largest market, the revenue forecast for Europe shows significant growth, projected

50   to increase by 9.7% from US$1.11 billion in 2022 to US$1.79 billion by 2027 (Statista, 2023). With this

51   development including the growing number of tournaments, organizations, scholarships, and

52   sponsorships, careers in esports—such as those of professional players—have become viable options for

53   young people (e.g., Funk et al., 2018). However, as the industry expands, it faces significant challenges in

54   terms of legal regulation. Despite its growing significance, the legal framework surrounding esports

55   remains underdeveloped, both within the EU and its individual member states.

56   Recent European Parliament resolutions have called upon the Commission and the Council to

57   acknowledge the value of the esports ecosystem in the EU and develop a comprehensive, long-term

58   strategy for the industry (e.g., European Parliament, 2022). Additionally, the Parliament emphasizes the

59   need to safeguard players from manipulative practices and addictive design features. In the absence of a

60   standardized governance structure, esports are largely self-organized and driven primarily by business

61   interests (e.g., Scholz, 2019). Consequently, the EU has initiated initiatives under the Horizon Europe

62   and Creative Europe programs to advance the understanding and development of the esports sector.

63   Various facets of esports have been studied, providing insights on topics such as stress (Leis &

64   Lautenbach, 2020; Leis et al., 2024; Sharpe et al., 2024), cognition (Pedraza-Ramirez et al., 2020), skills

65   acquired through esports (Anderson et al., 2023; Zhong et al., 2022), and performance determinants

66   (Poulus et al., 2022; Sharpe et al., 2022). While existing research has made substantial contributions

67   (e.g., Baker et al., 2024), certain aspects of esports remain largely unexplored, creating a lack of

68   evidence-based practices (e.g., Cottrell et al., 2019). For example, given the need for professional

69   players to perform under pressure, empirical evidence on adapting sport psychology interventions from

70   traditional sports to esports would help ensure ethical and professional standards (e.g., Leis et al., 2021).

71   This is just one example of a gap in knowledge, highlighting the need for a greater understanding to

72   inform the educational requirements of esports.

73   As esports continue to evolve, educational programs have emerged to equip aspiring

74   professionals with the necessary skills and knowledge. As of today, there are over 115 higher education

75   programs worldwide dedicated to esports (Jenny, 2021), marking a significant increase from the 95

76   identified by Jenny et al. (2021). This growth highlights the rising recognition of esports as a legitimate

77   academic discipline and professional field. Bachelor's degrees are the most prevalent, with 37 programs,

78   followed by certificate programs (30), technical degrees or diplomas (20), undergraduate minors (16),

79   and master's degree programs (12). Esports higher education programs are offered in 14 countries, led

80   by the United States with 39 programs, followed by France (15), Japan (10), Canada (7), and the United

81   Kingdom (6). Other programs are spread across various countries, with a significant concentration in

82   Europe. Esports management and business is the most popular specialization, with 92 programs globally

83   (Jenny et al., 2024). Among these, bachelor's degrees are the most prevalent (30), followed by

84   certificate programs (25), master's degrees (9), technical degrees (15), and undergraduate minors (13).

85   Performance-focused programs are also common, especially within one- to three-year technical

86   diplomas.

87   This evidence underscores the growing academic infrastructure supporting the esports industry,

88   with a wide range of programs addressing different educational needs and regional demands. However,

89   the current educational landscape in esports stands at a crossroads, necessitating a closer examination

90   to align with the ever-changing dynamics of the industry (e.g., Jenny et al., 2024). Research is needed to

91   fill existing gaps in our understanding of esports and to guide evidence-based educational practices (e.g.,

92   Baker et al., 2024). According to Jenny et al. (2024), effective esports education programs equip learners

93   with both hard skills (i.e., job-specific knowledge, skills, and abilities) and soft skills, such as

94   professionalism and teamwork, essential for any career. As such, programs should go beyond business

95   and management to include areas like game design, player psychology, health and wellness, and media

96   production, thus creating well-rounded professionals. Furthermore, as the industry grows, educational

97   programs will need to address not only legal and ethical aspects but also other critical areas, preparing

98   graduates to navigate and shape the esports ecosystem.

99   A better understanding of educational needs in esports can help courses to support students

100   transitioning from education to employment effectively (e.g., Jenny et al., 2024). Bloom's Taxonomy, a

101   framework for categorizing educational goals, can offer valuable insight into how esports programs can

102   be designed to promote higher-order cognitive skills, ranging from basic knowledge recall to critical

103   thinking and problem-solving (Bloom et al., 1956). By integrating Bloom's Taxonomy, educational

104   programs can ensure they address the full spectrum of cognitive development required for professionals

105   in esports, from strategic decision-making to creative innovation. As a first step, the research question

106   guiding this study is: What are the key educational needs of the esports industry? To address this

107   question, a Delphi study was conducted, seeking insights from global experts and stakeholders within

108   the esports community. This Delphi study aims to improve our understanding of educational needs

109   within esports and provide a starting point for evidence-based educational practices. By engaging

110   experts, we seek to explore the educational needs in esports, ultimately better preparing students for

111   the dynamic and competitive nature of the esports industry in the long term.

112   **Method**

113   **Design**

114   The Delphi method is defined "a unique method of eliciting and refining group judgement based

115 on the rationale that a group of experts is better than one expert when exact knowledge is not

116 available" (Kaynak & Macauley, 1984, p. 90). Research discussed anonymity, controlled feedback, group

117 response, and consensus striving as key features of this approach (e.g., Beiderdeck et al., 2021; Keeney

118 et al., 2021). This method was applied to discuss the educational needs of the esports industry,

119 facilitating the collection of insights from professionals interested in sharing their experience and

120 expertise regarding educational needs of the esports industry. To foster consensus among experts, the

121 study employed a multi-faceted approach (e.g., Keeney et al., 2021). Firstly, an online survey was

122 conducted, presenting experts with a list of educational requirements of the esports industry, derived

123 from existing educational programs, as described in the introduction. This survey allowed experts to

124 prioritize these educational needs and contribute insights on any additional requirements they believed

125 were missing. Secondly, expert panels were convened to further refine the findings from the survey.

126 During these panels, the experts had the opportunity to delve deeper into the survey results, clarify any

127 ambiguities, and reconcile any disparities in opinion. This approach ensured a comprehensive and well-

128 rounded understanding of the industry's educational needs and facilitated consensus among the

129 participants. While the survey study provided a broad perspective and starting point, the panel

130 discussion allowed for deeper exploration and clarification of the results.

131 **Participants**

132   This study employed a purposive sampling process to identify and recruit experts from the

133 Esports Research Network, leveraging the first author's professional connections. Participants were

134 required to meet specific eligibility criteria: be a practitioner, researcher, or lecturer in esports;

135 demonstrate recognized experience and expertise in their field, as evaluated by the first and second

136 authors; have at least one year of experience in esports; be over 18 years old; and be fluent in English.

137 Expertise was assessed based on professional backgrounds, relevant publications, educational

138   qualifications, and perceived industry impact. The study aimed to recruit experts from multiple

139   countries, disciplines, and genders to ensure diverse perspectives. While the primary focus was on

140   academic esports experts, professionals from applied fields or those with combined academic and

141   practical experience were also included to enrich the discussion. The first author extended email

142   invitations to 30 potential participants, resulting in 25 positive responses (83% acceptance rate). These

143   experts were subsequently invited to participate in expert panels following the completion of the initial

144   survey study, with 20 agreeing to take part in the panels. This approach ensured a comprehensive and

145   diverse pool of expertise to contribute valuable insights aligned with the study's scope.

146   ***Online Survey Participants***

147   The online survey was completed by 25 experts, consisting of 21 male and 4 female experts,

148   with an average age of 34.72 years (SD = 7.41). With six experts reporting multiples roles, the experts

149   described their role in esports as the following: researcher (n = 17), lecturer (n = 6), sport psychologist

150   (n = 2), assistant professor (n = 1), lawyer (n = 1), teacher (n = 1), medical (n = 1), and official partner (n

151   = 1). On average, panel members had 5.28 years of experience in their respective roles in esports (SD =

152   4.57). In addition, 18 panelists demonstrated 5.70 years of teaching in higher education (SD = 5.00), with

153   12 experts holding a teaching certificate or license, four having completed a specialized training course,

154   four having completed other training (e.g., courses in PhD supervision, an esports specific coaching

155   badge), and four having no qualification. The experts represented four continents (Europe, Asia,

156   America, Australia) and 12 countries. When asked about their motivation to participate in the study,

157   using a scale from 1 ("not at all") to 10 ("extremely"), participants reported to have an average

158   motivation of 8.92 (SD = 1.44) to participate in the study.

159   ***Expert Panel Participants***

160   Of the 25 participants who participated in the online survey, 20 experts took part in the expert

161   panel. This panel included 17 male and 3 female experts, aged average 35.15 years (SD = 8.02). The

162   experts delineated their roles within esports as follows: researcher (n = 12), lecturer (n = 6), sport

163   psychologist (n = 2), assistant professor (n = 1), lawyer (n = 1), medical (n = 1), and official partner (n = 1);

164   with four experts reporting multiple roles. On average, the panelists had spent 5.23 (SD = 4.96) years

165   within their respective roles. In addition, 19 out of 20 experts demonstrated 5.73 years of teaching

166   experience in higher education (SD = 5.19), with 9 experts holding a teaching certificate or license, three

167   having completed a specialized training course, three having completed other training (e.g., courses in

168   PhD supervision, an esports specific coaching badge), and four having no qualification. The experts

169   represented four continents (Europe, Asia, America, Australia) and ten countries. Moreover, participants

170   reported an average motivation of 8.80 (SD = 1.54) to participate in the study, measured on a scale from

171   1 ("not at all") to 10 ("extremely").

172   **Procedure**

173   ***Online Survey***

174   After participants consented to participate in the online survey, they were asked to report

175   demographic information. Demographic data included age, gender, nationality, country of residence,

176   role in esports, area of expertise, experience in this area (in months), highest qualification, teaching

177   degree and its specifics, and their motivation to participate (rated from 1 ("not at all") to 10

178   ("extremely")). For teaching-specific qualifications, participants were asked "Do you possess any of the

179   following specific teaching qualifications?" with the following response options: i) Teaching certificate or

180   license; ii) Completed a specialized teaching program; iii) Other training-related certification or

181   qualification; iv) Other training-related certification or qualification. Participants were then asked to

182   specify their exact degree. All other questions were open-ended, allowing for flexible, free-text

183   responses. For example, participants were asked about their role in esports ("What is your primary role

184   in the esports industry?") and area of expertise ("What is your main area of expertise?").

185   Following this information, the experts were asked to rank educational needs of the esports

186   industry ("Please rank the following educational needs of the esports industry by clicking on the

187   illustrated needs in order of priority. Click the most important need first and continue in descending

188   order."). These educational needs were identified through a review of existing literature on esports

189   education (Jenny, 2021; Jenny et al., 2021, 2024) and an additional search conducted by the third and

190   fourth author. Data collection on higher education esports programs was conducted online using Google

191   between October and November 2023 in English, French, German, Spanish, and Portuguese. Inclusion

192   criteria were: a) programs offered by higher education institutions (e.g., universities, polytechnics) with

193   information available on their websites, b) degree-awarding programs (bachelor's, master's, technical

194   degrees, certificates, minors, majors), and c) esports programs in English, Spanish, French, German, or

195   Portuguese. The findings from this search were reviewed in consultation with the first and last authors

196   to ensure the list incorporated both academic evidence and industry insights. Based on this review, the

197   following educational needs were identified: 1) "Esports Management and Business", 2) "Coaching and

198   Analysis", 3) "Game Design and Development", 4) "Broadcasting and Journalism", 5) "Sport Science and

199   Health", 6) "Legal and Contractual Knowledge", 7) "Technology and IT Skills", 8) "Ethics and

200   Sportsmanship", and 9) "Entrepreneurship". Next, experts were asked to report and rank any additional

201   needs that they believed were missing in the list ("Are there any other educational needs in the esports

202   industry that you believe are important and were not mentioned in the previous list? If so, please

203   describe the additional needs, and provide your ranking for each in order of priority.").

204   The final page of the survey thanked participants for their participation and provided contact

205   information for the lead author in case they had any questions or comments about the study.

206   Completion of this survey was 8.56 min on average.

207   ***Expert Panel***

208   All participants that completed the online survey were invited to participate in a panel

209   discussion to discuss the ranking identified in the survey. Before each of the four panel discussion,

210   participants received an invitation via email and a consent form. At the beginning of each panel, the first

211   author welcomed the participants, reminded them about the study aim and design, and invited them to

212   express any concerns or questions before the session began. Next, the recording via Zoom was started

213   and the ranking of the nine educational needs from the online survey was presented, using a

214   PowerPoint overview that was created based on the mean rankings of these needs. Following this

215   introduction, the panelists were invited to express their perspective on the ranking, sharing whether

216   they agree or disagree. Example questions included "What are your thoughts on the current ranking of

217   educational needs?" and "Would you suggest any adjustments or refinements to the ranking?".

218   As expert panels progressed, PowerPoint slides illustrating educational needs were adjusted by

219   the moderator to reflect panel consensus. After the panels agreed on the ranking of the nine

220   educational needs, they were invited to discuss how the three additional needs (i.e., sociology,

221   humanities, and environmental sustainability) fit within the ranking. These additional educational needs

222   were copy pasted into the PowerPoint slide with the ranking discussed within the panels. The host of

223   this panel made sure every voice is heard and each expert has the chance to share his/her perspective.

224   For instance, after the ranking was presented, each participant first shared their perspectives before the

225   panel was invited to go into more detail. The first author also made notes during the panels to aid the

226   moderation of the panel and the discussion of the findings. These notes were also used during the

227   panels to paraphrase and summarize the progress of the discussion from time to time. Following the

228   discussion, the initial ranking was revised based on the feedback provided by the panel. Panelists were

229   invited to express their agreement or disagreement with the updated ranking. If the panel was unable to

230   reach a consensus on a particular educational need, that item was deferred for further discussion after

231   other needs were addressed. The flow of the discussion was guided by panelist feedback. The panels

232   were closed only once consensus was achieved, and panelists confirmed their satisfaction with the final

233   ranking. Throughout the panels, the first author maintained an impartial, non-judgmental, and

234   supportive demeanor, aiming to acknowledge the perspectives of all participants.

235   In response to feedback received during the first expert panel, illustrative examples were added

236   for each educational need. For instance, to facilitate discussion, nutrition and sport psychology were

237   added under "Sport Science and Health". Four panels were held between February 12 and March 18,

238   2024. On average, the recordings that started after the introduction by the first author lasted 63.78 min

239   (*SD* = 6.21).

240   ***Data Analysis***

241   Data analysis commenced with transferring data from the online survey to an Excel spreadsheet.

242   Initially, expert responses were scrutinized for completeness and validity, with no entries requiring

243   removal. Demographic data analysis were analyzed descriptively, including variables such as age,

244   gender, and experience, to provide an overview of participant demographics. Similarly, the experts'

245   rankings of educational needs were analyzed using descriptive statistics, which included calculating the

246   mean ranks and standard deviation of each educational need. Additionally, the qualitative responses

247   regarding additional educational needs reported by the survey participants underwent thematic analysis

248   (e.g., Braun & Clarke, 2006). For example, the suggestion of "Gender Equity" prompted discussions

249   between the first and second author, leading to its categorization under a new theme titled "Sociology".

250   Similarly, discussions regarding the suggestion of "History of Esports" resulted in the emergence of the

251   theme "Humanities". The addition of "Environmental Sustainability" and "Global Governance" was also

252   noted from the survey input of one expert each.

253   Further modifications to themes were implemented based on discussions within the expert

254   panels. Within the first panel, the concept of "Global Governance" was merged into the existing theme

255   "Legal and Contractual Knowledge". This discussion resulted in a consensus to rename the theme as

256   "Law", encompassing both legal aspects and governance issues. This iterative process of refinement was

257   applied throughout panel discussions to ensure that final themes accurately reflected the experts'

258   insights. After the completion of all four panels and discussions between the first and second author, the

259   developed themes were shared with the research team for further feedback and validation. The

260   research team agreed with the themes, and no further changes were necessary.

261   Final rankings from each panel were transferred to an Excel spreadsheet by the first author,

262   where each educational need was assigned a numerical value based on its ranking within the respective

263   panel. Shared rankings across panels were then calculated by determining the mean rank of each need.

264   This allowed for consolidating the view of priorities across expert perspectives. Additionally, the

265   standard deviation of these rankings was calculated to assess the level of agreement among experts,

266   with lower standard deviation indicating more agreement among participants.

267   **Results**

268   **Survey Ranking**

269   Based on the survey, the nine educational needs identified via literature research were ranked

270   as illustrated in Table 1. As shown, "Sport Science and Health" was ranked first, followed by "Esports

271   Management and Business".

272   **Table 1**

273   Educational Needs based on Online Survey

Rank	Educational Need	M	SD
1	Sport Science and Health	3.24	2.33
2	Esports Management and Business	3.36	2.36
3	Coaching and Analysis	4.48	2.20
4	Law	4.80	2.29
5	Entrepreneurship and Innovation	4.84	2.44
6	Ethics and Sportsmanship	5.00	2.31
7	Technology and IT Skills	6.16	2.72

| 8 | Broadcasting and Journalism | 6.52 | 1.83 |
| 9 | Game Design and Development | 6.60 | 2.55 |

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275 **Expert Panel**

276   As shown in Table 2, the panel discussion led to changes in the original rankings from the online

277 survey and the inclusion of three additional educational needs: "Environmental Sustainability,"

278 "Sociology," and "Humanities." The top five included "Entrepreneurship and Innovation," "Sport Science

279 and Health", "Esports Management and Business," "Environmental Sustainability," and "Sociology."

280   Even though "Sport Science and Health" were ranked second, it was discussed across the panels

281 as following:

282   "I think the ranking reflects what people like to see rather than what the industry is. I think there

283   is a perception that sport science and health needs to be more important within the industry.

284   That doesn't make it so. At least from an education perspective, broadcasting and journalism,

285   content creation, these things are higher." (Tyler, a researcher and lecturer)[1]

286   "If its sorely economy, which I assume what the esports environment is at currently, sport

287   science is at the very bottom and I assume the simple idea would be esports players can get

288   replaced, which I don't think many people argue against the fact that players are perceived as

289   that important as there are so many kids that come up and can have a place in the top players

290   any moment. However, I would like to see and I think it would be beneficial for the esports

291   realm to actually favor the player. I think it depends on which way were looking." (Blake, a

292   researcher)

293 **Table 2**

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[1] All expert names mentioned are pseudonyms.

294   Educational Needs based on Expert Panels

Rank	Educational Need	P1	P2	P3	P4	M	SD
1	Entrepreneurship and Innovation	6	4	5	2	4.25	1.71
2	Sport Science and Health	5	3	1	8	4.25	2.99
3	Esports Management and Business	1	1	7	9	4.50	4.12
4	Environmental Sustainability	2	1	12	-	5.00	6.08
5	Sociology	7	5	3	6	5.25	1.71
6	Ethics and Sportsmanship	8	10	2	4	6.00	3.65
7	Coaching and Analysis	4	7	4	10	6.25	2.87
8	Broadcasting and Journalism	9	2	9	5	6.25	3.40
9	Technology and IT Skills	10	6	8	1	6.25	3.86
10	Law	3	11	11	3	7.00	4.62
11	Humanities	11	9	6	4	7.50	3.11
12	Game Design and Development	12	8	10	7	9.25	2.22

295   *Note.* P1 – P4 represent the four expert panels rankings.

296   In general, however, the experts accounted for the importance of areas, including "Sport

297   Science and Health, with Miles (a researcher) stressing the role of health in esports players as a driving

298   factor of the industry:

299   "Things like sport science and health were quite ranked quite highly is because the change

300   currently is very dynamic. So were learning a lot and that's having an impact on performance. In

301   order to get the best out of the athletes, that potentially why its ranked quite highly and

302   especially the health aspect. Lots of the issues in sports and esports at the moment with lack of

303   longevity through mental health or physical burnout because all sorts of things, but just as a

304   counterpoint why it potentially need stop be high is because without athletes, esports athletes,

305   we don't have a competitive market."

306   The panel discussions also led to "Entrepreneurship and Innovation" moving significantly in the

307   ranking as displayed by the following expert comment:

308   "I think helping people who are entering esports to have an understanding of what

309   entrepreneurship means in the esports space is hugely important. Considering so many

310   companies are so hugely founded by sponsorship deals particularly understanding sponsors and

311   what they need, those people are being able to get companies toward the need of these

312   sponsors." (Tessa, researcher)

313   While Paul (a researcher)   acknowledged "Entrepreneurship and innovation could be the most

314 important for any degree in the world", Brad (a researcher and lecturer) added that you need to be able

315 to deal with the regional and national governments "to be able to show value proposition to make it

316 worthwhile, which is the key to everything." Independent of their final ranking, all educational needs

317 such as "Ethics and Sportsmanship", "Law", "Humanities", and "Environmental Sustainability" were

318 considered as important as illustrated by one example addressing "Environmental Sustainability": "Every

319 university should teach sustainability and what sustainability means. I know we are not doing it, but

320 technically it should be the case and it should be ecologic, social, and economical." (Tim, researcher)

321   Importantly, the experts discussed their challenges associated with ranking the educational

322 needs of the esports industry. For instance, all experts argued that all aspects are important as discussed

323 by Nelson (a researcher and lecturer): "It is very difficult to say this one is the first one, and even worse,

324 this one is the last one, because everything is, in my opinion, important". This argument was shared

325 across panels with Frank (a researcher) discussing this in light of "Game Design and Development":

326   "It's not easy to distinguish between those who are really important and which are not. For

327   example, the game design, although its rated back to the very bottom, if we don't have games,

328   we can't play. It might be very, very important to have and be able to play in the future."

329   Similarly, the panelists highlighted the inherent challenges in ranking educational needs within

330 such a rapidly evolving field time being a key factors to consider when discussing educational needs

331 given the constant-changing esports environment:

332   "The fruit of that will only be seen in the next like 3, 4, 5 years, so it's not like an immediate

333   problem-solving, that like we immediately need to solve the sport science and health part of the

334   industry, but rather like what is something that we long-term want to enable people entering

335   the industry to have more understanding about and in that sense, everything is gonna be

336   important, that's correct. But if we check back the history of esports the past 20 years, what is

337   something that might seem even more important for us to understand and that's going to have

338   like a longer term impact on the industry." (Paul, researcher)

339   Representing these challenges and indicated by "Technology and IT Skills" being ranked first in

340 one panel, Nelson (a researcher and lecturer) supported this argument in a similar way:

341   "If we look at the industry at the global level, we are struggling because in short-term and in

342   long-term what the industry needs right now is not the same what the industry will need in 10

343   years of in five years maybe. It's not easy. But I like the idea to have IT and technology at first,

344   because everything is about technology."

345   Moreover, the broad focus on the esports industry as a whole presented the experts with

346 challenges as discussed by Tyler (a researcher and lecturer):

347   "There is a distinction here between esports as a professionalized conduct and esports as a

348   culture and more generally, like if we are talking about the professionalization of video gaming

349   then that's gonna be partly shape what's at the top more than when we talk about the esports

350   culture in general."

351   To account for these challenges, Mark (a researcher and lecturer) suggested exchanging the idea

352 of building a hierarchy by a pyramid of educational needs:

353   "You can almost build it like a pyramid with the foundational courses at the bottom which extra

354   specify, you could put some of....like esports business management, law, entrepreneurship,

355   ethics and sportsmanship, almost like forming the baseline of things for people all across the

356   esports industry and help people to be successful. But then things like sport science and health,

357   coaching analysis and game design. Those things would be at the tops cause they are things that

358   people are probably most interested in and most likely to work with directly. And then

359   potentially in between them you might have sociology, humanities, and sustainability, because

360   maybe they are not quiet broad, but they are more specific to the esports industry and

361   important topic for people to take into consideration. I would build like a pyramid, that's how I'd

362   do it. I have trouble with the whole concept of a hierarchy."

363   This perspective emphasizes the necessity for an educational framework that recognizes the

364   complexities and interconnections among various educational needs in the esports industry, providing a

365   starting point for future research and practical implications, as discussed in the following section.

366   **Discussion**

367   The esports industry has grown significantly, evolving into a complex ecosystem that engages a

368   diverse range of stakeholders, including players, coaches, and scholars (e.g., Jin & Besombes, 2024).

369   Despite its rapid expansion and the proliferation of educational programs in esports, the industry lacks a

370   cohesive legal framework, standardized governance, and a comprehensive understanding of its

371   complexities. This gap highlights the need for a comprehensive, evidence-based approach to address the

372   educational requirements and ethical considerations within esports (e.g., Baker et al., 2024; Leis et al.,

373   2021). Our study provides an overview of the educational needs within the esports industry. Initially,

374   nine educational needs were identified, with "Sport Science and Health" ranking highest, followed by

375   "Esports Management and Business" and "Coaching and Analysis". Subsequent panel discussions led to

376   revisions in these rankings and the addition of three new educational needs: "Environmental

377   Sustainability", "Sociology", and "Humanities". These adjustments reflect the dynamic nature of the

378   esports industry and highlight areas that have been overlooked in the initial survey.

379   The final ranking reflects the current higher education landscape, which emphasizes

380   administration, business, economics, entrepreneurship, management, and marketing (e.g., Jenny et al.,

381   2021). However, fewer programs address coaching, health, performance, and sport science, and even

382   fewer programs focus on broadcasting, communication, media, production, or public relations (Jenny et

383   al., 2024). Given the industry's evolving nature, expert discussions prioritized "Entrepreneurship and

384   Innovation", aligning with Scholz's (2019) observation of the industry's frequent and disruptive changes.

385   While Hallman and Giel (2018) argue that skills such as opportunity recognition, risk management, and

386   innovative business model creation are crucial, industry stakeholders identified ten competencies

387   essential for esports education: business acumen, human relations, relationship management, effective

388   communication, technology management, legal and ethical practices, research and problem-solving,

389   global and cultural awareness, leadership, and critical evaluation (Karadakis & Painchaud, 2022). This

390   aligns with Jenny et al. (2024), who emphasize the importance of developing both industry-specific hard

391   and soft skills, as well as transferable skills applicable to related fields.

392   "Sport Science and Health" remained a key priority, emphasizing performance and well-being in

393   esports (e.g., Hong, 2023; Kegelaers et al., 2024), especially in light of health concerns like mental

394   health, musculoskeletal injuries, vision problems, and sedentary behavior (Bonnar et al., 2019). The

395   short career span in esports, often lasting only a few years, typically ending by age 30 due to injuries

396   (e.g., carpal tunnel syndrome) or declining reaction times, was another key issue (Thompson et al., 2014;

397   Fiore et al., 2020). This has important implications for education and career planning in esports,

398   highlighting the need for career transition strategies (Hollist, 2015). "Esports Management and

399   Business" remained central, underscoring the need for effective management and business skills (Funk

400   et al., 2018).

401   The high ranking of "Environmental Sustainability" reflects growing awareness of esports'

402   ecological impact. Nyström et al. (2022) highlight the need to address health, inclusivity, industry

403   structure, and business practices to ensure esports sustainability. While Hilty and Aebischer (2015)

404   emphasize the importance of reducing the environmental impact of gaming equipment and large-scale

405   events, Hiltscher and Möglich (2024) underscore the persistent lack of knowledge and awareness

406   regarding environmental sustainability, highlighting the need for change. The inclusion of inclusion of

407   "Sociology" acknowledges esports' social dimensions, such as community building and cultural

408   considerations. Reitman et al. (2020) highlight the importance of addressing topics such as gender

409   representation, cultural differences in esports consumption, and online community formation.

410   "Humanities" brings a broader educational foundation, with Szablewicz (2020) emphasizing history,

411   philosophy, and ethics to enhance understanding of esports' cultural significance and ethical issues.

412   While a hierarchy of educational needs in the esports industry was established, all identified

413   educational needs are important. A proposed pyramid model of educational needs, with foundational

414   areas such as "Humanities", "Law", and "Game Design and Development" at its base, could help provide

415   the flexibility and structure needed for developing comprehensive esports education programs. This

416   concept aligns with Bloom et al.'s (1956) taxonomy of educational objectives, suggesting a structured

417   approach to curriculum design in esports education. This approach could provide a solid framework for

418   developing esports education programs while remaining adaptable to the industry's changing demands.

419   **Strengths and Limitations**

420   Although this study included 25 experts participating in the online survey, and 20 experts

421   participating in panel discussions, potentially leading to blind spots (e.g., Bergen & Labonte, 2020; Collier

422   & Mahoney, 1996; Mehra, 2002). A different mix of experts could have yielded alternative insights, and

423   gender and cultural distribution of the panel may have influenced the findings. As the present study

424   focused on experienced experts, insights from scholars and practitioners entering esports might

425   different. However, the active engagement of the experts, who often interact with newcomers, may

426   help capture those perspectives as well.

427   Unlike traditional Delphi studies (e.g., Keeney et al., 2021), which ensure anonymity, this study

428   took a non-anonymous approach, encouraging open dialogue and real-time exchange. This led to

429   deeper discussions and more nuanced insights, while fostering networking opportunities among experts.

430   However, this approach raises concerns about potential biases, dominance of certain voices, and social

431   desirability bias. To address this, the first author moderated the discussions to ensure balanced

432   participation, maintained confidentiality, and acknowledged potential biases to enhance the study's

433   validity.

434   Some panelists noted potential overlap between areas such as broadcasting and journalism,

435   suggesting the need for further research. Communication challenges also arose due to the broad scope

436   of needs, spanning both scientific fields (e.g., sport sciences, law) and specific topics (e.g., ethics and

437   sportsmanship). Furthermore, "Coaching and Analysis" and "Sport Science and Health" were debated as

438   overlapping, though this distinction revealed important differences in perception. Moreover, conducting

439   additional rounds with experts might have yielded a broader consensus and more refined insights (e.g.,

440   Beiderdeck et al., 2021). A stronger focus on the specific soft and hard skills required in the esports

441   environment could have also provided further valuable perspectives (e.g., Jenny et al., 2024). For the 12

442   identified needs, this could have included skills such as developing esports startups, optimizing player

443   well-being, managing organizations, implementing eco-friendly event practices, understanding esports

444   community dynamics, promoting fair play, analyzing player performance, creating content for

445   audiences, ensuring robust event infrastructure, navigating contracts, exploring the cultural impact of

446   esports, and designing competitive gaming experience. Overall, this study serves as a starting point,

447   warranting further research to refine insights to help met the evolving demands of the esports

448   ecosystem.

449   **Practical Implications**

450   Based on our findings, we recommend esports education programs include core components

451   such as: 1) Technical skills in game design and development, 2) Esports business and management, 3)

452   Digital marketing and social media, 4) Esports law and ethics, and 5) Health and wellness for gamers.

453   Specializations in areas like event management, broadcasting, and data analytics should also be offered.

454   Given the emphasis on entrepreneurship, curricula should foster adaptable skills for the industry's

455   evolving landscape, including modules on opportunity recognition and innovative business models

456   (Jenny et al., 2024; Hallmann & Giel, 2018). To address challenges like curriculum updates, qualified

457   instructors, and technology requirements, institutions should adopt a flexible, modular approach.

458   Furthermore, we propose collaborations such as internships with esports organizations, guest lectures,

459   joint research with esports companies, industry-sponsored events, and mentorship programs (e.g.,

460   Campbell et al., 2024). Educational programs might also address career transitions and lifelong learning,

461   preparing students for diverse roles beyond professional play. While this study ranks educational needs,

462   it does not imply that lower-ranked needs are less important. The proposed pyramid model—grounded

463   in Humanities, Law, and Game Design—aligns with Bloom et al.'s (1956) taxonomy, providing a flexible

464   framework for esports education. Given that bachelor's degrees dominate the field, master's degrees

465   could offer more specialized focuses, such as sport science or esports psychology. As esports grows,

466   particularly in Europe, addressing regional demands and cultural contexts becomes essential.

467   Interdisciplinary approaches integrating sport science, business, sociology, and sustainability can better

468   prepare students for the industry's diverse challenges, including ecological challenges (Nyström et al.,

469   2022). Moreover, esports fosters not only industry-specific skills, but also transferable skills such as

470   problem-solving and teamwork that can be considered in education (e.g., Rothwell & Shaffer, 2019;

471   Zhong et al., 2022).

472   **Future Research**

473   Future research could provide more detail on the reported educational needs, for example, by

474   focusing on individual educational needs and highlight their respective contents. Similarly, research

475   could explore how Bloom's Taxonomy may guide these approaches (Bloom et al., 1956). Additionally,

476   strategies to bring these educational needs to live, such as intervention strategies or educational

477   workshops should be explored (e.g., Funk et al., 2018; Leis et al., 2021). Since educational needs can

478   vary based on national regulations and local educational programs, future research could also focus on

479   regional variations in esports education. Assessing the outcomes of graduates from existing programs

480   will offer feedback for refining curricula, enhancing students preparedness for the industry, and shaping

481   future perceptions of the value of academic esports programs (e.g., Jenny et al., 2024). Long-term

482   studies on how esports educational needs evolve over time can also help institutions stay aligned with

483   industry demands (e.g., Jenny et al., 2024). Identifying the skill development potential of esports is

484   crucial for creating targeted educational programs that enhance student learning, support teachers'

485   professional growth, and drive educational change (Zhong et al., 2022). Collaborations between

486   educational institutions and esports organizations seem crucial for talent development and for ensuring

487   curriculum relevance (e.g., Anderson et al., 2023; Baker et al., 2024). Research into the structure and

488   effectiveness of these partnerships is necessary. Finally, scholars may incorporate the Esports Research

489   Matrix proposed by Baker et al. (2024) into their studies, encompassing broad social, economic, and

490   cultural phenomena at the macro level; organizational, institutional, and community dynamics at the

491   meso level; and individual factors affecting players, fans, and spectators at the micro level.

492   **Conclusion**

493   This study identifies key educational needs in the esports industry, including "Entrepreneurship

494   and Innovation", "Sport Science and Health", "Esports Management and Business", and "Game Design".

495   "Entrepreneurship and Innovation" emerged as a key priority, highlighting the demand for adaptable

496   skills (e.g., Jenny et al., 2024). Our proposed pyramid model balances foundational knowledge with

497   specialized skills, emphasizing the need for interdisciplinary approaches to address the industry's

498   complexity. These findings offer a starting point, with further research needed to provide detailed

499   insights for refining curricula. Challenges such as curriculum updates, instructor shortages, and practical

500   training can be addressed through modular programs, partnerships with esports organizations, and a

501   focus on real-world applications. As esports expands globally, educational programs must adapt to

502   regional needs and remain flexible to industry changes. These recommendations aim to better prepare

503   students for the dynamic nature of the esports industry.

504   **Declarations of Interest**

505   None.

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507   Although this study was initiated based on discussions within the framework of a grant project,

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509   **Data Availability Statement**

510   The data that support the findings of this study are available from the corresponding author,

511   upon reasonable request.

512   **CReDiT Author Statement**

513   **A1**: Methodology, Investigation, Data Curation, Writing Original Draft, Project administration

514   **A2**: Methodology, Writing – Review and Editing **A3**: Writing – Review and Editing **A4**: Investigation **A5**:

515   Writing – Review and Editing

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