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Esport Knowledge, Skills, and Abilities: Perspectives from Subject Matter Experts

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Esport is a growing form of entertainment because of technological advancements, increased online gaming participation and competition, and technology access. Esport shares traditional sport characteristics, with players, spectators, competition, and entertainment. As the esport industry continues to grow, career offerings in esport-specific and traditional positions has demonstrated an increase in need for trained and prepared individuals. Therefore, the purpose of this study was to identify the knowledge, skills, and abilities (KSA) an individual seeking employment in the esport industry should possess. Subject matter experts were interviewed to identify the KSAs one should possess for an esport career. Ten themes appeared: Business Acumen & Strategic Approach; Human Relations Skills; Relationship Management; Effective Communication; Technology Management; Legal and Ethical Practices; Research and Creative Problem Solving; Global and Cultural Orientation; Leadership; and Critical Evaluation and Analytical Skills. Additionally, esport specific KSAs and competencies aligned with three broad organization categories: people, structure, and goals. Traditional workplace knowledge is required as well as discipline specific knowledge. There is an expectation with industry evolution, functional areas (domains) within esport will continue to emerge. Lifelong learning skills, passion, and a desire to acquire advanced knowledge will be integral to success and sustainability of an esport career.

Keywords: *esport knowledge, skills, abilities, employment*

Introduction

Esport is organized video game competitions, also commonly referred to as cybersport, virtual sport, and competitive gaming (Jenny et al. 2017). In general terms, esport refers to "an organized and competitive approach to playing computer games" (Witkowski 2012, p. 350). Specifically, esports are defined as "electronic sports (esports) involves competitive, organized or technologically enabled activities encompassing varying degrees of physicality, virtuality and technological immersion." (Cranmer et al. 2021, p. 2).

Esport is a rapid growing form of digital entertainment and becoming increasingly popular because of technological advancements, such as the increased participation of online gaming (Hamari and Sjoblom 2017), access to technology, and elite competition (Jenny et al. 2017). Additionally, collegiate esport has seen an increase in interest and support from universities across North America. According to the National Association of Collegiate Esports (NACE), more than

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170 U.S. colleges/universities offer varsity esport programs with scholarships to the players and attracting more than 40,000 players (Venero 2020). As the esport industry continues to grow in general, so have the career offerings. Hitmarker, the largest esport jobs website posted 2,497 jobs in early 2018 and reported an 87% increase in jobs offered in 2019 of 11,027. Additionally, in their Esport Jobs Report, Hitmarker estimated over 22,500 jobs in 2020, although at the time of writing only 8,884 jobs were being advertised on their website (Hitmarker 2020).

There has been ongoing debate as to the definition of esport as well as whether esport are actual sports (Cranmer et al. 2021). Arguments for or against esport being considered a sport are centered around play, organization, competition, skill, physicality, following, and institutionalization (Jenny et al. 2017). Esport encompasses several characteristics of traditional sport, including players, spectators, competition, and entertainment (Jenny et al. 2018). The debate becomes more complex because esport is the merging of culture, technology, sport and business, and unlike traditional sports, esport is an interconnection of multiple platforms synonymous with gaming (Jin 2010). Chikish et al. (2019) maintained that esport has a more multifaceted ecosystem than traditional sports, because "agents can assume multiple roles, and in this way esport and sports play should be viewed as complementary. They proposed that the esport industry is opening the new era in the sports industry" (Chikish et al. 2019, p. 61).

The esport industry offers a multitude of opportunities for participation, employment, and profit for individuals that are trained and prepared to enter the industry. Reitman et al. (2020), provides respective areas where research has emerged because of esport including business, sports science, cognitive science, informatics, media studies, law, and sociology. Other areas identified are technical disciplines such as cloud computing, networking, programming, game design, graphic design, and computer hardware design and engineering (Reavis 2021, p. 180). With the potential for entering employment in the esport industry, "covering this broad spectrum of knowledge, it is clear that no single student could reasonably expect to be an expert in more than one or a few of the domains involved nor could an individual faculty member be able to support the expanse of knowledge across these many diverse knowledge domains" (Reavis 2021, p. 180). Thus, the purpose of this paper is to provide results on the knowledge, skills, and abilities that experts in the esport industry identified that someone wanting to enter the esport industry should focus on and develop.

Literature Review

Esport is receiving interest from various areas including academics, embraced by sport management, (Jang and Byon 2020) esport has also received interest from gaming and culture, psychology and philosophy, and computer science (Cranmer et al. 2021). Like traditional sports, esport has professional players, teams, uniforms, coaches, managers, agents, leagues, competitions, marquee events, endorsement deals, player transfer fees, color commentators (shout casters), highlight reels, college scholarships, and a darker side with match fixing, doping, and gender-

related issues (Jenny et al. 2017, Li 2017, Segal 2014). All of which are potential areas of employment. The esport industry offers several career paths for individuals with knowledge, skills, and abilities, in both traditional roles and unique to esport (Hedlund et al. 2021). Esport presents different opportunities and the possibility to "incorporate and exploit emerging technologies to create new play, participation and spectator experiences, reaching new global audiences" (Cranmer et al. 2021, p. 4).

Esport viewership has continued to grow with a global viewership estimated at 435 million, of which 22% are female, and revenues expecting to reach $1.8 billion (Israel et al. 2022, Andrews and Crawford 2021). Global viewership is expected to grow from 234 million to 285.7 million esport enthusiasts, and from 240 million to 291.6 million occasional viewers by 2024 (Israel et al. 2022). As the esport industry continues to grow there have been influences from other industries and conversely esport influencing other industries, leading to a multifaceted web of interconnected organization, activities, and stakeholders, with numerous goals and objectives (Hedlund et al. 2021). With so many facets, it becomes difficult to properly identify and define employment and career opportunities (Hedlund et al. 2021). To date, we have seen esport-specific (unique) and traditional positions being offered and needing to be filled. For example, Hitmarker reported that in 2019 the largest employment segments were software engineering, marketing, design, operations, and sales; while data, project management, education, art, and engineering had the largest percentage increase in total number of jobs available between 2018 and 2019 (Hedlund et al. 2021, Hitmarker 2020).

With job offerings and the esport industry growing, qualified individuals from other industries have entered the field to fill employment needs (Hedlund et al. 2021). The demand for individuals who can perform traditional roles (e.g., marketing, finance, sales, product management, service) in esport is growing. Hedlund et al. (2021), provide details of the various careers that are specific to esport. These include main areas for individuals that are involved with playing and coaching (college and professional); managing organizations and franchises; producing, managing, and running events; broadcasting and creating content; marketing; health and wellness; game development and design; and international careers. It is important to note, that although these roles can be similar in terms of responsibilities and essential skills, the jobs can vary because of the company's offerings, customers, policies, and the market (Hedlund et al. 2021). This is also true for traditional jobs found in esport, that need novel information and comprehension. Equally, unique and traditional esport careers present opportunities and challenges potential employees seeking to enter esport must understand (Hedlund et al. 2021).

Part of the issue in developing and training qualified candidates with the proper knowledge, skills, and abilities suited for the esport industry is where esport fits within the collegiate environment and curriculum development. Literature has examined esport' growth as an industry but also how university programs have entered and use esport as part of their sport offerings and where it should be housed (i.e., club sports or university athletic program) (Pizzo et al. 2019). This

debate centers on supporting esport on campuses. If it is deemed to be a sport, then the program will require funding, management, promotion, and governance like other official sport programs. If it is deemed to be a club then it falls under traditional student activities and management practices (Funk et al. 2018). As the debates concerning esport as sport or not persists (Pizzo et al. 2019), and how should college esport be treated/formatted/housed (Reavis 2021) there is the question of if esport can be a legitimate major for college students (Murray et al. 2021, Raupp 2020). The challenges with developing an esport program and its abilities to build successful esport degree programs and curriculum (Reavis 2021) are also of concern. Thus far information provided about knowledge and skills needed to succeed and enter the esport industry come from profiles of individuals and organizations currently working in esport (Hedlund et al. 2021). Therefore, it is important to identify knowledge, skills, and abilities from those who have entered the esport industry to develop curriculum/programs to help train knowledgeable and passionate people to benefit the industry (Hedlund et al. 2021) and help it continue to grow.

Knowledge, Skills, Abilities, and Competencies

The Society for Human Resource Management (SHRM) is a national professional human resource (HR) organization which conducts research; plays an active, leading role in workplace employment advocacy; has a credentialling arm that sets professional standards in the field based on a body of knowledge (SHRM BoCK); and adheres to the SHRM Code of Ethics and Professional Standards in Human Resource Management (SHRM 2018). According to SHRM (2021), when conducting job analysis and developing job descriptions, there are three key elements in the process that include the identification and inclusion of knowledge, skills, and abilities, commonly known as KSAs. SHRM defines these key elements as follows:

> "Knowledge – body of information necessary for task performance.
> "Skills – level of proficiency needed for task performance.
> "Abilities – capabilities necessary to perform the job." (SHRM 2021, p. 333)

For more than 20 years, formal research and surveys of business and industry organizations have attempted to identify the KSAs necessary and expected of college graduates. SHRM has consistently engaged in research regarding necessary KSAs for success in the workplace. At the turn of the 21st century, there was focus on the skilled workforce shortage. At a national symposium on the aging workforce in June 2005, Susan R. Meisinger, SPHR, former president and CEO of SHRM discussed the importance for HR professionals and their organizations to support and participate in local workforce training, school-to-work programs, and to implement job training which would include mentorship and professional development programs. The US Department of Education report, the American Management Association Study and research conducted by Porter and McKibbin discuss the importance of candidates possessing "soft skills" and strategies to help develop them in college students (Painchaud 2006, pp. 45–52).

When preparing for his article for SHRM, Mark Feffer interviewed senior HR managers, senior executives from consulting and training organizations, executives from staffing agencies, higher education business professors, along with analysis of recent research from the Hay Group and Adecco Staffing USA. The result was the identification that "soft skills" are becoming more important for success as the workplace evolves socially and technologically (Feffer 2016).

The Lumina Foundation released its Degree Qualification Profile which identified five areas of learning: specialized knowledge - knowledge acquired in a specialized field of study; broad, integrative knowledge - knowledge acquired in general education fields; intellectual skills - analytic inquiry, use of information resources, engaging diverse perspectives, quantitative fluency, and communication fluency; applied learning - ability to translate knowledge into action; and civic learning - sensitivity, awareness, understanding, and engagement in diversity, equity and inclusion in work, community service, and co-curricular activities (Lumina Foundation for Education 2011). These broad areas of learning align with the expected KSAs of college graduates.

In 2015, the Hart Research Associates released its findings from online surveys of employers and college students conducted on behalf of the Association of American Colleges and Universities (AAC&U). Some key findings of this research:

1. Employers believed that broad learning across areas including problem solving with people who have differing views, democratic institutions and values, civic capacity, liberal arts and sciences, and intercultural skills should be an expected part of college for all students, regardless of their chosen major or field of study.
2. Written and oral communication, teamwork, ethical decision-making, critical thinking, and the ability to apply knowledge in real world setting were the most highly valued skills identified.
3. Employers believe that engaging students in applied learning projects would improve learning and better prepare them for career success.
4. Many employers feel that college graduates fall short in their preparedness in several areas, including those the employers deem most important for workplace success. (Hart Research Associates 2015)

In 2019, SHRM published a five-part series on skill gap and readiness for work of college graduates. Part 1 (Wilkie 2019a) discussed the disconnect between higher education academic plans and what employers expect graduates to do; skills such as written communication, speaking persuasively, thinking critically, working independently, showing initiative, and interacting with others are lacking. Additionally, the research showed a big divide between how prepared students think they are for work and how prepared employers think they are. Significant gaps exist between students' and employers' perspectives in the following areas: professionalism/work ethic, oral/written communication, critical thinking/ problem-solving, teamwork/collaboration, leadership, career management, and global/ intercultural fluency. Part 2 (Wilkie 2019b) identified soft skills such as

adaptability, problem-solving, creativity, influence, drive, empathy, collaboration, critical thinking, and being willing to view issues from multiple perspectives as key missing elements. The four overarching soft skills categories identified were critical thinking, communication, listening, and interpersonal skills. In the 3rd part of the series, Wilkie (2019c) shares employers indicate hard skills are lacking also. There is a sense of college grads not possessing basic technical and practical skills. Advancements in technology is cited as a potential cause of this gap. The reality is students are not taught the foundation functionality and capability of software so that they can appreciate the transferability to upgraded and updated systems and softwares. Additionally, they prefer calling the help desk instead of accessing the tutorial or "googling it" to learn the process. In part 4, Wilkie (2019d) discusses the importance of business leaders engaging with higher education on curricula development. In doing so, a greater understanding between academia and real-world application could be developed and result in better prepared graduates. The last part in the series, part 5 (Wilkie 2019e), suggests it may be time to reengineer higher education and the 4-year college.

In chapter 2 of *Saving Higher Education* (Bradley et al. 2012), the authors discuss the evolution of competencies. During the 1960's through the end of the twentieth century, higher education focused on "learning objectives" (Bloom et al. 1971). As technology became the driver of change in business and industry, there has been a shift in traditional knowledge, skills, and abilities of the individuals graduating with baccalaureate degrees to a more complex application. In *Assessing Student Achievement in General Education*, Banta (2007) suggests the focus of learning objectives, what faculty believe students should know, is no longer enough for graduates to thrive in the work environment. There is a greater connection of the focus of competency-based education to what graduates need to be able to do in situations, customary/typical as well as unanticipated and/or complex.

Seidman and Bradley (2002) provided the following definition of "competency" in their paper presented at the Annual Meeting of the American Educational Research Association:

> "Competency proficiency refers to the ability of an individual to demonstrate the mastery of a skill and/or the application of a theory that leads to the successful attainment of performance-based outcome." (Seidman and Bradley 2002, p. 5)

The 3-Year Business Honors development team at Southern New Hampshire University (SNHU) further provided this working explanation of the definition:

> "A competency is a system of behavior that can be applied in a wide range of situations. To become competent in any skill or knowledge area {competency} a person needs to understand both conceptually and behaviorally; have opportunities to practice it; get feedback on how well he or she is performing the skill or applying the knowledge; and use the competency often enough so that it is integrated into his or her behavioral repertoire." (Seidman and Bradley 2002, p. 6)

In 2011, the Society for Human Resource Management (SHRM) began an extensive research project involving thousands of human resource (HR) professionals and senior leadership of global organizations to identify the critical competencies necessary for HR professionals' success. As part of the research, SHRM defined competency as follows:

> "A competency is a group of highly interrelated knowledge, skills, abilities and other characteristics (KSAOs) that give rise to the behaviors needed to perform a given job effectively." (SHRM 2018, p. 3)

The body of competency and knowledge (SHRM BoCK) was the result of the research project. In 2014, the SHRM BoCK was adopted as the professional standard for HR professionals to attain. The standard includes eight behavioral competencies and fifteen HR areas of expertise categorized under three knowledge domains, people, organization, and workplace. The behavioral competencies align with the broad integrative knowledge that is transferable to any career. The fifteen HR knowledge expertise relate to the specialized knowledge in the HR field (SHRM 2018).

It is clear, there are multiple definitions for competency. While most are in alignment for the purposes of clarity, this research defined competency as:

> What an individual knows (knowledge and ability) and the level of proficiency (skill) with which an individual can use that knowledge; it is a high proficiency level of the application (behavior) of one's knowledge, skills, and abilities.

As esport continues to grow and becomes more accepted it provides many opportunities for colleges, faculty, and students to reach goals related to recruitment, retention, and engagement (Murray et al. 2021). Additionally, colleges have the goal of fostering students' development to critically think and solve problems in addition to other desired KSA outlined above. However, universities are still hesitant to implement esport because of a lack of expertise around the infrastructure. The reality is, students are interested in esport being incorporated in their educational program; schools just need the correct tools to help them get it started (Andrews et al. 2021). Thus, this paper aims to identify the knowledge, skills, and abilities that experts in the esport industry indicated as being important for those studying and/or pursuing a career in the esport industry.

Methodology

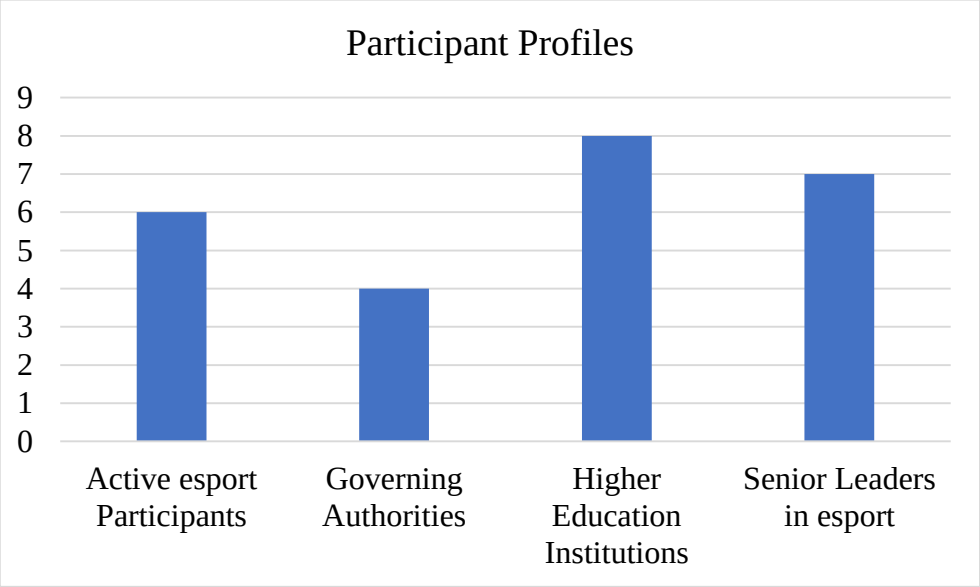
The purpose of this study was to identify the knowledge, skills, and abilities an individual should seek to develop/provide competencies should they seek employment in the esport industry. Additionally, the purpose of this study is to help provide key/common areas in which experts from the esport industry suggest students/programs focus. To that end, 25 esport industry experts were interviewed to increase its relevance and validity (Cranmer et al. 2021). A semi-structure, virtual interview was conducted in which introductions, and the interviewer

purpose for contacting and interviewing participants where provided. Then each interviewee was asked the same questions. From their experience/perspective what are the knowledge, skills, and abilities someone that wants to enter the esport industry should focus on/or if they are studying esport should develop. Notes were taken and transcribed during the interview process. Each interviewee was sent their responses to either add/change/clarify any additional information.

Participants

The 25 interviewees of this study included 22 males and 3 females. They fell into four main categories: higher educational institutions, recognized governing authorities, existing esport organizations, and active participants in esport. Eight individuals fell into the category of the higher education institutions including faculty, administrators, authors, researchers, and coordinators. The recognized governing authorities included four interviewees holding positions of commissioners, executive directors, and legal expert. Seven of the research participants are representatives from the esport industry in senior leadership positions. Additionally, six individuals are active participants as coaches, streamers, competitive and casual players. (See Figure 1 for participant profiles.)

Figure 1. *Participant Profiles*



Data Collection and Analysis

The general inductive approach was used to analyze the qualitative data to identify themes in the text data that were related to the purpose of the study. Once the data files were cleaned and put into a common format, the analysis commenced with a close reading of the text, which was carried out by two members of the evaluation team. During the analysis, specific themes were developed, which in the view of the investigators captured core messages reported by participants.

General inductive approach was appropriate for this study given the purpose of the study and as Thomas (2006, p. 238) suggests using an inductive approach is suitable when the purpose is to:

(a) condense raw text data into a brief, summary format;
(b) establish clear links between the evaluation or research objectives and the summary findings derived from the raw data; and
(c) develop a framework of the underlying structure of experiences or processes that are evident in the raw data.

The following procedures were used to analyze the data as outlined by Thomas (2006, pp. 241–242):

1. Preparation of raw data files (data cleaning/scrubbing): Format the raw data files in a common format. Print and/or make a backup of each raw data file (e.g., each interview). Transcripts and notes taken during the interviews utilized Microsoft Word. Each participant was given a copy of their interview to review once all data was collected.

2. Close reading of text: Once text has been prepared, the raw text is read in detail until the evaluator is familiar with its content and gains an understanding of the themes and events covered in the text.

3. Creation of categories: The evaluator identifies and defines categories or themes. The upper-level or more general categories are likely to be derived from the evaluation aims. This was established with the purpose to identify the KSA's for esport. The lower-level or specific categories will be derived from multiple readings of the raw data. In inductive coding, categories are commonly created from actual phrases or meanings in specific text segments. Microsoft Excel was utilized to capture text/phrases that accompanied the themes/categories derived through the reading of the text.

4. Overlapping coding and uncoded text: Among the commonly assumed rules that underlie qualitative coding, two are different from the rules typically used in quantitative coding: (a) one segment of text may be coded into more than one category, and (b) a considerable amount of the text (e.g., 50% or more) may not be assigned to any category, because much of the text may not be relevant to the evaluation objectives. Text/phrases that were used were mapped and categorized under the KSA with specific themes under each of the main categories. Text that was included in the analysis was recorded in a Microsoft Excel sheet.

5. Continuing revision and refinement of category system: Within each category, search for subtopics, including contradictory points of view and new insights. Select appropriate quotations that convey the core theme or essence of a category. The categories may be combined or linked under a superordinate category when the meanings are similar. This was done with the KSA's, eventually once all the text was reviewed, coded, categories established, it was mapped back to HR literature, specifics presented in the results.

The categories resulting from the coding, followed key features suggested by Thomas (2006, p. 240):

1. Category label: a word or short phrase used to refer to the category. The label often carries inherent meanings that may or may not reflect the specific features of the category.

2. Category description: a description of the meaning of the category, including key characteristics, scope, and limitations.

3. Text or data associated with the category: examples of text coded into the category that illustrate meanings, associations, and perspectives associated with the category. Text/phrases/quotes were taken from the interviews and labeled with a theme or category that best captured the essence of what the interviewee was saying as interpreted by the researchers.

4. Links: Each category may have links or relationships with other categories. In a hierarchical category system (e.g., a tree diagram), these links may indicate superordinate, parallel, and subordinate categories (e.g., "parent, sibling" or "child" relationships). Links are likely to be based on commonalities in meanings between categories or assumed causal relationships. The hierarchical category system was the KSAs in which the raw data was analyzed with emerging themes being categorized under one of these general themes.

5. The type of model in which the category is embedded: The category system may be subsequently incorporated in a model, theory, or framework. Such frameworks include an open network (no hierarchy or sequence), a temporal sequence (e.g., movement over time), and a causal network (one category causes changes in another). To be consistent with the inductive process, such models or frameworks represent an end point of the inductive analysis. They are not set up prior to the analysis. It is also possible that a category may not be embedded in any model or framework. As a result of reviewing the literature and given that the purpose of inductive analysis is based on the experiences of the evaluators, it was clear once the analysis was finished and categories established, that the results could be supported and mapped back to HR literature. Specifically, this is due to the experience that one of the researchers has in developing HR policy, HR curriculum, and HR programs.

As Thomas explained, the intended outcome of the process for inductive analysis is to create a summary of categories that the evaluators' view represents the key aspects of the themes identified in the raw data in relation to the purpose of the study. For the purposes of this study, and consistent with Marshall and Rossman (1999), the transcribed interviews of the 25 participants were analyzed for emerging domains/topics, key themes and processes, interpretations, nonoverlapping components and the trustworthiness of findings (Marshall and Rossman, p. 154). The next step was to code the data by categorizing/labeling the words or phrase provided, set context for the category, establish links of the phrases to the category and ensure consistency with the coding (Marshall and Rossman, pp. 155–157). Results of the analysis are presented below.

Results

The purpose of the study was to identify the KSAs that students should develop if they want to pursue a career in the esport industry. For more than four decades, formal research efforts have transpired focusing on the knowledge, skills, abilities, and competencies that individuals should possess in order to be successful in various fields of work. During this time, higher education and educational foundations have engaged in several initiatives for the knowledge development of these skills by utilizing various experiences integrated throughout the curricula (Spady 1977, Lumina Foundation for Education 2011, Bell 2012, Bradley et al. 2012, Hart Research Associates 2015, Finley 2021).

While several industries have established certifications for professionals, with the turn of the 21st century, many of these certifications expanded beyond the technical competencies of the discipline to include the behavioral competencies. During this time, the Society for Human Resource Management (SHRM) had a well-established credentialling program for human resource (HR) professionals. In 2011, SHRM commenced its research project involving thousands of HR professionals and organizations' senior leadership worldwide to identify critical HR competencies. The result of that project is the SHRM Body of Knowledge and Competency™ (BoCK). The BoCK identifies eight behavior competencies and three technical competency domains that are made up of fifteen HR functional areas, five per domain.

Behavioral competencies:

1. Leadership: Leadership and Navigation, & Ethical Practice.
2. Business: Business Acumen, Consultation, & Critical Evaluation.
3. Interpersonal: Relationship Management, Communication, & Global & Cultural Effectiveness.

HR Domains and functional areas:

1. People: HR Strategic Planning, Talent Acquisition, Employee Engagement & Retention, Learning & Development, & Total Rewards.
2. Organization: Structure of the HR Function, Organization Effectiveness & Development, Workforce Management, Employee & Labor Relations, Technology Management.
3. Workplace: HR in the Global Context, Diversity & Inclusion, Risk Management, Corporate Social Responsibility, US Employment Law & Regulations.

For the purposes of this study, the SHRM BoCK was used as a reference for identifying K, S, A, and competencies. As recommended by Thomas (2006) the transcribed interviews of the 25 participants were analyzed for emerging domains/ topics, key themes and processes, interpretations, nonoverlapping components and the trustworthiness of findings. The next step was to code the data by categorizing/

labeling the words or phrase provided, set context for the category, establish links of the phrases to the category and ensure consistency with the coding.

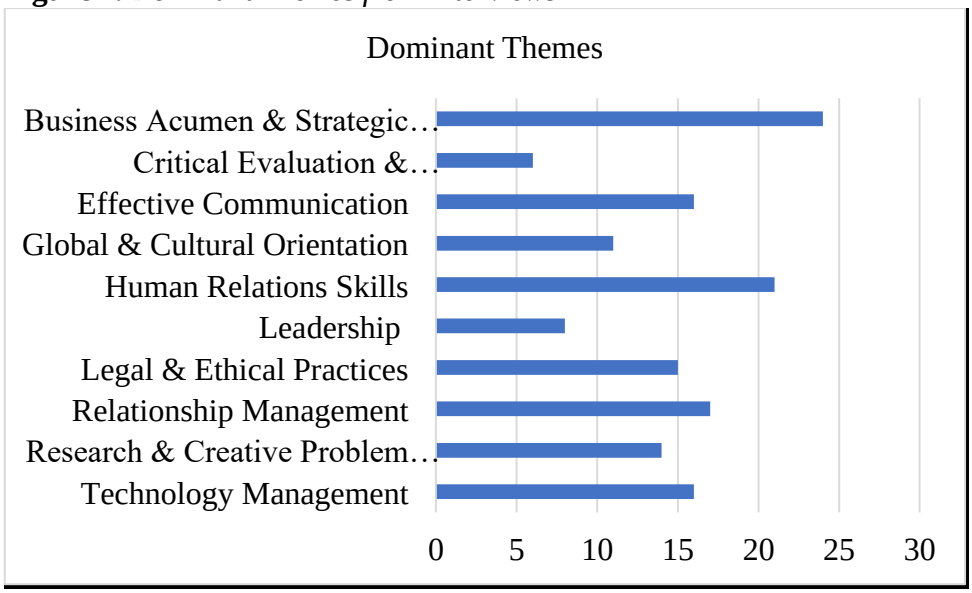
It became apparent when establishing the domains and key themes that there were two broad categories: general, broad integrative competencies and internal esport organization skills.

The general, broad integrative competency categories that emerged were in alignment with the SHRM BoCK. The common themes that emerged, regardless of discipline (functional area) or industry fell into the following clusters:

1. Business Acumen and Strategic Approach
2. Critical Evaluation and Analytical Skills
3. Effective Communication
4. Global and Cultural Orientation
5. Human Relations Skills
6. Leadership
7. Legal and Ethical Practices
8. Relationship Management
9. Research and Creative Problem Solving
10. Technology Management

Figure 2 shows the importance of the 10 clusters based on participant interviews in terms of how frequent they were mentioned.

Figure 2. *Dominant Themes from Interviews*



Business Acumen and Strategic Approach was identified by 24 of the 25 participants as a key competency required of individuals embarking on an esport career. The key characteristics to this cluster are knowledge of functional area relationships, business and competitive awareness, business analysis, strategic alignment, and assessment of resources. Participants identified themes and descriptors inclusive of understanding organizations' infrastructure, business

processes, financial management, mission, vision, values, business ecosystem and structure, evolution of the industry, industry knowledge, application and interpretation, external environment, an entrepreneurial mindset, business plans, principles of management, principles of marketing, sales management, operations management, ins and outs of gaming industry, and competitive analysis.

Of the 25 participants, 21 identified Human Relations Skills as a key competency for esport employees. This cluster is characterized by lifelong learning; interpersonal skills; character traits such as motivation, adaptability, reliability, and responsibility; personal/professional manners and development; and emotional intelligence. Interviewees provided descriptors such as flexibility, adaptability, working under pressure, tenacity, self-starters, self-motivated, self-awareness, time management, accountability, grit/endurance, genuine/authentic, passion, discipline, consistent, work ethic, coachable, soft skills, human relation skills, professionalism, need to be able to work with people, and utilize emotional intelligence.

Relationship Management was the third most common cluster with 17 of the 25 participants identifying it as a key competency. This competency is inclusive of networking, relationship building, teamwork/team membership, conflict management, consulting process, and negotiations. Descriptors provided by the participants included networking, player support, building relationships, partnership activation, community building, coaching, teamwork, team management, conflict resolution, and socialization.

Effective Communication tied for fourth most common cluster with 16 of the 25 participants identifying it as a key competency. In context of the organization, effective communication is focused on the exchange of organizational information as well as active listening. The interviewees highlighted the importance of active listening along with appropriate use of industry terminology; one participant indicated written and verbal communication is a skill that is essential; it is about making sure everyone is on the same page and striving for the same goal.

Also in fourth position is Technology Management with 16 of 25 participants identifying it as a key competency. Technology management encompasses general technology proficiencies, hardware, software, cybersecurity, and document management. Interviewees cited several applications and softwares such as Adobe, coding excel, streaming (i.e., Twitch, YouTube), casting, programming/game engines, as well as being aware of and the ability to adapt and quickly come up to speed on emerging esport applications (i.e., Discord).

Legal and Ethical Practices came in at sixth position with 15 of 25 participants identifying it as a key competency. Components of legal and ethical practices include domestic and international law, current and proposed legislation and regulations, personal and professional integrity, code of conduct, and being an ethical agent. Esport is an emerging industry and as such there are limited laws and regulations. Additionally, esport operates in a global market with limited borders. Employees in esport need to have a working knowledge of the General Data Protection Regulation passed by the European Union in 2016 and implemented in 2018 which deals with eight key areas including data sharing, data transfers, data breaches, accountability, and legality of processing. As the industry evolves more regulations and laws will be enacted. The interviewees identified

issues dealing with contracts, amateurism, governance, and legal liability which will come to the forefront.

Research and Creative Problem Solving was identified by 14 of the 25 participants. The themes and descriptors included being able to access subject matter experts (SMEs), decision making and creative problem-solving process, ability to validate data sources. The participants underscored the importance of possessing well developed problem solving and critical thinking skills along with proficient research and analytical skills.

Global & Cultural Orientation was a key competency for 11 of the 25 participants. This competency includes operating in a diverse workplace, operating in a global environment, and advocating for diverse and inclusive workplace. Diversity, equity, and inclusion practices were highlighted as important aspects of the esport industry. Additionally, concerns about access for underrepresented groups and a respectful work environment were expressed. Finally, the focus of health and wellness was underscored in this competency.

The Leadership competency resonated with 8 of the 25 participants. This competency deals with navigating the organization, communicating a shared vision, managing esport initiatives, engaging in change management, and influencing the direction of the organization. The interviewees noted several of the components as well as goal setting and trait leadership.

Critical Evaluation and Analytical Skills was identified by 6 of the 25 participants. Themes and descriptors included statistical principles, data measurement tools, and data analysis tools. While this cluster scored the lowest of all, there is a fine line between it and Research & Creative Problem Solving.

Further refined for esport careers, three internal domains emerged comprised of discipline specific/technical KSA and competencies. The three internal domains correlate to the three common elements in any organization: people, structure, and goals (Robbins et al. 2015, p. 5). Figure 3 depicts the number of participants cited items that fit the internal domains. There were 22 of the 25 participants who identified aspects of organization goals; 14 of 25 participants who identified aspects of people; and all 25 participants identified aspects of organization structure.

1. People
    a. Employee recruitment, engagement, retention
    b. Learning and Development
    c. Diversity, Equity, & Inclusion (DEI)
    d. Employee & Labor relations
2. Structure
    a. Technology Infrastructure
    b. Risk Management
    c. Organizational effectiveness & innovation
    d. Functional Discipline acumen & structure
    e. Product and/or Service knowledge & skills
3. Goals
    a. Alignment with the organization mission, vision, values

b. Alignment with laws and regulations
c. Corporate Social Responsibility

Figure 3. *Importance of the 3 Internal Domains Based on Participant Interviews*

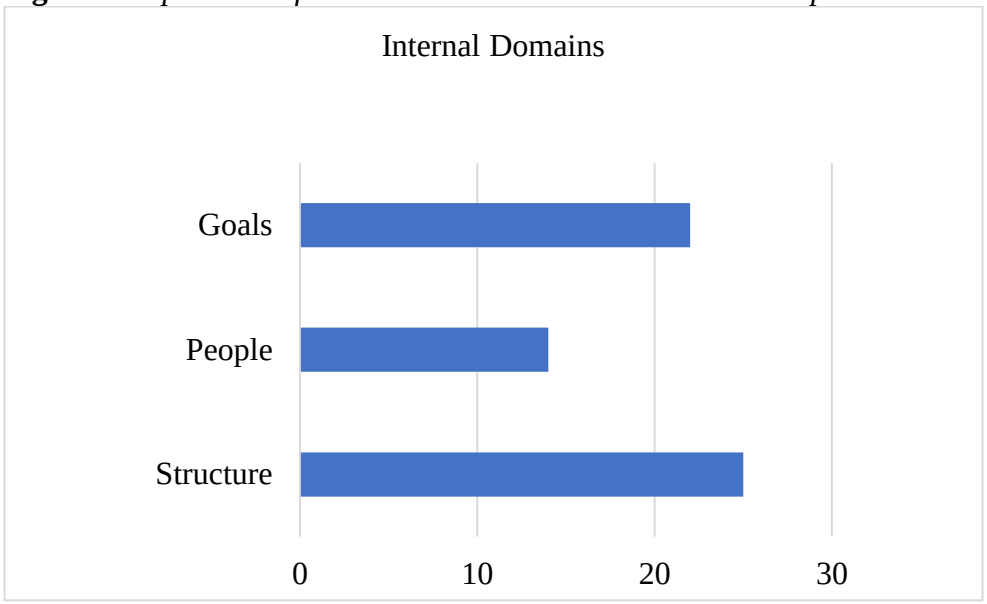
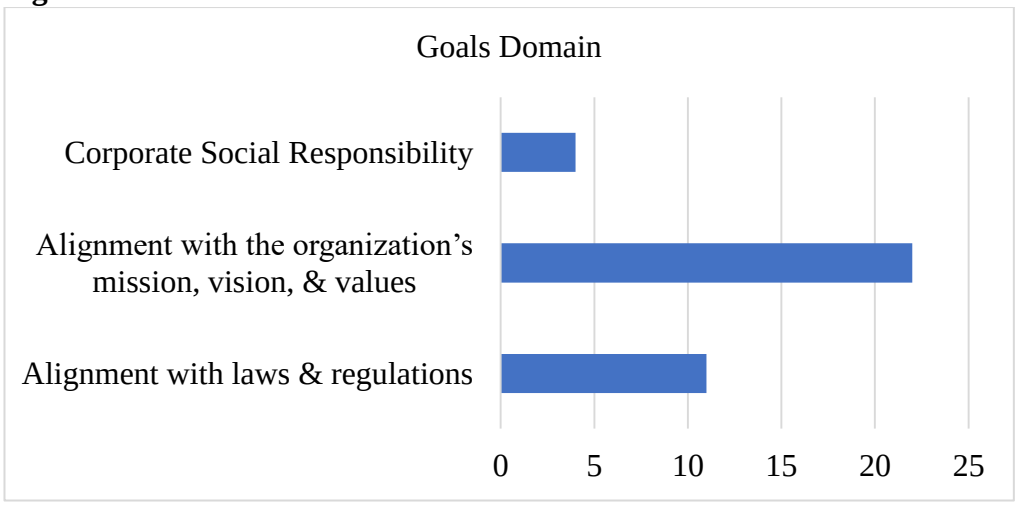


Figure 4 is the breakdown of the Goals domain which includes three functional dimensions as key knowledge areas: corporate social responsibility identified by 4 participants; alignment with laws and regulations were included with 11 of the interviewee's comments; and 22 interviewees identified alignment with the organization's mission, vision, and values.

Figure 4. *Goals Domain*



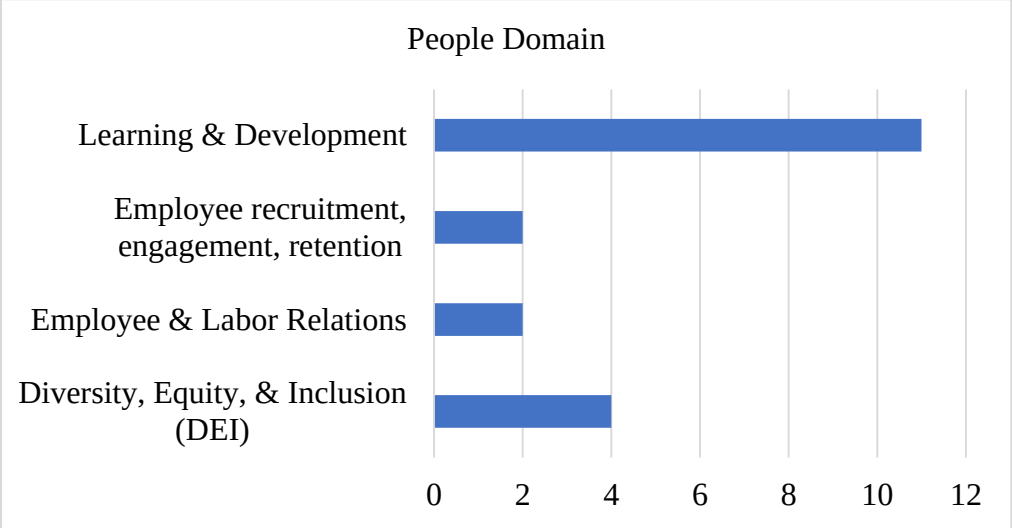
Corporate social responsibility (CSR) is assessed in three groups: economic, environmental, and social. Economic ties to ROI, profits, monetary flows, jobs created and supplier relations. Environmental deals with carbon footprint, pollutants emitted, recycling and reuse, water/energy use and product impacts.

Finally, social deals with health/safety record, community impacts, human rights/ privacy, product responsibility, and employee relations. While CSR was not seen as a critical dimension, as esport evolves through the industry life cycle, it will become more important.

Alignment with the organization's mission, vision, and values interviewees identified the components such as the esport business, industry knowledge, esport history, and innovation. The drill down for alignment with laws and regulations, participants identified governance, legal issues, and contracts.

Figure 5 illustrates the breakdown of the People domain which includes four functional dimensions as key knowledge areas: learning and development; diversity, equity, and inclusion (DEI); employee recruitment and engagement; and employee and labor relations. The technical area of learning and development was the most frequently mentioned, 11 of 25 participants, key knowledge area. Diversity, equity, and inclusion (DEI) was mentioned by 4 of the 25 participants. Identified by 2 of the 25 were both employee recruitment, engagement, and retention and employee and labor relations.

Figure 5. *People Domain*

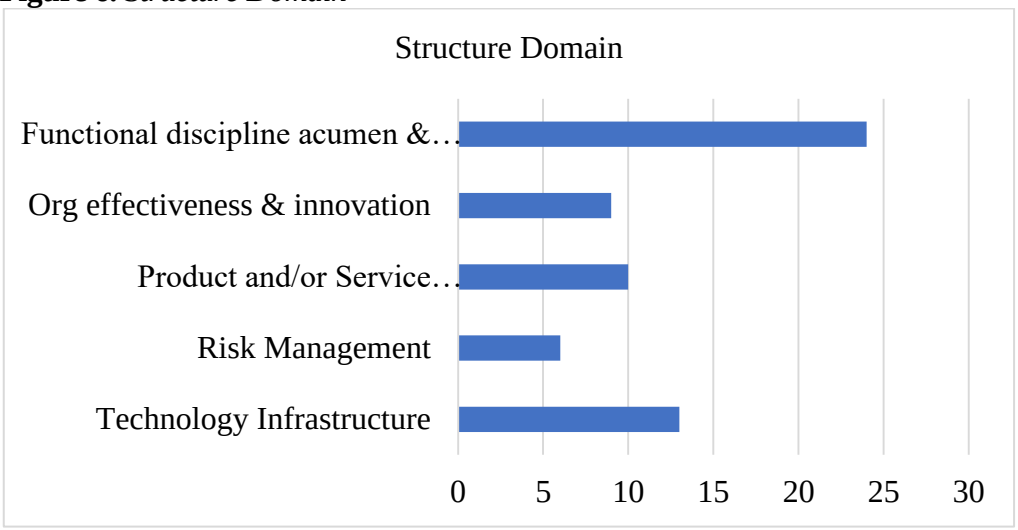


Learning and development included the components of applied learning, gaining esport industry experience, general work environment experience, internships, experiential learning, and gamification of esport learning to better prepare students for the work environment. Employee recruitment, engagement, and retention tied to career preparation and development, resumes, interviewing, and applying for jobs. Employee and labor relations requires an understanding of labor contracts. Diversity, equity, and inclusion (DEI) was underscored by participants as the need for people entering the esport industry to have a sensitivity to DEI issues and develop strategies to positively navigate the issues in the workplace.

Under the structure domain, there are five broad technical areas: functional discipline acumen and structure; organization effectiveness and innovation;

product and/or service knowledge and skills; risk management; and technology infrastructure. (See Figure 6.)

Figure 6. *Structure Domain*



Functional discipline acumen and structure was identified by 24 of the 25 interviewees as essential technical skill area. This category includes working knowledge, skills, and abilities in the following noted infrastructure components: sales, player management, consumer behavior, customer service, operations/ projects/event management, hosting events, broadcasting/shout casting, game design & development, emerging technologies, digital marketing/social media marketing, SEO/SEM, finance/revenue, and sponsorships.

Technology infrastructure was the second critical technical skill area expressed by 13 of the 25 participants. Working knowledge, skills, and abilities of key technology areas such as capacity/capability for game design/development, streaming, content creation, Twitch, cloud computing, programming, Discord, software engineers, IT issues, YouTube, boosting, OBS, and new applications were indicated by the interviewees as integral to success in the esport industry.

The product and/or service knowledge and skills technical area was identified by 10 of the 25 participants. This requires knowledge, skills, and abilities to enable the employee to understand the ins and outs of proposals, sponsorships, esport betting/gambling, loot boxes and monetization.

Organization effectiveness and innovation deals with the alignment of people, structure, and goals to ensure optimum operation of the organization. Nine out of 25 participants highlighted this technical area citing the need for understanding and sensitivity in the areas of diversity, equity, and inclusion; health and wellness; the organization structure and business operations, along with best management practices as integral to success.

The least frequently noted functional area, identified by 6 of the 15 participants, was risk management. It is critical that individuals entering the esport industry have an understanding and continue to develop knowledge in this area. Key components of this functional area include compliance and regulations within

the industry; managing liability – organization, application, and individual; the implications of discrimination and how it manifests itself; cybersecurity and malware, along with other potential risks to the business.

Discussion

The esport industry is in the introductory phase. As such, there are many unknowns, the current operation of this industry will be fundamentally different as it grows and develops. To that end, the purpose of this study was to shed light, and identify knowledge, skills, and abilities someone should develop should they seek to explore the esport industry. One of the main drivers of the changes will be technology advancement and how these interfaces with the development of the esport industry.

An inductive approach was used to analyze the data resulting in themes. The scrubbed, formatted data was analyzed independently by an evaluation team; specific themes were developed that captured core messages reported by participants (Strauss and Corbin 1998). As a result, ten common themes appeared: Business Acumen and Strategic Approach (24); Human Relations Skills (21); Relationship Management (17); Effective Communication (16); Technology Management (16); Legal and Ethical Practices (15); Research and Creative Problem Solving (14); Global and Cultural Orientation (11); Leadership (8); and Critical Evaluation and Analytical Skills (6). Additionally, requisite esport specific KSAs and competencies aligned with three broad organization categories: People (14), Structure (25), and Goals (22). The results and categories of the current study are supported by previous studies regarding what employers desire in recent grads (Seidman and Bradley 2002, pp. 15–16) and an extensive global study conducted by SHRM (Society of Human Resource Management) to develop its BoCK™ (Body of Competency & Knowledge) for Human Resource professionals (SHRM 2018).

Results of the current study as it relates to gaining experience and problem solving is supported by the work of Banta (2007) that discusses students need to be able to show they can adapt to various situations and unanticipated situations. Given how new esport is, participants in the current study discussed how it is important that students learn to sink or swim by experiencing esport itself. Numerous participants discussed how when they hire people or have interns and a problem arises, they tell them to figure it out on their own. Therefore, gaining esport experience is important to develop problem-solving skills. This is further supported by the work of Seidman and Bradley as it relates to developing competencies in various areas. Additionally, as Murray et al. (2021) discussed, esport is in a position to have curriculum built around it, and as the themes/results of the current study suggest, esport offerings can also be embedded into traditional courses as participants identified KSA and competencies established by SHRM BoCK. Given the need to develop KSA, experience is a sought-after attribute and as Murray et al. (2021) suggest developing curriculum and embedding esport in traditional courses provides students the opportunity to engage in projects focused

on the esport ecosystem gaining exposure to skills and knowledge that rely on as Hedlund et al. (2021) identified as traditional and unique career opportunities.

Results of our study support previous research (Wilkie 2019b, Hart Research, 2015, Lumina Foundation for Education 2011) that college students seeking to enter the esport industry need to develop hard and soft skills. Therefore, curriculum does not necessarily need to be new for esport if the outcomes of existing courses address these gaps identified by participants and employers. Curriculum and programs need to be developed in which esport industry (specialized knowledge, broad, integrative knowledge, intellectual skills, civic learning, applied learning) are esport context specific to achieve this notion discussed by Hedlund et al. (2021). That is, esport careers are emerging that are being filled by traditional sport careers, but also unique to esport. As the interviewees discussed, and an important contribution from the current study, participants identified there is a gap in these areas (professionalism/work ethic, oral/written communication, critical thinking/ problem-solving, teamwork/collaboration, leadership, career management, and global/intercultural fluency), that they have people that either know esport but do not understand business/ management, or they know business/management and do not understand esport, results similarly reported and corroborated by the current study to those by Wilkie 2019d).

As previous research that outlines the needs for skills that can be developed through applied learning, those seeking to enter the esport space or develop programs should seek out experience in the industry. A sentiment shared by many of the participants. Therefore, curriculum should be developed in which hands-on learning occurs, this can be in small forms like learning to stream esport content, to hosting small, esport events at a local arena, and gradually growing the size of the events. This could help students develop the KSA outlined by the participants of the current study, but also from previous research (SHRM 2018, Wilkie 2019d).

In looking at the low responses related to the areas of diversity, equity, and inclusion, compliance and regulations within the industry, the implications of discrimination and how it manifests itself in esport, can be explained by the barriers to enter the esport space due to toxicity and gender bias reported by Andrews and Crawford (2021). The number of women playing games and participating in esport continues to grow and is estimated to be 49% of gamers in the United States under 30 years old, 30% of women are competitors in esport, and 22% of the global fanbase are female (Andrews & Crawford, 2021). Those wanting to enter the esport industry will need to understand these experiences and make efforts to mitigate. As Andrews and Crawford (2021, p. 40) suggest to address the negative female issues in entering esport "the need for education, awareness, and a rise in numbers of females within these sports, are fundamental to beginning to effect change in misconceptions and biased attitudes and beliefs." This issue was outside the scope of the current study, but warrants additional research for the future.

Conclusions

The interviewees identified many characteristics and phrases that aligned with the ten behavioral clusters developed as a result of this study. They were repeatedly underscored as integral to a strong foundation an individual needs to acquire that will allow continuous growth, development, and resiliency in the esport industry. The three internal domains with the twelve functional areas represent the broad-based knowledge, skills, and abilities essential when entering the esport industry. Understanding these functional areas allows the individual to perform in a more collaborative, integrative manner which ultimately benefits the organization overall.

When reviewing the data from the interviews, patterns and emerging themes were found to exist. While they were not identical to the SHRM BoCK there were many similarities and connections. The further delineation of the internal functional areas categorized under the three domains, people, structure, and goals, indicates the foundational technical knowledge, skills, and abilities necessary for success in an esport career.

While an individual requires competencies in traditional workplace knowledge as well as discipline specific, there is an expectation that with industry evolution, functional areas (domains) within esport will continue to emerge. Lifelong learning skills, passion, and a desire to acquire advanced knowledge will be integral to success and sustainability of an esport career.

Ongoing research is recommended, given the introductory phase of the esport industry life cycle, the research provides an initial framework for current KSAs and competencies desired. As the industry evolves, industry innovation, development, and technology advancements may result in a shift in importance of the KSAs and competencies identified. Therefore, it is recommended that more research is done to collect information on KSA from subject matter experts, but also to identify academic institutes that offer programs in order to gain data/perspectives from students. This way comparisons can be made by students in terms of their career preparedness and compared to perspectives from SMEs.

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