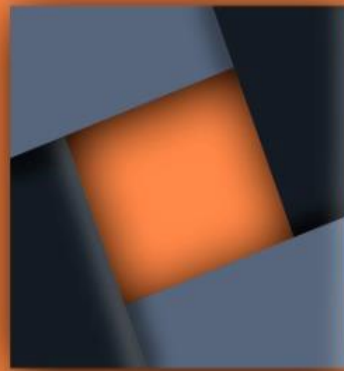


JOURNAL OF EDUCATION AND RECREATION PATTERNS

2757-9344



2022

**VOLUME 3
NUMBER 1**



Journal of Education and Recreation Patterns [JERP]
ISSN: 2757-9344

June, 2022
Volume 3, No 1
<http://www.jerpatterns.com>

The JERP is a refereed journal and has a double-blind review. Any manuscript submitted for consideration in publication in the JERP is reviewed by at least two international reviewers with expertise in the relevant subject area.

The JERP is published twice a year in the June and December months.

Publisher and Editor:

Dr. Yalçın TÜKEL
Necmettin Erbakan University
Konya, Turkey
ytukel@erbakan.edu.tr

Journal of Education and Recreation Patterns [JERP] is indexed in Google Scholar, İdealonline, Crossref, Road, Türk Eğitim İndeks, Proquest Exlibris, EBSCO, ASOS indeks

JOURNAL OF EDUCATION AND RECREATION PATTERNS

Reviewers of this Issue

[Professor Dr. Eleonora Mihaylova Mileva](#), National Sports Academy Sofia, Bulgaria, Bulgaria

[Professor Dr. Kristine Fleming](#), Florida A&M University - Dept. of Health, Physical Education & Recreation, USA

[Associate Professor Dr. Gülfem Muşlu Kaygısız](#), Hasan Kalyoncu University, TÜRKİYE

[Assistant Professor Dr. Aaron Livingston](#), Sport Management in the College of Physical Activity and Sports Studies, West Virginia University, USA

[Dr. Donte Pennington](#), West Virginia State University, USA

JOURNAL OF EDUCATION AND RECREATION PATTERNS

JOURNAL MANAGER

[Dr. Abdullah Sencer Temel](#), Sport Management, Konya, Turkey

EDITOR

[Assoc. Prof. Dr. Yalçın TÜKEL](#), Department of Recreation Management, Tourism Faculty, Necmettin Erbakan University, Konya, Turkey

EDITORIAL BOARD

[Dr. Jenalee Hinds](#), Lourdes University, United States

[Dr. Kwangho Park](#), Sport Management, Troy University, USA, United States

[Prof. Dr. Kristine Fleming](#), Florida A&M University, Dept. of Health, Physical Education & Recreation USA

[Dr. James v Battin](#), Erie Community College, United States

[Professor Dr. Cornelius Hendrik van Heerden](#), Tshwane University of Technology South Africa, South Africa

[Dr. Susan Ryan](#), California University of Pennsylvania, United States

[Dr. Annabelle Marian Leve](#), University of Melbourne, Australia

[Dr. Dalia Mostafa Abdulrahman](#), Faculty of Education for Early Childhood-Cairo University, Egypt

[Dr. R. Ram Mohan Singh](#), Department of Physical Education and Sports, Pondicherry University, Puducherry, India

[Mr. James Raleigh Hagler](#), Middle Georgia State University, United States

[Professor Dr. Ana Lúcia Silva](#), Human Kinetics University, University of Lisbon, Portugal

[Associate Professor Dr. Kazimierz Waluch](#), Instytut Rozwoju Sportu i Edukacji Management Faculty, Pawel Wlodkowic University College, Poland

[Dr. Andrea Diaz](#), Leisure Studies Institute, University of Deusto, Bilbao, Spain

[Dr. Sean Daly](#), Johnson & Wales University, United States

[Professor Eleonora Mihaylova Mileva](#), National Sports Academy Sofia, Bulgaria,

[Dr. Soyoungh An](#), Surrey International Institute, Dongbei University of Finance and Economics, China

[Dr. William Hunter Holland](#), University of North Carolina at Wilmington

[Dr. Muhammad Shoaib](#), Assistant Professor Department of Sociology, University of Gujrat, Pakistan,

[Dr Simon Marwood](#), School of Health Sciences Liverpool Hope University, United Kingdom

[Professor Dr. Vaiva Zuzeviciute](#), Mykolas Romeris University, Lithuania

[Assistant Professor Brian Strong](#), Carleton University, Canada

[Professor Dr. Hikmat Abdulkarim Almadhkhori](#), Mustansiriyah University, Iraq

[Dr. Christine Challen](#), United Kingdom

[Professor Wycliffe Wekesa Njororai Simiyu](#), University of Texas at Tyler, United States

[Associate Professor Zsuzsanna Kneffel](#), University of Physical Education, Hungary

[Associate Professor, Dr. Iryna Skrypchenko](#), Dnipropetrovsk State University of Internal Affairs, Department of Physical Education, Ukraine

[Assistant Professor Matthew Ohlson](#), University of North Florida, United States

[Associate Professor Shawkat Gaber Radwan Mansour](#), Faculty of Physical Education, Suez Canal University, Egypt

[Prof. Dr. Marko Turk](#), University of Tyumen, School of Advanced Studies, Russian Federation

[Dr. Joshua S. Greer](#), Bethel University (TN), USA., United States

[Prof Christiaan Daniel Jacobs](#), Higher Learning Africa (HLA), South Africa

[Prof. Dr. Ratko Pavlović](#), University of East Sarajevo, Faculty of Physical Education and Sport East Sarajevo, Bosnia and Herzegovina

[Dr. Brian Forist](#), Indiana University School of Public Health-Bloomington, United States

[Dr. Scott S. Grant](#), The University of Findlay

[Dr. Tiffany Monique Quash](#), International Water Safety Foundation, United States

[Dr. B. Cecile Reynaud](#), Florida State University, United States

[Dr. Holly J Bean](#), University of Southern Maine, Portland, Maine, United States

[Associate Professor Emilia Alaverdov](#), Faculty of Law and International Relations, Georgian Technical University. Tbilisi, Georgia

[Associate Professor Mohammed Elgammal](#), Department of Theories & Applications of Team Sports, Faculty of Physical Education 'male', Zagazig University, Egypt

[Assistant Professor Saba Zaidi](#), Sardar Bahadur Khan Women's University Quetta, Balochistan, Pakistani, India

[Dr. Erin McNary](#), University of Miami (USA), United States

[Dr. Simon Paul Atkinson](#), New Zealand

[MS Debolina Halder Adhya](#), JIS University, United Arab Emirates

[Assistant Professor Seth E. Jenny](#), Slippery Rock University of Pennsylvania, United States

[Professor Dr. Fred Lunenburg](#), Education at Sam Houston State University, USA

[Professor Dr. Cynthia Martinez Garcia](#), Educational Leadership, Sam Houston State University, USA

[Assistant Professor Sarah Elizabeth Stokowski](#), Clemson University, Department Of Educational And Organizational Leadership Development, USA

[Assistant Professor Peyton J Stensland](#), University of Cincinnati, CECH- School of Human Services, Ohio, USA

[Dr. Laura Miele](#), Adjunct Faculty, Department of Recreation and Sport Pedagogy, Ohio University, USA

[Dr. Colin G. Pennington](#), Department of Sport Science, Tarleton State University, USA

[Assistant Professor Lazar Toskić](#), Faculty of Sport and Physical Education, University of Priština in Kosovska Mitrovica, Serbia

[Assoc. Prof. Dr. Mehmet Demirel](#), Department of Recreation Management, Tourism Faculty, Necmettin Erbakan University, Konya, Turkey

[Prof. Dr. Fatma Arslan](#), Department of Recreation Management, Tourism Faculty, Necmettin Erbakan University, Konya, Turkey

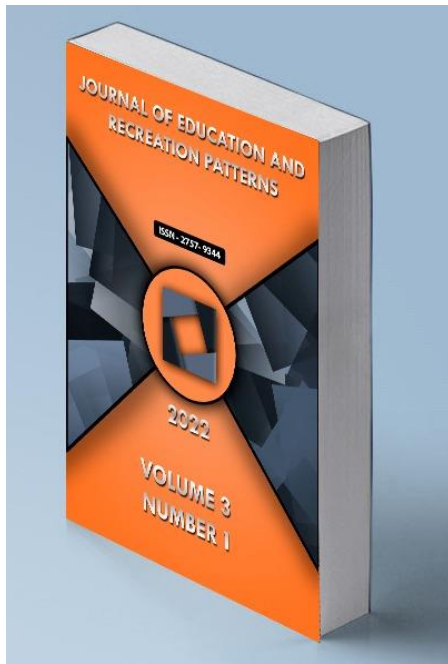
[Assoc. Prof. Dr. Ahmet Uzun](#), Department of Physical Education, Faculty of Education, Necmettin Erbakan University, Konya, Turkey

[Assistant Professor Dr. Kenan Erdağı](#), Department of Physical Education, Faculty of Education, Necmettin Erbakan University, Konya, Turkey

[Asst. Prof. Dr. Yusuf Er](#), Recreation Management, School of Applied Sciences, University of Karamaoglu Mehmetbey, Karaman, Turkey



CONTENTS		Pages
	Inside cover	i
	Generics Page	ii
	Contents	v
	Articles:	
1.	Concussions in Collegiate Club Sports: Investigating Concussion Education, Knowledge, and Attitudes	1
2.	Investigation of Metaphorical Perceptions of University Students on the Concept of Sustainability	13
3.	Digital Paradigm Shift: HBCU Sport Management Programs Transformational Challenges	25



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Concussions in Collegiate Club Sports: Investigating Concussion Education, Knowledge, and Attitudes

Sam Kanny¹, Chase Hathaway², Andrew Rudd³
Sarah Elizabeth Stokowski⁴, Michael Godfrey⁵

To cite this article:

Kanny, S., Hathaway, C., Rudd, A., Stokowski, S., & Godfrey, M. (2022). Concussions in Collegiate Club Sports: Investigating Concussion Education, Knowledge, and Attitudes. *Journal of Education and Recreation Patterns (JERP)*, 3(1), 1–12

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Samantha Kanny, Clemson University, skanny@clemson.edu, [ID https://orcid.org/0000-0001-7147-8616](https://orcid.org/0000-0001-7147-8616)

² Chase Hathaway, Clemson University, cthatha@clemson.edu, [ID https://orcid.org/0000-0001-7959-307X](https://orcid.org/0000-0001-7959-307X)

³ Andrew Rudd, Lincoln Memorial University, andrew_rudd@lmunet.edu, [ID https://orcid.org/0000-0003-1746-9684](https://orcid.org/0000-0003-1746-9684)

⁴ Sarah Stokowski, Clemson University, stoko@clemson.edu, [ID https://orcid.org/0000-0002-7368-7224](https://orcid.org/0000-0002-7368-7224)

⁵ **Michael Godfrey**, Clemson University, mgodfre@clemson.edu, [ID https://orcid.org/0000-0001-7424-7995](https://orcid.org/0000-0001-7424-7995)



Concussions in Collegiate Club Sports: Investigating Concussion Education, Knowledge and Attitudes

Sam Kanny¹, Chase Hathaway², Andrew Rudd³, Sarah Elizabeth Stokowski⁴, Michael Godfrey⁵

ARTICLE INFORMATION

Original Research Paper

Received: 30.01.2022

Revision: 25.03.2022

Accepted: 07.04.2022

<https://jerpatterns.com>

June, 2022

Volume: 3, No: 1

Pages: 01-12

Abstract

Approximately 9 million college students participate in organized sports, with 460,000 college athletes participating at the collegiate level (e.g., NCAA, NAIA) and the remaining 8.5 million playing club and intramural teams. Nationally, an estimated 1.7 to 3 million sports-related concussions (SRCs) occur per year. Despite the overwhelming number of student-athletes participating in collegiate club sports, literature on SRC education, knowledge, and attitudes is limited when looking at collegiate club athletes. The purpose of this study is to explore current concussion education given to collegiate club sports athletes and understand players' concussion knowledge and attitudes. A cross-sectional study design using a modified version of Rosenbaum Concussion Knowledge and Attitudes Survey-Student Version (RoCKAS-ST) was emailed to all members within the 33 student-led club sport organizations at a Southeastern university. Seventy-one club athletes from 22 of the club sport organizations responded to the survey. Thirty-two participants (45.1%) reported that they have received at least one sports-related concussion and 39 (54.9%) reported never receiving a SRC. Fifty-five participants (77.5%) reported not receiving concussion education. Total knowledge was found to have significant differences between participants who received concussion education and participants who did not ($t[69] = 1.135$; $p = 0.048$). No significant differences were found in attitude between collegiate club sport athletes who received concussion education and players who did not receive concussion education ($t[68] = 0.37$; $p = 0.700$). The study indicated that a majority of collegiate club sport athletes do not receive concussion education, which impacts their knowledge of concussions. Further research is needed to determine effective concussion prevention education for this population.

Keywords: Concussion Knowledge, Club Sports, Sports-Related Concussions

Copyright: © 2022 (Sturdivant) This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

INTRODUCTION

Over the last decade, sports-related concussion (SRC) research has greatly expanded due to the increased media attention that has shed light on consequences of traumatic brain injury (McKeithan et al., 2019). An estimated 1.7 to 3 million sports-related concussions occur per year in the United States (Daneshvar et al., 2011). There currently is an inconsistent presentation of concussions, which poses a tremendous challenge for health care professionals tasked with helping these injured athletes (Graham et al., 2014). The evaluation process relies heavily on sport participants to report suspected injuries along with any subsequent post-concussion symptoms (Baugh et al., 2019). To appropriately report a concussion, athletes must have foundational knowledge of the injury cause as well as the inclination to report their symptoms (Waltzman, 2020). Anderson et al. (2021) found that some collegiate student-athletes do not disclose concussions. Football has been found to have the highest prevalence of concussion nondisclosure, and there also are significant percentages of women's soccer (42%), men's lacrosse (36%), and wrestling (36%) collegiate student-athletes who also have reported previous concussion nondisclosure (Anderson et al., 2021). Additionally, club athletes are not given the same resources as varsity athletes. Club athletes may be at even higher risk of nondisclosure, as often they are not presented with the same resources that are available to varsity athletes (Beidler, 2018) and so may be less likely to report a concussion. Currently, there is very little research investigating the reporting behavior of collegiate club athletes. The purpose of this study is to explore current concussion education given to collegiate club sports athletes and understand players' concussion knowledge and attitudes. Specifically, this study strived to answer the following research questions: (a) Do collegiate club sport athletes receive concussion-related education? (b) Does receiving concussion education impact the degree of knowledge on sports-related concussions collegiate club sport athletes have? and (c) What are the attitudes and intentions of club sport athletes toward concussion reporting?

Collegiate Sports vs. Club Sports

Current sports-related concussion (SRC) research primarily focuses on collegiate sports (Register-Mihalik, 2013; Baugh, 2015; Beidler et al., 2018) due to the number of national and state legislative initiatives (e.g., Centers for Disease Control and Prevention, HEADS UP, National Football League Concussion public-service announcements) that recently have been launched due to increased SRC awareness (Beidler et al., 2018). Evidence shows that approximately 9 million college students participate in organized sports, with 460,000 college athletes participating at the collegiate level (e.g., NCAA, NAIA) and the remaining 8.5 million playing club and intramural teams (Fuller et al., 2020). The National Intramural-Recreational Sports Association defines club sports as student-led groups “that are voluntarily organized to further their common interests in an activity through participation and competition” (Roberts, 2003). These organizations practice regularly, host games with other collegiate club programs and compete in national competitions (Lifschutz, 2012). Students who participate in collegiate club sports have been shown to develop life-enhancing skills such as coping with stress, maintaining/improving physical fitness, building friendships, and creating a sense of accomplishment (Forrester, 2006). These skills student-athletes develop are more likely to transfer into learned life and work characteristics, which creates higher odds of success for their future careers (Spreitzer, 1994). Despite the positive benefits of participating in collegiate club sports, the luxuries provided to varsity athletes typically are not provided for the club athletes (Pennington, 2008). Since universities often take a hands-off approach to managing club sports, students are named sport club officers and have the responsibility of coordinating practices and competitions, managing finances, and adhering to all regulations (Lower et al., 2013). The limited involvement by universities indicates that club sport athletes do not receive the same injury prevention education as varsity sports and that responsibility falls on sport club

officers. While the National Intramural-Recreational Sports Association (NIRSA) does not currently have an injury reporting system, a previous study by Arthur-Banning et al. (2018) found that club sports have a significantly higher rate of injury compared to previously-documented NCAA athletes. With a high injury rate and no national organization mandating specific concussion protocols or guidelines, there is a need to explore current practices in club sports concussion education and knowledge to understand the factors associated with SRC underreporting in club athletes (Musille, 2016). Additionally, literature on SRC education and knowledge (i.e., basic injury awareness, related signs and symptoms, potential health repercussions) is limited when looking at collegiate club athletes.

Concussion Education, Knowledge, & Attitudes

A primary function of concussion education for athletes is to encourage honest and timely symptom disclosure to medical personnel (Kroshus et al., 2016). Promoting a culture that encourages athletes to report concussion-related symptoms (Robinson, 2021) as well as ensuring that players have the knowledge to identify if they are suffering from concussion-related symptoms (Register-Mihalik, 2013) is key in increasing concussion-reporting behavior. Attitudes about concussion reporting have been established in previous studies (Donnell et al., 2018; Garavito et al., 2020; Register-Mihalik et al., 2018). Common attitudes student-athletes hold included believing that their injury was not serious enough to report (McCrea, 2004), fearing letting down their teammates/coaches (Register-Mihalik, 2013), playing through the pain (Kaut et al., 2003), and feeling embarrassed to report an injury that is not observable (Rivara, 2013). Athletes' attitudes toward reporting concussions also has been found to be negatively affected by the lack of player knowledge regarding concussions (Pearce et al., 2017).

The National Collegiate Athletic Association (NCAA) implemented a policy in 2010 that requires institutions to provide varsity athletes with “informational materials about concussions” on an annual basis (Kroshus & Baugh, 2016). The guidelines outlined game-day management of concussion, including recognition of the injury (Baugh, 2015), permanent removal of the player with concussion from the game (White et al., 2014), and referral of the player to a medical doctor for assessment (Williams et al., 2012). These guidelines also outlined how concussions should be managed post-gameday, which included return-to-play guidelines that stipulate a player must have medical clearance before returning (Shenouda et al., 2012) and should do so using a gradual stepwise approach with a particular emphasis on remaining symptom-free (White et al., 2014). A previous study by O’Connell et. al (2016) found that there is a deficit in players’ concussion knowledge. When asked, almost 50% of athletes incorrectly stated facts about the treatment of concussion and 25% did not know if a player experiencing concussion-related symptoms during a game should continue playing (Cusimano, 2009). It has been well established that a lack of concussion knowledge negatively affects a player’s ability to seek proper treatment (Weber, 2012). Therefore, understanding the type of concussion education club athletes receive and the amount of knowledge club athletes have is important to furthering SRC research since collegiate club athletes are susceptible to the concussion-related problems that varsity collegiate athletes face, but are vastly under-studied.

Factors Associated with Underreporting

Previous literature indicates that concussion education and knowledge are not the only factors that influence concussion-reporting behavior (Register-Mihalik, 2013). Intrinsic and extrinsic factors include pressure from teammates and coaches to continue playing despite a head injury, players not wanting to lose playing time, athletes in low contact sports feeling embarrassed by sustaining a concussion from their sport, and the belief that agreeing to play a sport also means agreeing to possibly withstand a concussion (Ernst & Kneavel, 2020). Other factors include whether players feel comfortable reporting their head injuries, athletes being

unaware they withstand a concussion, and not being in enough pain to report the injury (Davies & Bird, 2015). Health practitioners, coaches, and athletic trainers need to understand factors associated with underreporting to properly diagnose, treat, and allow players to return to play in order to reduce the risk of long-term effects of sport-related concussions. As there is a gap in literature on club sport athletes, there is a need to explore the factors associated in non-disclosure of sports-related concussions and symptoms in order to improve the care of these players. Therefore, the aim of this study is to understand the concussion education, knowledge, and attitude in collegiate club sport athletes.

METHOD

The purpose of this study is to explore current concussion education given to collegiate club sport athletes and understand players' concussion knowledge and attitudes. This cross-sectional design utilized the Rosenbaum Concussion Knowledge and Attitudes Survey-Student Version (RoCKAS-ST) survey to collect data on the knowledge and attitudes of concussion on club sport athletes. The current study included men and women from the 33 student-led club sport organizations recognized by a medium-sized university. Of the 33 teams, there was a combination of male, female, and co-ed programs (male = 7, female = 8, co-ed = 18). Ethical approval was obtained from the Institutional Review Board at Clemson University.

Participants and Instrumentation

Seventy-one club athletes from a medium-sized university in the Southeastern United States were recruited to participate in a survey on knowledge and attitudes of concussions during the Fall semester of 2021. Twenty-nine participants (40.8%) were male and 42 (59.2%) were female. Ages ranged from 18-23 years ($M = 20.15$, $SD = 1.36$). Years in college varied with 15 (21.1%) participants in their freshman year, 14 (19.7%) participants in their sophomore year, 18 (25.4%) participants in their junior year, 21 (29.6%) participants in their senior year and 3 (4.2%) participants being graduate students.

Of the 33 student-led club sport organizations, 22 club sport teams participated in taking the survey. The club sports included a range of high impact and low impact sports: baseball, men's basketball, men's ice hockey, men's lacrosse, men's volleyball, men's ultimate frisbee, men's rugby, men's soccer, women's basketball, women's field hockey, women's gymnastics, women's lacrosse, women's soccer, softball, women's volleyball, women's rugby, women's ultimate frisbee, swim, disc golf, fencing, and watersports (men = 8, women = 9, co-ed = 5).

The survey employed to measure knowledge and attitudes of concussions was a modified version of the RoCKAS-ST (Rosenbaum & Arnett, 2010). The RoCKAS-ST was selected because it is a comprehensive measure of assessing the constructs of interest. Internal consistency (Cronbach's alpha) has been conducted to test the validity of the RoCKAS-ST (Rosenbaum et al., 2010), which found "adequate" internal consistency (coefficient alpha = 0.76) and "satisfactory" test-retest reliability (Constantine et al., 2006).

The RoCKAS-ST consists of 55 items (Caron et al., 2018), from which the Concussion Knowledge Index (CKI) and Concussion Attitude Index (CAI) create scores for each participant. The CKI has a range from 0-25. Higher scores on the true or false questions within this section indicate higher concussion knowledge. In the original validation of the scale, the CKI demonstrated a test-retest reliability of $r = 0.67$ (Rosenbaum & Arnett, 2010). The CAI has a range from 15-75, where higher scores indicate safer attitudes about concussions (Lystad et al., 2018). Using a 5-point Likert-type scale, participants rate who they feel about a concussion situation with 1 indicating they strongly disagree and 5 indicating they strongly agree (Deuschle et al., 2021). Higher scores indicate a higher concern for concussions. In the

original validation of the scale, the CAI demonstrated a test-retest reliability of $r = 0.79$ (Rosenbaum & Arnett, 2010).

Procedure

A survey was created on Questionpro, a data collection website, based on the RoCKAS-ST (Rosenbaum & Arnett, 2010). Once the survey was created, a link was generated and emailed to all active collegiate club sport student-athletes at the Southeastern university. All participants agreed to have their anonymous data used for research. Participants were given three weeks to complete the survey. Two follow-up emails were sent — one at the end of the first week and a second at the end of week two in an effort to improve the response rate. At the end week one, 85 total responses were collected, with 63 participants completing the full survey. At the end of week two, 101 total responses were collected, with 71 participants completing the full survey. The 30 participants who did not complete the full survey were excluded.

Data Analysis

To evaluate whether concussion education impacts concussion knowledge, attitude, and intention to report a concussion, IBM SPSS Statistics software was used for analysis. Frequency distributions were used to evaluate the number of participants who have received at least one sports-related concussion, whether or not participants received concussion education and what type of concussion education participants received. Independent t-tests to compare those who have received concussion education to those who have not on the dependent variables of knowledge and attitude were employed.

FINDINGS

A frequency distribution looked at participants' concussion history and concussion education. Thirty-two participants (45.1%) reported that they have received at least one sports-related concussion. Thirty-nine participants (54.9%) reported that they have not received a sports-related concussion.

To evaluate whether collegiate club sport athletes receive concussion education, another frequency distribution was employed. Fifty-five participants (77.5%) reported not receiving concussion education. This indicates that despite playing a high-impact or low-impact sport, collegiate club sport athletes often do not receive proper concussion education. Of the 16 (22.5%) participants who reported receiving concussion education, 10 (14.1%) took an online course, 4 (5.6%) received a 5–10-minute presentation on concussions, and 1 (1.4%) received a 10–30-minute presentation on concussions. One (1.4%) did not report how they received concussion education.

Concussion Education & Knowledge

Independent t-tests comparing concussion education and total knowledge found significant differences between participants who received concussion education and participants who did not receive concussion education ($t[69] = 1.135$; $p = 0.048$). This indicates that collegiate club sport athletes who received concussion education had a higher level of knowledge than collegiate club sport athletes who did not receive concussion education. The significant effect for concussion knowledge would be characterized as a small effect size (Cohen's $d = 0.32$; Cohen, 1992).

Cronbach's Alpha found internal consistency to be poor ($\alpha = 0.24$). Based on the frequency distribution, participants' responses were not consistent. For some questions, all participants got the question correct, whereas most participants got the answer wrong on other

knowledge questions. This could indicate that the lack of concussion education collegiate club sport athletes receive impacts the level of knowledge athletes have on concussions, thus causing participants to answer concussion-related knowledge questions incorrectly.

Concussion Education & Attitude

Participants who received concussion education and those who did not receive concussion education were found not to have significant differences in total attitude through independent t-tests ($t[68] = 0.37$; $p = 0.700$). This indicates that the amount of education received by collegiate club sport athletes does not impact players' attitude toward concussion situations.

Table 1

RoCKAS-ST CAI Cronbach's Alpha Item Statistics

Item Statistics			
	Mean	Std. Deviation	N
Attitude 1	2.70	.953	70
Attitude 2	3.66	.508	70
Attitude 5	3.44	.651	70
Attitude 6	3.37	.641	70
Attitude 7	3.59	.648	70
Attitude 9	3.73	.536	70
Attitude 10	3.01	.860	70
Attitude 11	3.53	.531	70
Attitude 12	3.14	.767	70
Attitude 13	3.33	.775	70
Attitude 14	2.86	.856	70
Attitude 15	3.40	.623	70
Attitude 16	2.96	.788	70
Attitude 17	3.51	.583	70
Attitude 18	2.96	.711	70

Cronbach's Alpha found the CAI to have a high level of internal consistency ($\alpha = 0.859$). This indicates that there is good item discrimination on the attitude scale. Table 1 provides the item statistics for the CAI section of the RoCKAS-ST survey. It was found that despite the amount of education received by collegiate club sport athletes, participants' attitudes toward concussion-related situations are relatively neutral.

DISCUSSION AND RESULT

The aim of this study is to understand the concussion education, knowledge, and attitude in collegiate club sport athletes. The main findings of this study were that 77.5% of collegiate club sport athletes reported not receiving concussion education, and there was a significant difference in concussion knowledge between participants who received concussion education and participants who did not receive concussion education. There is a limited amount of concussion-related research on collegiate club sport athletes. Furthermore, current research indicates that collegiate varsity student-athletes experience significantly more symptoms following a concussion compared with controls (Fedor et. al., 2015). Despite additional

recommendations for increasing concussion education (NCAA Sports Medicine Handbook, 2011), varsity athletes still fail to correctly identify sports-related concussions and concussion symptoms (McAllister-Deitrick et. al., 2022). Thus, exploring whether collegiate club sport athletes receive concussion education and the impacts this has on their concussion knowledge and attitudes is important in filling a current gap in concussion-related research.

As mentioned, one of the key findings of this study was that 77.5% of collegiate club sport athletes reported not receiving concussion education. Of the 22.5% of club sport athletes who reported receiving concussion education, there was no standard education given across the club sports. A study by Kroshus et.al (2014) found that there is no mandate on what type of material is delivered to players and how concussion education is delivered. Additionally, this study found that 45.1% of participants reported that they have received at least one sports-related concussion, despite players participating in a range of high-contact and low-contact sports. The extent to which athletes in high-contact sports receive concussion-related education may differ from athletes in low-contact sports (Hinton-Bayre et. al., 1999). Players in high-contact sports also may differ in attitudes toward sports-related concussions than athletes in low-contact sports due to their difference in exposure to concussions, which can impact intention to report (Weber et. al., 2019). Based on the prevalence of concussions in low-contact to high-contact sports, there is a need for future implementation of standardized education in collegiate club sports.

Another main finding in this study was that there were significant differences in concussion knowledge between participants who received concussion education and participants who did not receive concussion education. These results are similar to previous studies (Chinn et. al, 2016; Fedor et. al, 2015; Conway et. al., 2020) that found that higher levels of concussion-related education are significantly correlated with higher concussion knowledge. In an analysis by Kerr et. al. (2016) of 797 former collegiate athletes, 33% of players who received previous sports-related concussions reported that they failed to disclose at least one SRC during their entire high school, collegiate, and/or professional careers due to a lack of concussion-related knowledge. In order to appropriately report a sports-related concussion, collegiate athletes must have a foundational knowledge on concussions (Kerr et. al., 2016). The results from this study yielded significant differences in concussion knowledge between participants who received concussion education and those who did not, which may be explained due to the disparity in concussion education given to collegiate club sport athletes.

No significant differences were found in attitudes between collegiate club sport athletes who received concussion education and players who did not receive concussion education. Kroshus et. al. (2015) found that players' attitude is a good indicator in predicting if they would report a sports-related concussion. However, a study by van Vuuren et. al. (2020) indicates that sports-related concussions continue to be underreported because collegiate athletes prioritize being able to participate in their sport over their health. A variety of barriers impact a player's attitude, which impacts their likelihood to report a concussion (Salmon et. al., 2021). Some of these barriers include players believing concussions are an inherent part of the game, a player's passion/competitiveness, withholding information from trainers and coaches, being embarrassed by receiving a concussion in a low-impact sport, team culture, and not understanding that concussions can occur in any/all sports (Beverly et. al., 2018). Attitude not being statistically significant between collegiate club sport athletes who received concussion education and players who did not receive concussion education could be a result of the barriers each individual faces.

Limitations and Implications

The sample size in this study was relatively small. This impacts the power of the study and could affect the internal and external validity. The study also only uses one university in the Southeastern United States, so the results from the study might not be generalizable to all collegiate club sport athletes.

This study indicated that there are significant differences in concussion knowledge between participants who received concussion education and participants who did not receive concussion education. Development of a standard concussion prevention education for collegiate club sport organizations is critical in improving athletes' knowledge and attitude toward concussions. Emphasis should be placed on the signs and symptoms of concussions, so players are aware of the effects of the injury. Additionally, schools permitting club and intramural sports should implement policies that guarantee players in club sports receive the same education as varsity sport athletes. With the NCAA implementing policies requiring that institutions provide varsity athletes with annual concussion education (Kroshus & Baugh, 2016), club sport athletes should receive a similar educational program. Despite the difference in competitiveness between varsity athletes and club sport athletes, they still are playing the same sports and facing similar risks of injury. Therefore, the development and implementation of a standardized concussion prevention education is important in increasing the knowledge, attitudes, and reporting behavior of collegiate club sport athletes.

CONCLUSION

The purpose of this study is to explore current concussion education given to collegiate club sports athletes and understand players' concussion knowledge and attitudes. A key finding of this study was that 77.5% of collegiate club sport athletes reported not receiving concussion education. Additionally, this study identified significant differences in concussion knowledge between participants who received concussion education and participants who did not receive concussion education. No significant differences were found in attitude between collegiate club sport athletes who received concussion education and players who did not receive concussion education. These findings begin to fill the current gap in concussion-related research on collegiate club sport athletes; however, further research is needed to determine effective concussion-prevention education for this population.

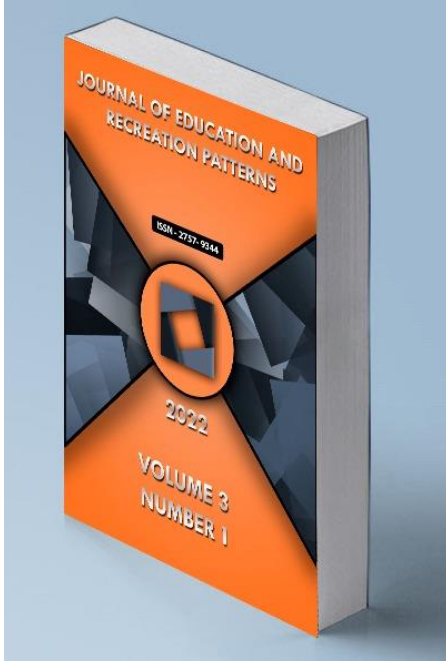
REFERENCES

- Arthur-Banning, S. G., Jameyson, D., Black, K., & Mkumbo, P. (2018). An epidemiology of sport injury rates among campus recreation sport programs. *Rehabilitation Science*, 3(2), 38–42.
- Baugh, C. M., Kroshus, E., Daneshvar, D. H., Filali, N. A., Hiscox, M. J., & Glantz, L. H. (2015). Concussion management in United States college sports compliance with National Collegiate Athletic Association concussion policy and areas for improvement. *The American Journal of Sports Medicine*, 43(1), 47–56.
- Baugh, C. M., Meehan III, W. P., Kroshus, E., McGuire, T. G., & Hatfield, L. A. (2019). College football players less likely to report concussions and other injuries with increased injury accumulation. *Journal of Neurotrauma*, 36(13), 2065–2072.

- Beidler, E., Bretzin, A. C., Hanock, C., & Covassin, T. (2018). Sport-related concussion: knowledge and reporting behaviors among collegiate club-sport athletes. *Journal of Athletic Training, 53*(9), 866–872.
- Beverly, E. A., Fredricks, T. R., Leubitz, A., Oldach, B. R., Kana, D., Grant, M. D., ... & Guseman, E. H. (2018). What can family medicine providers learn about concussion non-disclosure from former collegiate athletes? *BMC Family Practice, 19*(1), 1–11.
- Caron, J. G., Rathwell, S., Delaney, J. S., Johnston, K. M., Ptito, A., & Bloom, G. A. (2018). Development, implementation and assessment of a concussion education programme for high school student-athletes. *Journal of Sports Sciences, 36*(1), 48–55.
- Chinn, N. R., & Porter, P. (2016). Concussion reporting behaviours of community college student-athletes and limits of transferring concussion knowledge during the stress of competition. *BMJ Open Sport & Exercise Medicine, 2*(1), e000118.
- Constantine, M. G. & Ponterotto, J. G. (2006). Evaluating and selecting psychological measures for research purposes. In F. T. L. Leong & J. T. Austin (Eds.), *The psychology research handbook* (2nd ed., pp. 104–113). Sage Publications.
- Conway, F. N., Domingues, M., Monaco, R., Lesnewich, L. M., Ray, A. E., Alderman, B. L., ... & Buckman, J. F. (2020). Concussion symptom underreporting among incoming national collegiate athletic association division I college athletes. *Clinical Journal of Sport Medicine, 30*(3), 203–209.
- Cusimano, M. (2009). Canadian minor hockey participants' knowledge about concussion. *The Canadian Journal of Neurological Sciences, 36*(3), 315–320.
- Daneshvar, D. H., Nowinski, C. J., McKee, A. C., & Cantu, R. C. (2011). The epidemiology of sport-related concussion. *Clinics in Sports Medicine, 30*(1), 1–17. <https://doi.org/10.1016/j.csm.2010.08.006>
- Deuschle, C., Keith, J., Dugan, K., Williams, M., Taravath, S., & Lecci, L. (2021). Baseline concussion testing increases agreement with favorable concussion safety decisions in hypothetical scenarios. *Health Education & Behavior. https://doi.org/10.1177/10901981211003509*
- Fedor, A., & Gunstad, J. (2015). Limited knowledge of concussion symptoms in college athletes. *Applied Neuropsychology: Adult, 22*(2), 108–113.
- Forrester, S. (2006). An examination of the factors contributing to student satisfaction with their overall academic experience. *SCHOLE: A Journal of Leisure Studies and Recreation Education, 21*(1), 21–33.
- Graham, R., Rivara, F. P., Ford, M. A., & Spicer, C. M. (2014). Committee on Sports-Related Concussions in Youth, Board on Children, Youth, and Families, Institute of Medicine, & National Research Council (Eds.). *Sports-Related Concussions in Youth: Improving the Science, Changing the Culture*. National Academies Press.
- Hinton-Bayre, A. D., Geffen, G. M., Geffen, L. B., McFarland, K. A., & Frijs, P. (1999). Concussion in contact sports: Reliable change indices of impairment and recovery. *Journal of Clinical and Experimental Neuropsychology, 21*(1), 70–86.
- Kerr, Z. Y., Register-Mihalik, J. K., Kroshus, E., Baugh, C. M., & Marshall, S. W. (2016). Motivations associated with nondisclosure of self-reported concussions in former collegiate athletes. *The American Journal of Sports Medicine, 44*(1), 220–225.
- Kroshus, E., & Baugh, C. M. (2016). Concussion education in US collegiate sport: What is happening and what do athletes want? *Health Education & Behavior, 43*(2), 182–190.

- Kroshus, E., Daneshvar, D. H., Baugh, C. M., Nowinski, C. J., & Cantu, R. C. (2014). NCAA concussion education in ice hockey: An ineffective mandate. *British Journal of Sports Medicine, 48*(2), 135–140.
- Kroshus., E, Baugh, C. M., Daneshvar, D. H., Nowinski, C. J., Cantu, R. C. (2015). Concussion reporting intention: A valuable metric for predicting reporting behavior and evaluating concussion education. *Clinical Journal of Sport Medicine, 25*(3), 43–47.
- Lifschutz, L. (2012). Club sports: Maximizing positive outcomes and minimizing risks. *Recreational Sports Journal, 36*(2), 104–112.
- Lower, L. M., Turner, B. A., & Petersen, J. C. (2013). A comparative analysis of perceived benefits of participation between recreational sport programs. *Recreational Sports Journal, 37*(1), 66–83. <https://doi.org/10.1123/rsj.37.1.66>
- Lystad, R. P., & Strotmeyer, S. J. (2018). Concussion knowledge, attitudes and reporting intention among adult competitive Muay Thai kickboxing athletes: A cross-sectional study. *Injury Epidemiology, 5*(1), 1–7.
- McAllister-Deitrick, J., Beidler, E., Wallace, J., & Anderson, M. (2022). Concussion knowledge and reporting behaviors among collegiate athletes. *Clinical Journal of Sport Medicine, 32*(1), 56–61.
- McKeithan, L., Hibshman, N., Yengo-Kahn, A. M., Solomon, G. S., & Zuckerman, S. L. (2019). Sport-related concussion: Evaluation, treatment, and future directions. *Medical Sciences, 7*(3), 1–19. <https://doi.org/10.3390/medsci7030044>
- Musille, A. M. (2016). *A preliminary examination of concussion recovery patterns in collegiate varsity and club sport athletes* [Unpublished doctoral dissertation]. Miami University.
- O’Connell, E., & Molloy, M. G. (2016). Concussion in rugby: Knowledge and attitudes of players. *Irish Journal of Medical Science, 185*(2), 521–528.
- Pearce, A. J., Young, J. A., Parrington, L., & Aimers, N. (2017). Do as I say: Contradicting beliefs and attitudes towards sports concussion in Australia. *Journal of Sports Sciences, 35*(19), 1911–1919.
- Register-Mihalik, J. K., Guskiewicz, K. M., McLeod, T. C. V., Linnan, L. A., Mueller, F. O., & Marshall, S. W. (2013). Knowledge, attitude, and concussion-reporting behaviors among high school athletes: A preliminary study. *Journal of Athletic Training, 48*(5), 645–653.
- Roberts, T., Miller, T., Wells, J. (2003). *Sports clubs: A resource guide*. NIRSA.
- Robinson, S. (2021). *Perceptions of leadership style and likelihood to disclose concussion symptoms: Coach’s and athletes’ perspectives* [Unpublished doctoral dissertation]. Southern Illinois University at Edwardsville.
- Rosenbaum, A. M., & Arnett, P. A. (2010). The development of a survey to examine knowledge about and attitudes toward concussion in high-school students. *Journal of Clinical and Experimental Neuropsychology, 32*(1), 44–55.
- Salmon, D. M., Romanchuk, J., Sullivan, S. J., Walters, S., Clacy, A., Register-Mihalik, J. K., ... & Keung, S. (2021). Concussion knowledge, attitude and reporting intention in rugby coaches and high school rugby players. *International Journal of Sports Science & Coaching, 16*(1), 54–69.

- Shenouda, C., Hendrickson, P., Davenport, K., Barber, J., & Bell, K. R. (2012). The effects of concussion legislation one year later—what have we learned: A descriptive pilot survey of youth soccer player associates. *PM&R*, 4(6), 427–435.
- Spreitzer, E. (1994). Does participation in Interscholastic Athletics affect adult development? *Youth and Society*, 25(3), 368–387.
- van Vuuren, H., Welman, K., & Kraak, W. (2020). Concussion knowledge and attitudes amongst community club rugby stakeholders. *International Journal of Sports Science & Coaching*, 15(3), 297–305.
- Waltzman, D., Daugherty, J., Snedaker, K., Bouton, J., & Wang, D. (2020). Concussion reporting, return to learn, and return to play experiences in a sample of private preparatory high school students. *Brain Injury*, 34(9), 1193–1201.
- Weber, M. L., Suggs, D. W., Bierema, L., Miller, L. S., Reifsteck, F., & Schmidt, J. D. (2019). Collegiate student-athlete sex, years of sport eligibility completed, and sport contact level influence on concussion reporting intentions and behaviours. *Brain Injury*, 33(5), 592–597.
- Weber, M., & Edwards, M. G. (2012). Sport concussion knowledge in the UK general public. *Archives of Clinical Neuropsychology*, 27(3), 355–361.
- White, P. E., Newton, J. D., Makdissi, M., Sullivan, S. J., Davis, G., McCrory, P., ... & Finch, C. F. (2014). Knowledge about sports-related concussion: Is the message getting through to coaches and trainers? *British Journal of Sports Medicine*, 48(2), 119–124.



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Investigation of Metaphorical Perceptions of University Students on the Concept of Sustainability

Semih ayak¹

To cite this article:

ayak, S. (2022). Investigation of Metaphorical Perceptions of University Students on the Concept of Sustainability. *Journal of Education and Recreation Patterns (JERP)*, 3(1), 13-24

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

This article was presented as abstract at the International Congress on Social Sciences for Sustainability 2021/ May 22-23/ Yıldız Technical University, İstanbul-Türkiye

¹ Semih ayak, Baheşehir University, semihcayak@gmail.com,  <https://orcid.org/0000-0003-4360-4288>

Investigation of Metaphorical Perceptions of University Students on the Concept of Sustainability

Semih Çayak¹

ARTICLE INFORMATION

Original Research Paper

Received: 05.03.2022

Revision: 25.03.2022

Accepted: 07.04.2022

<https://jerpatterns.com>

June, 2022

Volume: 3, No: 1

Pages: 13-24

Abstract

The aim of this study is to reveal the perceptions of university students, who will form the qualified manpower of their country and who are expected to use sustainability effectively in every field in the future, about the concept of "sustainability" through metaphors. In the study, the phenomenology design was used. The data of the research were collected from 337 university students studying at Kırklareli University Faculty of Science and Literature in the spring semester of the 2020-2021 academic year. The collected data were analyzed and interpreted with content analysis technique. According to the findings, university students produced 301 valid and 137 different metaphor images regarding the concept of "sustainability". These produced metaphor images were then categorized by considering their common features. When the common features of these metaphors were examined, 8 different categories were reached. These; sustainability in the context of continuity, sustainability in the context of need, sustainability in the context of stability/order, sustainability in the context of struggle, sustainability in the context of resource conservation, sustainability in the context of guide, sustainability in the context of innovation and sustainability in the context of value. When the categories of metaphor images created by university students for the concept of "sustainability" are examined, it is seen that sustainability is perceived most in the context of continuity. In addition, when the categories reached were evaluated as a whole, it was seen that the perceptions of university students regarding the concept of "sustainability" were generally positive.

Keywords: Sustainability, Higher Education, University Student, Metaphor

Copyright: © 2022 (Sturdivant) This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

INTRODUCTION

Sustainability, which is used in different disciplines and has a wide range of applications, is based on the idea of consuming less resources than generally produced. The book "Sylvicultura Oeconomica", written by Hans Carl von Carlowitz in 1713, is shown as one of the oldest sources written in the field of sustainability. In this book, sustainability is used to explain the principle that "if you want to make a forest sustainable, you should not get more wood than grows in that forest". As a matter of fact, for 200 years, the term sustainability was used as a forestry term until the publication of the book "Limits to Growth" published by the Club of Rome in 1972 and the concept of sustainability being widely accepted in different fields (Fischler, 2014).

Sustainability in its current usage was first used in 1972 by Goldsmith, Allen, Allaby, and Avoll in an article published in *The Ecologist*. In this article, sustainability is discussed in the context of ecosystems that are necessary to sustain human existence (Cabezas & Diwekar, 2012). Sustainability was also on the agenda in the United Nations Environment Program in 1972. Then, as a common goal of the international committee, the United Nations Environment and Development Commission published the "Our Common Future" report in 1987, under the chairmanship of Norwegian Prime Minister Gro Harlem Brundtland. The concept of sustainability, defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987) in the Our Common Future report, describes the respectful use of natural resources to leave the world with the same or even better opportunities for future generations (Cabezas & Diwekar, 2012). This report, which has become an important resource for sustainability studies in the coming years, states that "sustainable development" should be promoted as the main remedy for the crises that humanity is facing in general (Ricketts, 2010).

The term sustainability is not only used to abuse the environment while carrying out commercial activities (Henderson, 2011: 247). Because it is seen that sustainability, which attracts increasing attention, can also be defined in the literature as organizational approaches that provide a balance between short-term corporate goals and long-term corporate and social responsibility (Pearce, Manz & Akanno, 2013).

Sustainability, which can be defined as everyone doing their part to build the world they want to live in and want their children and grandchildren to inherit, means recognizing the choices and behaviors that affect the complex balance of the social, ecological, and economic systems of this world, and expanding this awareness through conversations that can then lead to collaborative work (Ferdig, 2007). In this respect, it is of great importance that all individuals have a correct perception and sufficient awareness about sustainability.

Metaphors are one of the tools that individuals use in trying to explain how they see life, the environment, events and objects with different analogies (Cerit, 2008). Metaphors are not only seen as a rhetoric for embellishing the language we use in our daily life, because the most complex thoughts and meanings can be understood with the help of metaphors (Saban, 2008), which are mental models that enable people to see a certain phenomenon with another phenomenon (Yıldırım & Şimşek, 2013). The use of metaphors to explain sustainability, which is an abstract and complex concept, is common, and in studies conducted with different participant groups, it is seen that each of the metaphors used to conceptualize the concept of sustainability points to a different aspect of sustainability (Bektaş, 2022; Rout & Reid, 2020; Taşçı, 2022; Tavazar, Güzel & Esentaş, 2018). Based on this information, in this study, the metaphorical perceptions of university students, who are expected to make significant contributions to the sustainable development of their country and constitute the country's qualified individuals, were investigated.

Purpose of the Research

The purpose of this research; The aim is to collect the metaphor images created by undergraduate students studying in different departments at Kırklareli University Faculty of Arts and Sciences in the spring term of the 2020-2021 academic year for the concept of sustainability and to classify these metaphor images under various categories to determine the perceptions of university students. In the study, "What are the metaphor images that university students use regarding the concept of sustainability?" search for an answer to the question. Accordingly, the following sub-questions were created:

1) Which metaphor images do university students use regarding the concept of "sustainability"?

2) Under which categories can the metaphor images used by university students regarding the concept of "sustainability" be gathered?

METHOD

Research Design

This research was designed in the phenomenology pattern, one of the qualitative research designs. The phenomenological design focuses on phenomena that are not completely foreign but whose meaning cannot be fully understood (Patton, 2002). In phenomenological studies, data sources are individuals who experience the phenomenon that the research focuses on and can express this phenomenon (Yıldırım & Şimşek, 2013). Based on this information, the phenomenon focused on in the research process is how university students conceptualize their thoughts about the concept of "sustainability" with the help of metaphor.

Participants

Participants of the study were selected by convenient sampling method. The study group of the research is 337 university students studying in various departments at Kırklareli University Faculty of Sciences and Literature in the spring semester of the 2020-2021 academic year. Of these students, 211 (63%) were female, 126 (37%) were male, and 163 (48%) were between the ages of 18-20, 154 (46%) were between the ages of 21-23 and 20 were (6%) are 24 and older.

Data Collection Tool and Process

Data collection tool: It is a fill-in-the-blank form developed by researchers in which answers to demographic questions, metaphors to be produced and explanations about these metaphors are written (is like...; because ...). The real power of metaphors is in questions about adjectives. Everyone can attribute different meanings to the same metaphor. It is important to ask the question "why" in understanding these different meanings and for what purpose a metaphor is used (Yıldırım & Şimşek, 2013). In addition, the gender and age of the students were taken as demographic information.

Validity and Reliability Study

In qualitative research, validity and reliability are not considered as in quantitative research. In accordance with the paradigm of qualitative research, Lincoln & Guba (1985)

recommended using the concepts of "credibility" instead of internal validity, "transferability" instead of external validity, "consistency" instead of internal reliability, and "confirmability" instead of external reliability.

In this context, to ensure the credibility and transferability of the research, the collected data were presented as detailed as possible (frequency, number of participants, direct quotations, participant codes, etc.) and it was tried to explain how the results were reached. To ensure the consistency and confirmability of the research, the opinions of four experts were consulted to determine whether the metaphors obtained represent the determined themes, and as a result of the evaluations of the researcher and the experts, consensus and disagreement were calculated. Generally, rates of 70% and above are considered "sufficient", and rates above 90% are considered "good" (Miles & Huberman, 1994). As a result of this calculation, a reliability rate of 89% emerged. In addition, the steps followed in the research were reported in detail and clearly by the researcher.

Analysis of Data

In phenomenological studies, data analysis is aimed at revealing experiences and meanings. For this purpose, content analysis consisting of coding, finding the themes, organizing the data according to the codes and themes was used in the analysis of the data. The main purpose of content analysis is to reach concepts and relationships that can explain the collected data (Yıldırım & Şimşek, 2013). The metaphor images developed by the participants in relation to the question in the fill-in-the-blank form and their answers were analyzed in four stages. These are (1) coding the data, (2) creating the categories, (3) organizing the data according to the codes and categories, and (4) ensuring the validity and reliability. In addition, a number was given for each participant, and a code was given next to this number to be shown as "F" for female students and as "M" for male students. For example, 12M: The 12th person from whom the metaphor is taken, and this person is a male student.

FINDINGS

In this section, metaphor images produced by university students regarding the concept of sustainability and the frequencies of these metaphor images are given. Then, the categories created from these metaphor images were explained by supporting the quotations produced by the participants.

When the metaphor images used by university students regarding the concept of sustainability were evaluated, a total of 301 valid and 137 different metaphor images were obtained from 337 students. As seen in Table 1, the main metaphorical expressions of university students regarding the concept of sustainability are life (24), love (22), sun (13), love (8), driving (7), water (7) and blood (6).

Table 1. Metaphor Expressions of University Students about the Concept of Sustainability

Metaphor Images	f	Metaphor Images	f	Metaphor Images	f	Metaphor Images	f
Life	24	Relationship	2	Mountain	1	Bullet	1
Love	22	Human	2	Mountaineering	1	Fruit	1
Sun	13	Stability	2	Trouble	1	A happy child	1
Passion	8	Culture	2	Brushing teeth	1	A sweet lover	1
Driving	7	School	2	Nature climbing	1	River	1
Water	7	Read	2	To get a tattoo	1	Nutella	1
Blood	6	Willingness to learn	2	Feeling	1	Ocean	1
Education	5	Money	2	Idea	1	Teacher	1
Day and night	5	Patience	2	Universe	1	Immortality	1
Force	5	Prestige	2	Philosophy	1	Confidence	1
Book	5	Wheel	2	Past	1	Battery	1
Machine	5	Soil	2	Future	1	Rhythm	1
Wind	5	Space	2	Recycle	1	Novel	1
Food	5	Swimming	2	Playing guitar	1	Spirit	1
Road	5	Mind	1	Sky	1	Persistence	1
Time	5	Forehead sweat	1	Day	1	Politics	1
Information	4	Shopping	1	Trust	1	Piercing of stone by water	1
River	4	Mother's patience	1	Beauty	1	Phone that does not run out of charge	1
Learning	4	Mother-child	1	Hafiz	1	Waterfall	1
Family	3	Friendship	1	Error	1	History	1
Habit	3	Fire	1	Dream	1	Saving	1
Loop	3	Moon	1	Speed	1	Sweet	1
World	3	Loyalty	1	Betrayal	1	Experience	1
Energy	3	Honey	1	Interest	1	Thermal reactor	1
Fitness	3	Balloon	1	Business	1	Seed	1
Working iron	3	Gasoline	1	Generator	1	Train	1
Heart	3	Computer storage	1	Cosmos	1	Train track	1
Breath	3	Science	1	Pen	1	Turkish state	1
Chain	3	Lifeblood	1	Dark	1	Rain	1
Stream	2	Effort	1	Stability	1	Judgment	1
Mill	2	Study	1	Earning	1	Searching for new flavors	1
Nature	2	Circle	1	Goat	1	Talent	1
Friendship	2	Flower watering	1	Classic car	1	Star	1
Marriage	2	Cheetah	1	Sand watch	1	Walk	1
						Wheel of time	1
						Total	301

Reasons for Simulating the Metaphors Used by University Students Regarding the Concept of Sustainability

Reasons for comparing the metaphor images used by university students regarding the concept of sustainability; sustainability in the context of continuity (f=115), sustainability in the context of need (f=76), sustainability in the context of stability/order (f=48), sustainability in the context of struggle (f=32), sustainability in the context of protecting resources (f=11), sustainability in the context of the guide (f=8), sustainability in the context of innovation (f=6) and sustainability in the context of value (f=5) are given in Table 2 under the categories. These categories were revealed by examining the reasons for the metaphor images obtained.

Table 2. Reasons for Comparing the Metaphor Images Used for the Concept of Sustainability

Categories	Metaphor Images	f
Sustainability in the context of continuity	life (24), passion (8), road (5), book (5), time (5), river (4), information (4), learning (4), habit (3), world (3), marriage (2), read (2), prestige (2), stream (2), space (2), balloon (1), business (1), day (1), Turkish State (1), mother-child (1), lifeblood (1), trouble (1), persistence (1), betrayal (1), judgment (1), dream (1), bullet (1), cosmos (1), piercing of stone by water (1), star (1), walk (1), study (1), science (1), phone that does not run out of charge (1), rhythm (1), flower watering (1), experience (1), train track (1), confidence (1), river (1), thermal reactor (1), immortality (1), universe (1), politics (1), loyalty (1), future (1), fire (1), novel (1), shopping (1), Nutella (1), generator (1), interest (1), sand watch (1), ocean (1), sky (1)	115
Sustainability in the context of need	love (22), sun (13), water (7), blood (6), food (5), education (5), heart (3), breath (3), friendship (2), soil (2), battery (1), fruit (1), rain (1), honey (1), gasoline (1), spirit (1), sweet (1), trust (1)	76
Sustainability in the context of stability/order	driving (7), machine (5), day and night (5), loop (3), chain (3), mill (2), stability (2), wheel (2), human (2), culture (2), moon (1), dark (1), train (1), stability (1), idea (1), a happy child (1), computer storage (1), beauty (1), to get a tattoo (1), brushing teeth (1), hafiz (1), circle (1), seed (1), wheel of time (1), waterfall (1)	48
Sustainability in the context of struggle	force (5), working iron (3), fitness (3), relationship (2), willingness to learn (2), patience (2), swimming (2), speed (1), nature climbing (1), a sweet lover (1), goat (1), cheetah (1), mountain (1), friendship (1), philosophy (1), mother's patience (1), effort (1), forehead sweat (1), mountaineering (1), earning (1),	32
Sustainability in the context of protecting resources	wind (5), nature (2), money (2), talent (1), saving (1)	11
Sustainability in the context of the guide	school (2), teacher (1), feeling (1), error (1), history (1), past (1), mind (1),	8
Sustainability in the context of innovation	energy (3), recycle (1), searching for new flavors (1), playing guitar (1))	6
Sustainability in the context of value	family (3), classic car (1), pen (1)	5
Total		301

Some participant statements regarding the categories seen in Table 2 are as follows:

a) Sustainability in the context of continuity

Some participant statements that sustainability is a phenomenon that requires continuity and that it continues continuously are given below:

“Sustainability is like life; because it continues until death” (72M).

“Sustainability is like a novel; because the more you read, the more you can read” (24F)

“Sustainability is like a habit; because once you start you can't quit” (52M)

“Sustainability is like the road; because it goes on all the time” (139M)

b) Sustainability in the context of need

Participant views that sustainability is a great need for both humanity and other beings and that the life cycle on earth depends on it are presented below:

“Sustainability is like love; because you cannot live without it” (12M)

“Sustainability is like gasoline; because a car needs it to travel” (51F)

“Sustainability is like blood; because it must continue” (63M)

“Sustainability is like a battery; because without the battery the operation will not continue” (97M)

c) Sustainability in the context of stability/order

Some of the participant views that sustainability functions as an important balance mechanism in maintaining order or stability in the universe are presented below:

“Sustainability is like night and day; because it goes on in constant transformation” (18F)

“Sustainability is like a chain; because the completion of the ring depends on each other” (87F)

“Sustainability is like the moon; because it is regulated” (243M)

“Sustainability is like a circle; because as you turn, you come to the same place” (109F)

d) Sustainability in the context of struggle

Here are some participant views that sustainability requires effort and that individuals should actively participate in sustainability activities despite some difficulties:

“Sustainability is like working iron; because working iron does not rust” (31M)

“Sustainability is a sweat; because it takes effort” (83F)

“Sustainability is like a goat; because it is necessary to be stubborn” (77M)

e) Sustainability in the context of protecting resources

Some of the participant's views on the need for conscious consumption of existing resources, which is the end of sustainability, and that future generations may need these resources are as follows:

“Sustainability is like money; because they want it to never end” (36F)

“Sustainability is like nature; because it always offers us something” (48M)

f) Sustainability in the context of the guide

Some of the participants that sustainability and sustainability principles can guide individuals for a more livable environment are as follows:

“Sustainability is like school; because it gives all kinds of information” (13M)

“Sustainability is like a teacher; because it provides more information” (39M)

g) Sustainability in the context of innovation

Some participant statements regarding sustainability as the ability to always follow developments closely, attach importance to innovation and thus maintain the existence of the system are presented below:

“Sustainability is like recycling; because even if it ends, it always starts again” (98M)

“Sustainability is like playing the guitar; because there are always different tones” (5M)

h) Sustainability in the context of value

The statements of the participants that sustainability is of great importance especially for living things and that it is a concept that adds value to life are presented below:

“Sustainability is like the classic car; because it is always valuable” (41M)

“Sustainability is like family; because it is with us for a lifetime” (227M)

DISCUSSION AND RESULT

In this study, which was conducted to determine the metaphorical perceptions of university students about the concept of sustainability, it was seen that a large part of the university students used the metaphors of "life, love and sun" out of 137 different metaphors produced. In similar metaphorical studies on sustainability, these metaphors were frequently emphasized by the participants. E.g; In a similar study conducted by Muşlu-Kaygısız (2020) with education faculty students, she found that the metaphors of life and sun are among the metaphors most used by pre-service teachers in explaining the concept of sustainable development. Similarly, in the research conducted by Tavazar, Güzel, and Esentaş (2018), the sun metaphor was among the metaphors emphasized by the participants. Meral, Küçük, and Gedik (2016) found that the participants mostly included metaphors such as "human, life, mother" in their research in which they examined the metaphorical perceptions of education faculty students regarding the concept of environment, which is one of the sub-dimensions of sustainable development. In this research on sustainable development, it was seen that teacher candidates benefited from these metaphors.

As the reasons for analogy with the metaphor images used by university students regarding the concept of sustainability in the research; “sustainability in the context of continuity”, “sustainability in the context of need”, “sustainability in the context of stability/order”, “sustainability in the context of struggle”, “sustainability in the context of protecting resources”, “sustainability in the context of a guide”, “sustainability in the context of innovation” and “sustainability in the context of value” categories were created.

It is thought that most of the university students participating in the research perceive the concept of sustainability as a state of continuity through the metaphors they have created, and this is due to the fact that sustainability in the most basic sense evokes the meanings of continuity. In similar metaphorical research on sustainability, Muslu-Kaygusuz (2020) classified the metaphors she collected in similar metaphorical research on sustainability under the category of continuity. Many of the students perceive sustainability as a need with the metaphors they reported. Here, too, it is thought that the publications and discourses that sustainability, which has a widespread and popular use in many different fields, is a necessary and important concept for the future (Curren & Metzger, 2017; Jickling, 2000; Kuhlman &

Farrington, 2010). Many university students participating in the research perceive sustainability as stability/order, struggle, and protection of resources. From these findings, it is understood that university students see sustainability as a long-term and responsible concept. As a matter of fact, stability/order and struggle are not immediate actions, and their effects appear in a long time (Lambert, 2011). As stated in Brundtland (1987) report, using, and protecting resources efficiently and effectively are among the most basic concepts of sustainability. This situation supports this finding of the research. Some university students participating in the research perceive sustainability as a guide, innovation, and value. Sustainability has become very important today, especially since existing resources must be consumed in a way that meets the needs of future generations, and it has become a concept that is used in many fields and whose value is increasingly felt today (Cohen, DeFrancia & Martinez, 2016). It is thought that this situation has an impact on the sustainability perceptions of the university students participating in the research. In addition, sustainability and its principles have guided people in providing sustainability in every field. Like this result of the research, Muslu-Kaygısız (2020) classified some of the metaphors she collected under the category of "guidance". When the metaphors and themes obtained from the research are examined as a whole, it can be said that the research findings are supported by the findings obtained from the existing literature and similar studies. However, the fact that most of the metaphors produced are concentrated especially under certain categories can be thought to be since the students do not have a comprehensive and in-depth knowledge of the concept of sustainability. As a matter of fact, Faiz and Bozdemir-Yüzbaşıoğlu (2019) found in their research with pre-service teachers that the perceptions of the participants on sustainable development were not very high.

Limitations

This research has some limitations. The research was carried out with Kırklareli University Faculty of Science and Literature students. Similar research can be done to cover different faculties and universities. Thus, it will be possible to examine the perceptions of students studying at different universities and different departments more comprehensively regarding the concept of sustainability.

Recommendations

Within the framework of the findings obtained from the research, the following recommendations can be developed for researchers and practitioners:

1. Necessary trainings can be organized for students to gain sufficient awareness about sustainability, and universities can also prepare elective courses on this subject.
2. Studies using the quantitative research method can be conducted to determine the attitudes and perceptions of university students towards the concept of sustainability.
3. Similar research can be conducted at primary, secondary and high school levels, and the students' perceptions of sustainability at different levels can be examined.

CONCLUSION

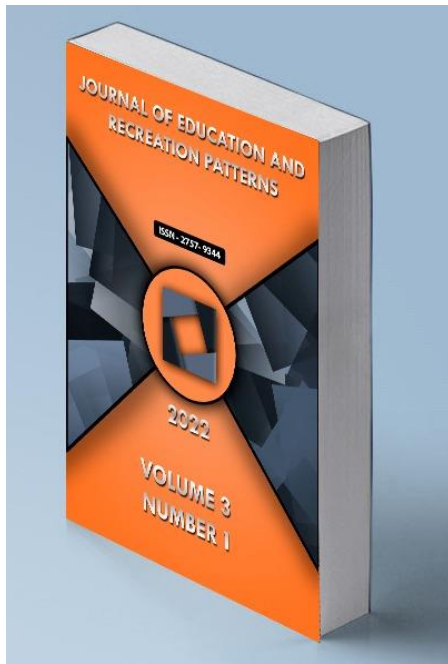
This research was conducted to reveal the perceptions of university students regarding the concept of "sustainability" through metaphors. As a result of this research conducted with 337 university students, it was found that students perceived the concept of sustainability mostly in terms of continuity, need, stability/order, struggle, protection of resources, guide, innovation, and value. In addition, when the categories reached were evaluated as a whole, it

was seen that the perceptions of university students regarding the concept of "sustainability" were generally positive.

REFERENCES

- Bektaş, F. L. Ö. (2022). Metaphors about sustainability used by academicians in the department of preschool education: Metaphors about sustainability. *International Journal of Curriculum and Instruction*, 14(1), 56-78. <http://ijci.wcci-international.org/index.php/IJCI/article/view/880/425>
- Brundtland, G. H. (1987). Our common future—Call for action. *Environmental Conservation*, 14(4), 291-294. doi:10.1017/S0376892900016805
- Cabezas, H. & Diwekar, U. (2012). *Sustainability: Multidisciplinary Perspectives*; Cabezas, H., Diwekar, U.M., Eds.; Bethem Science: Sharjah.
- Cerit, Y. (2008). Students, teachers and administrators' views on metaphors with respect to the concept of teacher. *The Journal of Turkish Educational Sciences*, 6(4), 693-712. <https://dergipark.org.tr/tr/download/article-file/256303>
- Cohen, S. A., DeFrancia, K. L., & Martinez, H. J. (2016). A positive vision of sustainability. *Journal of Environmental Studies and Sciences*, 6(1), 231-238. DOI: 10.1007/s13412-016-0368-7
- Curren, R., & Metzger, E. (2017). *Living well now and in the future: Why sustainability matters*. MIT Press.
- Faiz, M. & Bozdemir Yüzbaşıoğlu, H. (2019). Teacher candidates' awareness of sustainable development. *Abant İzzet Baysal University Journal of Faculty of Education*, 19 (4), 1255-1271. <https://doi.org/10.17240/aibuefd.2019..-662082>
- Ferdig, M. (2007). Sustainability Leadership: Co-creating a Sustainable Future. *Journal of Change Management*, 7(1), 25-35. <https://doi.org/10.1080/14697010701233809>
- Fischler, F. (2014). *Sustainability: The concept for modern society Sustainable Entrepreneurship* (pp. 13-21) Heidelberg: Springer
- Henderson, S. (2011). The development of competitive advantage through sustainable event management. *Worldwide Hospitality and Tourism Themes*, 3(3), 245-257. <https://doi.org/10.1108/17554211111142202>
- Jickling, B. (2000). A future for sustainability? *Water, air, and soil pollution*, 123(1), 467-476. <https://doi.org/10.1023/A%3A1005211410123>
- Kuhlman, T., & Farrington, J. (2010). What is sustainability? *Sustainability*, 2(11), 3436-3448. <https://doi.org/10.3390/su2113436>
- Lambert, S. (2011). Sustainable leadership and the implication for the general further education college sector. *Journal of Further and Higher Education*, 35(1), 131-148. <https://doi.org/10.1080/0309877X.2010.540319>
- Lincoln, Y. & Guba, E. (1985). *Naturalistic Inquiry*. Sage Publications.
- Meral, E., Küçük, B. & Gedik, F. (2016). Metaphoric comprehension of training teachers of social studies as regards the concept of environment. *Kastamonu Education Journal*, 24(1), 65-78. <https://dergipark.org.tr/tr/download/article-file/210041>
- Miles, M. B. , & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.

- Muşlu-Kaygısız, G. (2020). Prospective primary school teachers' metaphoric perceptions about the concept of sustainable development. *Research And Experience Journal*, 5 (1) , 37-46. <https://dergipark.org.tr/tr/download/article-file/1162036>
- Patton, M. Q. (2002). *Qualitative evaluation and research methods* (3rd Ed.). Thousand Oaks, CA: Sage.
- Pearce, C. L., Manz, C. C., & Akanno, S. (2013). Searching for the holy grail of management development and sustainability: Is shared leadership development the answer? *Journal of Management Development*, 32(3), 247-257. <https://doi.org/10.1108/02621711311318274>
- Ricketts, G. M. (2010). The roots of sustainability. *Academic Questions*, 23(1), 20-53. <https://www.nas.org/academic-questions/23/1/the-roots-of-sustainability>
- Rout, M., & Reid, J. (2020). Embracing indigenous metaphors: a new/old way of thinking about sustainability. *Sustainability Science*, 15(3), 945-954. <https://doi.org/10.1007/s11625-020-00783-0>
- Saban, A. (2008). Metaphors about school. *Educational Administration: Theory and Practice*, 14(55), 459-496. <https://dergipark.org.tr/tr/pub/kuey/issue/10342/126702>
- Taşçı, G. (2022). Metaphorical perceptions of academicians in administrative positions in higher education regarding the concept of sustainability: Administrative positions in higher education. *International Journal of Curriculum and Instruction*, 14(1), 138-154. <http://ijci.wcci-international.org/index.php/IJCI/article/view/878>
- Tavazar, H., Güzel, P., & Esentaş, M. (2018). Özel sektörde çalışan yönetici ve müdürlerin “sürdürülebilirlik” kavramına ilişkin metaforik algıları. *Batman University Journal of Life Sciences*, 8(1/1), 58-68. <https://dergipark.org.tr/en/pub/buyasambid/issue/37495/380639>
- World Commission on Environment and Development (1987) *Our Common Future*. New York: Oxford University Press. <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Yıldırım, A. & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Publishing.



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com


Digital Paradigm Shift: HBCU Sport Management Programs Transformational Challenges


Jason L. Perry¹, Alex J. Anderson², N. Jonas Ohrberg³


To cite this article:

Perry, J.L., Anderson, A.J., & Ohrberg, N. (2022). Digital Paradigm Shift: HBCU Sport Management Programs Transformational Challenges. *Journal of Education and Recreation Patterns (JERP)*, 3(1), 25-35

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ **Jason L. Perry**, Howard University, Department of Health, Human Performance & Leisure Studies, USA, Jason.perry@howard.edu  <https://orcid.org/0000-0002-4114-1825>

² **Alex J. Anderson**, Bowie State University, Department of Teaching, Learning, & Professional Development, USA, Ajanderson1@bowiestate.edu  <https://orcid.org/0000-0003-4160-1673>

³ **N. Jonas Ohrberg**, Bowie State University, Department of Teaching, Learning, & Professional Development, USA, nohrberg@bowiestate.edu  <https://orcid.org/0000-0002-1842-0471>



Digital Paradigm Shift: HBCU Sport Management Programs Transformational Challenges

Jason L. Perry¹, Alex J. Anderson², N. Jonas Ohrberg³

ARTICLE INFORMATION

Original Research Paper

Received: 15.06.2022

Revision: 22.06.2022

Accepted: 28.06.2022

<https://jerpatterns.com>

June, 2022

Volume: 3, No: 1

Pages: 25-35

Abstract

Sport Management as an academic field has experienced a significant expansion and transformation over the last four decades. With an increased influence of advancements such as new learning technologies and virtual learning, educators in the field have been forced to adapt instructional design, course delivery, and realign sport management curriculum with the demands of the present-day sport industry. This paradigm shift has fostered significant growth in sport management degree programs at both the undergraduate and graduate levels. Leaders of these programs aim to meet the evolving needs of students in the areas of academic preparation and career readiness. However, Historically Black Colleges and Universities (HBCUs) that serve marginalized populations have experienced challenges as they strive to maintain robust academic sport management programming that foster student engagement and prepare students for careers in the sports industry. These challenges are heightened in part due to various institutional disparities experienced by HBCUs. The purpose of this theoretical paper is to examine the impact that the paradigm shift has had on HBCU sport management programs and to discuss the outlook of these programs in lieu of advancements within sport management as both a profession and academic field.

Keywords: Historically Black Colleges and Universities, Sport Management Degree Programs
Digital Paradigm Shift

Copyright: © 2022 (Sturdivant) This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

INTRODUCTION

The evolution of academic programs in the discipline of sport management has resulted in the need for leaders to evaluate the effectiveness of teaching and learning in the field. As the field of sport management continues to evolve, a digital paradigm shift has resulted in various technological advancements in the discipline. This includes the emerging of new learning technology, an increased use of virtual classroom spaces, and changes to the academic curriculum. The academic field of sport management continues to adapt to changes in both society and the professional realm to remain aligned with trends in the sports industry.

Although many institutions that offer sport management programs remain innovative and are equipped to sustain themselves into the future, some sport management programs find it difficult to obtain longevity. This can be contributed to disparities related to the digital divide among institutions, differences in the number of faculty, disparities in resources, and funding for sport management programs today. Many of the nation's Historically Black Colleges and Universities (HBCUs) face challenges in sustaining effective sport management programs and producing graduates that are prepared to enter jobs in the sport business industry due to factors that impact these institutions and their unique landscapes. Some of the challenges include the economic differences, social issues, and the learning environment that is present at many HBCUs today. Further, questions related to the ongoing emergence of virtual learning in HBCU sport management classrooms after the global pandemic remain a point of discussion.

Purpose

The purpose of this theoretical paper is to examine the paradigm shift in HBCU sport management programs caused by the evolution of technology in both the profession and classroom settings. Further, this paper will discuss the outlook of such programs in light of the emergence of new sport management courses, a shift in academic curriculum, and the emphasis of developing students that are prepared for the everchanging sport industry.

The Evolution of Sport Management Programs

Sport Management is one of the fastest growing disciplines in colleges and universities in the United States. Institutions develop sport management curriculum aimed to prepare students for careers in sport. Such careers include the positions of athletic director, sport coach, facility manager, sports agent, broadcasters, and much more. The sport industry is a very competitive field and the objective of the sport management faculty is to provide students with the knowledge and skills which will enable them to successfully apply what they learned in the sport management program to their career. As the way that sport organizations operate changed over time, graduates of sport management degree programs must be equipped to adapt to the ever-changing demands of the sport industry.

Although the curriculum requirements of individual programs vary there are similar subject areas that commonly make up the courses offered within academic programs today. Some of the common courses offered include foundational courses in sport management, legal issues in sport, sociology, facility management, ethics, and marketing. According to Brown et al. (2018), eighty-six percent of sport management undergraduate programs in the United States require mandatory internship credit hours incorporated in their curriculum. Brown's et al. (2018) research revealed that the internship was the most valuable requirement in the sport management program. This notion supports the need for sport management educators to

regularly evaluate and modify the experiential learning component of their curriculum to match the changes in the industry.

Sport management programs in higher education have evolved greatly since Ohio University's Masters of Sports Administration program, which was the first specialized academic sports program in 1966. Since then, sport management academic programs have grown significantly as well as student interest level. According to Jones et al. (2008), sport management programs have moved from a physical education model to more of a business-oriented model. The physical education model was more of a teaching-based model and has shifted to an exercise science model, called Kinesiology. Most Sport Management programs are housed in the College of Business, Education, Health Sciences, or Kinesiology. There are over 400 colleges and universities that offer a Sport Management or similar undergraduate degree. Of those institutions, less than 20 are Historically Black Colleges and Universities (HBCU). Less than ten Historically Black Colleges and Universities offer a master's degree in Sport Management (Sports Management Programs, 2022).

The National Association of Sport and Physical Education (NASPE) is an organization which developed national standards for sport and physical education. In 1986, NASPE established a sport management task force to develop guidelines for sport management programs. The North American Society for Sport Management (NASSM) was established to conduct annual conferences and to promote, stimulate, and encourage study, research, scholarly writing, and professional development in the area of sport management (NASSM, 2022).

Together NASPE and NASSM, in 1989 created a committee to oversee curricular guidelines for Sport Management. In 2005, NASPE and NASSM formed a task force for both accreditation and standards (Zeiff, 2009). In 2008, the Commission on Sport Management Accreditation (COSMA) was created. COSMA began accrediting college and university sport management programs. Currently, there is only one HBCU who has an accredited program. COSMA evaluates sport management programs on the assessment of educational outcomes (COSMA, 2022).

One component in which Sport Management has evolved is through technology. Sport management programs in recent years offer online degrees, although most of the online degrees are graduate programs. There are challenges to teaching online as many professors did not experience online learning in their undergraduate program. Willet's et al. (2019) study of sport management faculty perception of online undergraduate program revealed sport management faculty believed face-to-face option was more appropriate in the curriculum. This is beneficial to individuals who plan to continue their education while working in the sports field. Students who want to pursue a degree now have an opportunity to earn it through the online degree options. While Willet's et al. (2019) study showed online delivery in courses such as event operations and facility management were least appropriate. It revealed courses such as, introduction to sport management and sport media were best suited using online delivery. Through research, the Sport Management program can tweak curriculum using software applications in the classroom as well as during internships.

In the world of sports, the use of technology has allowed organizations to capture data and analyze athletes' performance, then make projections based on the data. Another area of technology is gaming. Both analyzing data and gaming have emerged in the last decade and created career opportunities.

Esports is a thriving billion-dollar industry which needs professionals to manage the business. Esports can be defined as competitive gaming, computer-mediated sport, or

interactive spectatorship (Freeman & Guo, 2017). Esports has tallied over 450 viewers worldwide while earning nearly \$1 Billion in revenue in 2019 (Pannekeet, 2019). As the Esports industry continues to grow, collegiate institutions have seen the values in Esports programs. Not only are colleges offering students an opportunity to compete for their Esports team, but academic courses and programs are now available to students who want to pursue a career in esports. In the Fall of 2019 Becker College in Worcester, Massachusetts was the first institution in the United States to offer an Esports Management Bachelor of Science degree. More colleges and universities have added Esports in their curriculum as major, minor, or certificate programs. In higher education, these courses are being included on both the undergraduate and graduate level. Institutions such as Ohio State University, George Mason University, and Saint Peter's University are a few institutions who have an undergraduate degree program in Esports. According to Jenny et al. (2021) the most popular Esport courses offered are Business of Esports/Managing Esports; Introduction/History of Esports; Esports Media Production/Communications; Esports Event Management; Introduction to Esport Coaching; and Introduction to Game Design. Jenny's et al. (2021) study found thirty-three institutions in the United States that offer an Esports academic program through undergraduate, graduate, certificate, or minor programs. A growing number of HBCU institutions host Esports teams, clubs, and academic programs.

Sport Analytics is another emerging topic in the sport management field. "Sport Analytics can be defined as the management of structured historical data, the application of predictive analytic models that utilize that data, and the use of information systems to inform decision makers and enable them to help their organizations in gaining a competitive advantage on the field of play" (Alamar, 2013, p.4). The evolution of the technology has provided benefits and has widened the scope of sport analytics to applications that allow organizations to player analysis, team analysis and many more. Analytics is also integrated in the business operations of sport organizations such as marketing, ticket sales, and fan engagement (Patel et al., 2020). Career opportunities in the sport analytics field include statisticians, player evaluation, computer programmer, and sport analyst. There are nearly twenty colleges and universities that offer either a sport analytics undergraduate degree, master's degree, or certificate. Currently, there are no HBCUs that offer any degree in Sport Analytics (Discover Data Science, 2022).

Historically Black College and University sport management programs must continue to adapt to changes in the sports industry. As this field remains competitive, HBCUs must have students prepared to work in the industry. As a result, a large portion of sport management programs include a component of experiential learning in academic programs. Sattler (2018), discussed how COSMA identified experiential learning as an integral component to be included in sport management curriculum. This is critical in the assessment of students as they apply or observe what is learned in the classroom. New courses have emerged as the evolution of the industry continues. These emerging courses include topics such as sport analytics, global sport management, Esports management, social justice in sport, and crypto in sports. Trends in the industry are commonly followed in academia to better prepare graduates for a competitive job market.

The Digital Paradigm Shift in Sport Management

Sport management as an academic field and the actual practice of sport management have experienced significant changes since Ziegler's review of the field's status at the time and the field's suggested future in 1987 (Ziegler, 1987). This includes an exponential growth of sport management degree programs from 40 undergraduate and 32 graduate programs in 1987 to over 180 undergraduate and 220 graduate programs in 2017 (Parkhouse, 1993; Willett et al.,

2017). The growth of sport management and changes that have occurred in the field over time were suggested several years ago. Scholars in sport management predicted that the future included adapting curriculum and pedagogical methodologies to meet students' learning needs, prepare students for careers in the field and the demands of the sport management industry, overall (Skinner & Gilbert, 2007).

Even though the sports industry and the study and practice of sport management have not experienced a Thomas Kuhnian "crisis" or "revolution," a significant paradigm shift has occurred over time in sport management. When we consider Kuhn's definition of the scientific community and received beliefs as the foundation of the scientific community, we need to evaluate sport management as a scientific community that includes an "educational initiation that prepares and licenses the student for professional practice" (Kuhn, 1962, p. 5). Furthermore, the scientific community's view of and assumptions about the world is defined as normal science, which is continuously sustained and perpetuated by the scientific community and received beliefs as part of a paradigm (Kuhn, 1962).

A paradigm is a basic framework of assumptions, principles, and methods from which the members of the community work. It is a set of norms which tell a scientist how to think and behave and although in science there are rival schools of thought there is still a single paradigm that all scientists accept uncritically (McLead, 2020, para. 4).

Sport management as a paradigm and specifically as the foundation to prepare and develop students for a career in the field has experienced a rudimentary realignment of assumptions, beliefs, and world view (Kuhn, 1962) Over time, the field has experienced and been exposed to several empirical anomalies, which do not align with the expected received beliefs, assumptions, and paradigm of the sport management academic and practitioner communities. The anomalies have not fostered a Kuhnian scientific revolution; however, sport management as an academic field has been forced to adapt and accept new assumptions from what was once considered normal science over thirty years ago.

Anomalies as defined by Kuhn do not necessarily represent an academic or practitioner disaster in each field but may be considered corrective actions to reinforce and clarify the field's *normal science* and paradigm. However, anomalies may cause a *crisis*, which may undermine the basic foundation of the paradigm, but the anomalies must represent a degree of severeness to subvert the validity of the paradigm. Paradigms are not discarded due to the existence of anomalies, nor do they cause a scientific revolution (Kuhn, 1962). The following are *anomalies* that have had a significant impact on the field's *normal science* and forced a paradigm shift to better prepare and develop students for a career in sport management (Kuhn, 1962)

Business Schools: Traditionally, sport management degree programs have been based in physical education departments; however, over time sport management undergraduate and graduate programs have increasingly been housed in the school of business. This departmental shift has influenced a foundational curricular approach to sport management subject matter and preparing students for a career in the field (Zaharia et al., 2016).

Virtual Program Offerings: Technology and the internet have had a significant impact on sport management as an academic field, careers and as an industry. Online or virtual degree programs and courses are regular practice at the present time but would have been a foreign concept 30 years ago. Virtual degree program offerings have increased the accessibility to undergraduate and graduate degree programs.

Increased Demand for Career Alignment: Wohlfart et al. (2022) outline the struggles of sport management as an academic field to align competence-based curricula with the demands of occupations in the sports industry. Historically, there has been a distinct disconnect between sport management curricula and the occupational demands in the sport industry. The authors suggest, “The gap between SMHE [sport management higher education] and the sport industry may persist. Influenced by trends such as commercialization, internationalization, digitalization, and sustainability. SMHE needs to re-evaluate its curricula on a regular basis to remain relevant and legitimate” (Wohlfart et al., 2022, p. 173).

Esports Management: Esports Management is a relatively recent academic program offering as part of the traditional sport management curriculum. It is evident that there is a significant interest in eSports management as an academic field, credible career option for students in a thriving eSport management industry (Funk et al., 2018). Esports/gaming has become a recognized and accepted academic field of study, which includes opportunities for research and career preparation for practitioners in the industry (Funk et al., 2018).

It is evident that sport management has experienced a number of anomalies over the last 30 years that have had an impact on the sport management scientific community’s view of and assumptions about the world is defined as normal science. This includes a process to adapt to meet the learning needs of the students, preparing students for careers in the field and the sport management industry. Dane-Staples (2019) suggests that the landscape of higher education is evolving to closely align with what employers are seeking in new hires rather than value being placed in traditional learning objectives. As the new sport management paradigm has shifted to include a focus on assessment, content knowledge only comprises part of the required outcomes. Further, as the number of sport management programs grows globally, specific soft skills that are needed in the workforce are expected to be modeled in college classrooms. As a result, employers expect sport management program graduates to be able to successfully navigate complex working relationships, independently tackle complex tasks, and know how to self-pace in the professional setting.

The Impact of Technological Advancement on HBCU Sport Management Programs

The paradigm shift in the field of sport management is significant to educators because a major influence in these academic programs is placed on allowing students to apply theoretical content to realistic experiences in the professional realm (Sutton, 1989; Perry, 2017). This ideology can be challenging to maintain in a virtual learning environment. The shift in the method of course delivery, instruction, and curriculum have changed over time in the field of sport management. This can be attributed to the emphasis on career readiness in the sport management curriculum as well as the emergence of new learning technology in education. As a result, a growing number of educators have moved away from traditional lectures and seek to present course content in a manner that actively prepares students for jobs in the field. However, many HBCU sport management programs face challenges that hinder their ability to remain ahead of the technological curve. Some of the challenges that these institutions face include institutional, financial, and programmatic differences. According to Stowe and Crowley (2021), in 2020 54 sport management programs were accredited by the commission of sport management accreditation, (COSMA) none of which were from HBCUs.

How do educators best support learners that face student hardship issues within sport management courses and how do these institutions overcome financial disparities are critical questions that must be addressed as sport management programs evolve. Examples of some of the hardships experienced include access to devices and administering effective online

instruction despite the digital divide. The technological evolution in sport management has presented challenges in virtual learning to both instructors and students at HBCUs. Some of the major challenges associated with online learning include equal access to devices, stable Internet connection, and difficulties in maintaining student engagement in virtual classrooms. Equal access to devices can be described as all students not owning or having reliable access to computers, tablets, or other electronic devices that allow them to complete coursework in a virtual setting. This issue is essential as a number of students face financial challenges and other hardships that limit access to technology when compared to sport management programs at larger institutions.

Having a stable internet connection is regularly viewed as being a routine element at well-funded institutions. However, it is among the biggest challenges facing students that participate in virtual learning environments (Baker et al., 2020). Disruptions or interferences to the Internet connection for students both on and off campus is alarming. Further, an increase in the number of cyberattacks at institutions of higher education, especially HBCUs is concerning. Additional elements such as weather, location, and quality broadband access are addressed in the literature as factors that can impact the enrollment in distance learning courses (Grubestic, 2008; Prieger & Wei-Min, 2008; Skinner, 2019).

Additional common challenges considering the paradigm shift in sport management are maintaining student engagement and emphasizing career readiness in course curriculum. Strategies to improve in these areas include training faculty as trends emerge and providing incentives for students to take an active role in distance learning courses. Baker et al. (2020) suggest that developing an instructor's presence is essential in the virtual learning and has resulted in increased student affective learning, cognition, and motivation in learning. As sport management continues to focus on applied skills and incorporate various hands-on learning experiences, educators must be trained in how to include career readiness in the virtual realm.

The need for sport management programs to develop to best serve students is discussed in the literature. According to Ratten and Jones (2018), the sport industry is by nature entrepreneurial and has a tradition of introducing new innovations that transcend to other industries. The changing perception within educational settings regarding curriculum requirements reflect the need for increasing practical engagement by students. The belief that sport management programs should involve more business dimensions and entrepreneurship education is also trending in the field. It is recommended that HBCU sport management educators seek learning opportunities that support professional development through professional engagement. This approach helps to maintain the applied nature of the field as the sport management curriculum advances. The academic realm of sport management remaining aligned with the professional realm is essential in preparing students for careers in the industry. As more sport management courses include new technologies, employers are hosting virtual workshops, seminars, and virtual internship/learning experiences as a way of engaging with potential job candidates.

CONCLUSION

The evolution of sport management classrooms has created a unique circumstance for members of the HBCU learning environment. Many of these institutions that serve marginalized populations face difficulties while aiming to implement impactful instruction and teaching methods. The ongoing paradigm shift which includes advancements in technology in sport management curriculum, instructional method, and design has added to the disparities among institutions of higher education. Furthermore, sport management faculty members at many HBCUs experience limited resources when maintaining their various roles as educators. Hardships for both students related to economic, social, and institutional challenges remain prevalent in this environment. The recent global pandemic has impacted education and resulted in a shift from face-to-face instruction to a virtual format for many HBCUs. The recommendations of supporting HBCU sport management educators by providing training on new sport management learning resources and applications, aligning the academic curriculum with advancements in the profession, and emphasizing student engagement can be used to mitigate the problems experienced in sport management pedagogy today.

REFERENCES

- Alamar, B.C. (2013). *Sports Analytics—A guide for coaches, managers, and other decision makers*. Columbia University Press, West Sussex.
- Baker, L., Baker, Leonard, M., & Milosavljevic, B. (2020). The sudden switch to online teaching of an upper-level experimental physical chemistry course: Challenges and solutions. *Journal of Chemical Education*, 97(9), 3097-3101. <https://doi.org/10.1021/acs.jchemed.0c00776>
- Brown, C., Willett, J., Goldfine, R., & Goldfine, B. (2018). “Sport management internships: recommendations for improving upon experiential learning”, *Journal of Hospitality, Leisure, Sport & Tourism Education*, 22 (22), 75-81.
- COSMA. (2022). Accreditation principles. Retrieved from: https://www.cosmaweb.org/uploads/2/4/9/4/24949946/accreditation_principle_march_2022.pdf
- Dane-Staples, E. (2019) Assessing a two-pronged approach to active learning in sport sociology classrooms. *Sport Management Educational Journal*, 13, 11-22.
- Deluca, J.R., & Braunstein-Minkove, J.R. (2016). An Evaluation of Sport Management Student Preparedness: Recommendations for Adapting Curriculum to Meet Industry Needs. *Sport Management Education Journal*, 10, 1-12.
- Discover Data Science (2022). The guide to choosing a sports analytics degree. Retrieved from: <https://www.discoverdatascience.org/related-programs/sports-analytics/>
- Freeman, G., & Wohn, D. Y. (2017). eSports as an emerging research context at CHI: Diverse perspectives on definitions. Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA'17), 1601–1608. doi:10.1145/3027063.3053158

- Funk, D. C., Pizzo, A. D., & Baker, B. J. (2018). eSport management: Embracing eSport education and research opportunities. *Sport Management Review, 21* (1), 7–13.
- Grubestic, T. H. (2008). The spatial distribution of broadband providers in the United States: 1999–2004. *Telecommunications Policy, 32*(3–4), 212–233.
- Jenny, S., Gawrysiak, J., & Besombes, N. (2021). Esports.edu: An Inventory and Analysis of Global Higher Education Esports Academic Programming and Curricula. *International Journal of Esports, 1*(1). Retrieved from <https://www.ijesports.org/article/59/html>
- Jones, D.F., Brooks, D., & Mak, J. (2008). Examining sport management programs in the United States. *Sport Management Review, 11*, 77-91.
- McLeod, S. (2020). *Thomas Kuhn - Science as a paradigm*. SimplyPsychology. <https://www.simplypsychology.org/Kuhn-Paradigm.html>
- NASSM. (2022). About us. Retrieved from: <https://nassm.org/about>
- Pannekeet, J. (2019). *Global esports economy will top \$1 billion for the first time in 2019*. Newzoo Insights. Accessed in February, 2019 from <https://newzoo.com/insights/articles/newzoo-global-esports-economy-will-top-1-billion-for-the-first-time-in-2019/>.
- Parkhouse, B.L. (1987). Sport Management Curricula: Current Status and Design Implications for Future Development. *Journal of Sport Management, 1*, 93-115.
- Patel D, Shah D., & Shah, M. (2020). The intertwine of brain and body: a quantitative analysis on how big data influences the system of sports. *Ann Data Sci*. <https://doi.org/10.1007/s40745-019-00239-y>
- Perry, J. (2017). A case study examining a sport and recreation management internship program at a historically black university [Doctoral dissertation. Drexel University] Proquest.
- Prieger, J. E., & Wei-Min, H. (2008). The broadband digital divide and the nexus of race, competition, and quality. *Information Economics and Policy, 20*(2), 150–167.
- Ratten, V. & Jones, P. (2018). Future research directions for sport education: Toward an entrepreneurial learning approach. *Education + Training, 60*(5): 490-499.
- Sattler, L.A. (2018). From classroom to courtside: an examination of experiential learning practices of sport management faculty. *Journal of Hospitality, Leisure, Sport and Tourism Education, 22*, 52-62.
- Schwab, K., Dustin, D., Legg, E., Timmerman, D., Wells, M., & Banning, S. (2013). Choosing sport management as a college major. *Scholar: A Journal of Leisure Studies and Recreation Education, 28*(2), 16–27.
- Skinner, B. (2019). Making the connection: Broadband access and online course enrollment

at public open admissions institutions. *Research in Higher Education*, 60(7), 960–999. <https://doi.org/10.1007/s11162-018-9539-6>

Skinner, J., & Gilbert, K. (2007). Sport Management Education: Teaching and Learning for the Future. *Sport Management Review*, 10(2), 125-131, DOI: [10.1016/S1441-3523\(07\)70007-4](https://doi.org/10.1016/S1441-3523(07)70007-4)

Sport Management Programs. (2022). *Sport Business Journal*. Retrieved from: <https://www.sportsbusinessjournal.com/College-University/Sports-Management-Programs.aspx>

Stowe, R., & Crowley, C. (2021, February 8-12). Perception of sport management faculty and administrators on accreditation at HBCUs [Conference presentation]. 2021 Commission on Sport management Accreditation Conference, Virtual. <https://www.cosmaweb.org/cosma2021presentations.html>

Sutton, W. A. (1989). The role of internships in sport management curricula- A model for development. *Journal of Physical Education, Recreation & Dance*, 60(7), 20.

Willett, J., Brown, C., & Danzy-Bussell, L. A. (2019). An exploratory study: Faculty perceptions of online learning in undergraduate sport management programs. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 25, 100206. <https://doi.org/10.1016/j.jhlste.2019.100206>

Willett, J., Brown, C., & Goldfine, B. (2017). An Examination of Sport Management Master's Programs in the United States. *Sport Journal*.

Wohlfart, O., Adam, S., & Hovemann, G. (2022). Aligning competence-oriented qualifications in sport management higher education with industry requirements: An importance–performance analysis. *Industry and Higher Education*, 36(2), 163–176. <https://doi.org/10.1177/09504222211016284>

Zaharia, N., Kaburakis, A., & Pierce, D. (2016). U.S. sport management programs in business schools: Trends and key issues. *Sport Management Education Journal*, 10(1), 13- 28.

Zieff, S.G., Lumpkin, A., Guedes, C., & Terry Eguaaje, T. (2009). NASPE Sets the Standard, *Journal of Physical Education, Recreation & Dance*, 80(8), 46-49, DOI: 10.1080/07303084.2009.10598378

Ziegler, E. (1987). Sport Management: Past, present, future. *Journal of Sport Management*, 1(1), 4-24.