

# Student-Athlete Development and Winning Success: An Analysis of Directors' Cup Standings

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The success of an athletic program is often defined by wins and losses. According to the sporting success framework (De Bosscher et al., 2006) as well as the athlete development literacy (ADL) model (Livengood et al., 2015), athlete development contributes to athletic achievement. The purpose of this study is to investigate the relationship between athlete development personnel resources and winning success at NCAA Division I institutions. A total of 150 universities were included in this study. Utilizing the ADL model (Livengood et al., 2015) of personal and player development literacies, athletic department personnel selected for this study included academic advisors, athletic trainers, doctors, learning specialists, nutritionists, mental health professionals, physical therapists, sport psychologists, and strength and conditioning coaches. Winning success was measured using the final 2017-18 Learfield IMG Directors' Cup standings (Directors' Cup, 2019). The results suggest that athletic trainers, learning specialists, and sport psychologists significantly contributed to winning success. As such, athletic departments should appropriately invest in athlete development specialists.

Keywords: athletic trainers, college athletics, NCAA, learning specialists, sport psychologists, winning

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## Introduction

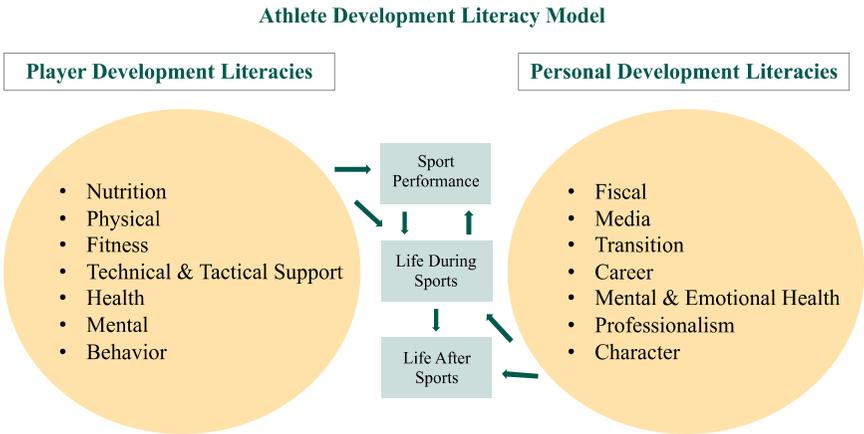
The success of an intercollegiate athletic program encompasses four components: educational, ethical, financial, and winning (Smart & Wolfe, 2000). However, the prestige of an institution of higher learning often relies on the athletic achievements accomplished by the sport programs and not the accomplishments within the classroom (e.g., Humphreys & Mondello, 2007; Won & Chelladurai, 2016). Studies have determined a winning intercollegiate athletic program increases student admission applications (e.g., Anderson, 2017; Pope & Pope, 2009, 2014) and financial donations (Anderson, 2017; Humphreys & Mondello, 2007). Athletic success has also been shown to improve an institution's *U.S. News & World Report* college ranking (Mulholland, Tomic, & Sholander, 2014). As a result, winning has become the priority, particularly for National College Athletic Association (NCAA) Division I membership institutions. The winning obsession in intercollegiate sport has initiated institutions to build lavish athletic facilities to attract recruits (e.g., Fort, 2016; Huml, Pifer, Towle, & Rode, 2019) and has prompted NCAA Division I institutions to pay coaches high salaries (particularly in football and men's basketball) in an attempt to secure a winning program (Brewer, McEvoy, & Popp, 2015; Wilson, 2017). Winning has become the top priority due to the perceived notoriety athletic success can bring institutions of higher learning.

Athletic departments' desire to achieve athletic success has often come at the expense of student-athlete well-being (e.g., Staurowsky & Ridpath, 2005). According to Brown, Hainline, Kroshus, and Wilfert (2014), nearly half (48%) of female student-athletes and 31% of male student-athletes demonstrate indications of anxiety and depression. As student-athletes experience additional stressors (e.g., role identity, injury, time demands, transition) when compared to their non-athlete peers (e.g., Broughton & Neyer, 2001; Killeya-Jones, 2005; Nippert & Smith, 2008; Stokowski, Paule-Koba, & Kaunert, 2019), mental health concerns appear more frequently among the student-athlete population (e.g., Bird, Chow, Meir, & Freeman, 2018; Cox, Ross-Stewart, & Foltz, 2017; Miller, Miller, Verhegge, Linville, & Pumariega, 2002). Although the NCAA (2016) provides member institutions with mental health best practices, due to the stigma of mental health as well as the lack of awareness surrounding mental health services, student-athletes are less likely to exhibit help-seeking behaviors (e.g., Wilkerson, Stokowski, Fridley, Dittmore, & Bell, 2020).

The environment influences "student-athletes' attitudes and perceptions of mental health and usage of mental health" (Haltermann, Steinfeldt, Ruser, Cawthra, & Neidigh, 2020, p. 40). Athlete development specialists (e.g., academic advisors, athletic trainers, coaches) have a profound influence on student-athletes' environments (Sudano, Collins, & Miles, 2017). Athlete development specialists

are crucial to student-athletes’ well-being and individual growth; in turn, athlete development specialists can contribute to athletic success. The present study is the first to utilize the athlete development literacy (ADL) model (see Figure 1) as a foundation to achieve athletic success and ultimately influence the environment (Livengood, Hilliard, Martin, Darvin, & Sagas, 2015).

De Bosscher, De Knop, Von Bottenburg, and Shibli (2006) developed a framework of factors that determine sporting success. These factors are categorized into three levels. The first level, macro-level, refers to “the social and cultural context in which people live” (De Bosscher et al., 2006, p. 186). The second level, meso-level, is indicative of “sports policies and politics” (De Bosscher et al., 2006, p. 187). The present study examines the third factor, the micro-level, which involves “individual athletes” and “their close environment” (De Bosscher et al., 2006, p. 187). Theoretically, within the micro-level is the ADL model, consisting of personal as well as professional development literacies that “facilitates an athlete’s ability to leverage resources” to achieve optimum athletic performance and “experience overall well-being” (Livengood et al., 2015, para. 2). It is within the micro-level guided by the ADL model that athletes have the opportunity to develop; athlete development resources are crucial to athletic achievement and ultimately winning success (De Bosscher et al., 2006; Livengood et al., 2015).



**Figure 1. Athletic development literacy (ADL) model.**

Modified from Livengood, T., Hilliard, J., Martin, K., Darvin, L. & Sagas, M. (2015). What is athlete development literacy? Retrieved from <http://laadr.hhp.ufl.edu/wp-content/uploads/what-is-athlete-development.pdf>

Past studies have demonstrated the important roles that coaches, faculty, parents, academic advisors, and peers have in athlete development (e.g., Bell, 2009; Paule-Koba & Farr, 2013; Paule-Koba & Tashenberg, 2018; Steinberg et al., 2018; Stokowski, Rode, & Hardin, 2016; Sudano et al., 2017; Won & Chelladurai, 2016). However, academic inquiry regarding athletic success and human resources is limited. Omondi-Ochieng's (2018) study looked at resources (e.g., human, organization, physical) and team competitiveness among collegiate football programs. The results of the study revealed that coaching experience, revenue, and attendance all served as competitive advantages (Omondi-Ochieng, 2018). Similarly, Won and Chelladurai (2016) investigated competitive advantages at Division I member institutions in terms of intangible and tangible resources. The results indicated that intangible resources (e.g., academic and athletic reputation) contributed to financial resources and athletic performance (Won & Chelladurai, 2016).

The purpose of this study was to investigate the relationship between athlete development personnel resources and winning success at NCAA Division I membership institutions. This study is the first to utilize the ADL model (Livengood et al., 2015) to help predict athletic success. Given that winning is the priority, and according to the sporting success framework (De Bosscher et al., 2006) as well as the ADL model (Livengood et al., 2015), athlete development contributes to athletic achievement. Therefore, this study can also inform athletic administration and emerging leaders in intercollegiate athletics of strategic priorities that may best support them in their institutional mission.

## Method

Utilizing the ADL model (Livengood et al., 2015) of personal and player development literacies, athletic department personnel selected for this study (considered variables) included academic advisors, athletic trainers, doctors, learning specialists, nutritionists, mental health professionals (e.g., counselors, social workers, mental performance coaches), physical therapists, sport psychologists, and strength and conditioning coaches. Athlete development personnel information from the top 150 institutions in the final 2017-18 Learfield IMG Directors' Cup (Directors' Cup, 2019) standings were collected from athletic department websites using staff directories.

Winning success was measured by a university's standing (final points) in the 2018 Directors' Cup (Learfield IMG, 2019). The Directors' Cup is "a program that honors institutions maintaining a broad-based program, achieving success in many sports, both men's and women's" (Learfield IMG, 2019, para. 1). The program began in 1993-94, and the award is presented to the institution with the highest number of points in its respective classification (e.g., Division I, II, III, NAIA). At the Division I level, the award counts 19 sports and must include baseball, men's

and women's basketball, and women's volleyball (Learfield IMG, 2019). Points are awarded based on an institution's athletic teams' final rankings at NCAA Championship events. This metric was chosen because it allowed for an analysis of the athletic success within the athletic department as a whole.

## Data Analysis

A hierarchical regression analysis was chosen because researchers can control for revenue generated by each athletic department when attempting to determine the degree to which athletic department personnel are predictive of winning (i.e., final points). This is important because the size of an athletic department's budget may create resource opportunities that outweigh the influence of various athletic department personnel. The 2017-18 financial information (i.e., revenue) from each of the 150 institutions analyzed in this study was compiled from *USA Today* (n.d.) data. The regression analysis was thus conducted in two blocks. In the first block, revenue was entered as the only predictor variable and final points as the dependent variable. In the second block, athletic department personnel (i.e., the number of academic advisors, athletic trainers, doctors, learning specialists, nutritionists, mental health professionals, physical therapists, sport psychologists, and strength and conditioning coaches) were entered as the predictor variables and final points as the dependent variable.

The data were also analyzed to ensure the obtainment of key statistical assumptions for multiple regression. First, the assumption of linearity between predictor variables and the dependent variable was met by examining their correlations. All predictor variables were positively correlated with final points (dependent variable), the majority having moderate to high correlations (see Table 1 for correlations between significant predictor variables and final points). Second, overall, a histogram of the residuals and a normal probability plot elicited a normal distribution of the residuals. Third, the variance inflation factor was well below 10, suggesting that multicollinearity among the independent variables was not a factor.

## Results

Descriptive statistics including the means, standard deviations, and bivariate correlations are provided in Table 1. Results from the hierarchical regression analysis showed that while revenue was a significant predictor of winning (final points) ( $R^2 = .52$ ,  $F(1,144) = 158.667$ ,  $p < .05$ ), athletic department personnel added to the prediction of winning on a statistically significant level ( $R^2 = .66$ ,  $F(9,135) = 6.173$ ,  $p < .05$ ). Put another way, athletic department personnel explained an additional 14% of the variance in the dependent variable (final

points) (see Table 2). Specifically, three personnel variables were statistically significant predictors: athletic trainers ( $\beta = .26, p < .05$ ), learning specialists ( $\beta = .18, p < .05$ ), and sport psychologists ( $\beta = .13, p < .05$ ) (see Table 3). These results suggest that athletic trainers, learning specialists, and sport psychologists contribute the strongest among other staff members to the winning success of Division I athletic departments. The relationship between these three staffing variables and winning (final points) can also be seen by viewing the bivariate correlations in Table 1.

**Table 1. Means, Standard Deviations, and Correlations for Significant Predictors**

Variable	<i>M</i>	<i>SD</i>	<i>N</i>	1	2	3	4	5
1. Final Points	419.3	316.56	146	-	.48**	.56**	.61**	.72**
2. Sport Psychologists	.55	.95	146	.48**	-	.30**	.37**	.42**
3. Learning Specialist	1.51	1.95	146	.56**	.30**	-	.38**	.54**
4. Athletic Trainers	10.16	4.71	146	.61**	.37**	.38**	-	.47**
5. Revenue	69.76	58.15	146	.72**	.42**	.54**	.47**	-

\* $p < .05$  level (1-tailed).

**Table 2. Amount of *R* Square Change in Hierarchical Regression Analysis**

Model	<i>R</i>	<i>R</i> Square	<i>R</i> Square Change	Sig. <i>F</i> Change
1 (Revenue)	.72	.52	.52	.000
2 (Athletic Department Personnel)	.81	.66	.14	.000

Model 1 includes revenue as only predictor variable. Model 2 includes sport psychologists, learning specialist, athletic trainers, doctors, mental health professionals, physical therapists, strength coaches, nutritionists, academic advisors, and revenue. Dependent variable: final points. Statistical significance at  $p < .05$ .

**Table 3. Statistically Significant Predictors of Winning from Hierarchical Regression Analysis**

Model	$\beta$	<i>t</i>	Sig.
Constant	-7.893	-2.09	.83
Revenue	.41*	5.79	.000
Athletic Trainers	.26*	3.97	.000
Learning Specialists	.18*	2.52	.013
Sport Psychologists	.13*	2.24	.026

\* $p < .05$  level.

Note. Dependent variable = final points.

In addition to the regression analysis, the descriptive statistics reveal that, on average, schools have significantly more athletic trainers ( $M = 10.16$ ,  $SD = 4.71$ ) than sport psychologists ( $M = .55$ ,  $SD = .95$ ) or learning specialists ( $M = 1.51$ ,  $SD = 1.95$ ). In fact, from a frequency distribution analysis, 66% of the universities and colleges do not have a sport psychologist on staff. Similarly, 45% of schools do not have a learning specialist. Conversely, only 2% of the schools are without an athletic trainer.

## Discussion

The purpose of this study was to investigate the relationship between athlete development personnel resources and winning success at NCAA Division I membership institutions. The results indicated that athletic trainers, learning specialists, and sport psychologists significantly contributed to winning success. Other variables (academic advisors, doctors, nutritionists, mental health professionals, physical therapists, strength and conditioning coaches) did not produce significant findings in the present study. If athletic departments want to win, resources should be devoted to hiring effective athlete development personnel.

### Athletic Trainers

Athletic trainers are “health care professionals who render service or treatment, under the direction of or in collaboration with a physician, in accordance with their education and training and the states’ statutes, rules and regulations” (NATA, 2019, para 3). As a member of the athletic training staff, these professionals assist with “injury and illness prevention, wellness promotion and education, emergent care, examination and clinical diagnosis, therapeutic intervention, and rehabilitation of injuries and medical conditions” (NATA, 2019, para 3).

Hootman, Dick, and Agel (2007) summarized 16 years of NCAA data for 15 sports. The data illustrated that having an athletic trainer on site during athletic contests and practices is crucial to get athletes the best care quickly if an injury occurs (Hootman et al., 2007). In addition to injury prevention and treatment, there are additional benefits associated with having an athletic trainer on staff. Primarily, the athletic trainer is able to convey all necessary medical information about the athlete to the coaching staff and can work with other members of the medical team to ensure a focused plan to return the athlete to health is being executed (Hayden & Lynch, 2011). In the present study, nearly every institution in the current sample employed an athletic trainer. However, due to the impact athletic trainers have on athletic success, athletic departments should continue to provide and even increase resources dedicated to athletic training.

## Learning Specialists

Given the increase of academically at-risk student-athletes competing at NCAA member institutions, the number of learning specialists to aid this population has grown considerably (e.g., Steinberg et al., 2018). Learning specialists assist in meeting the educational needs of student-athletes (Steinberg et al., 2018). Steinberg et al. (2018) found that learning specialists work with “individual student-athletes on learning strategies” and “conduct academic skills workshops with student-athletes” (p. 89). Research (e.g., Steinberg et al., 2018; Stokowski, Dittmore, Stein, & Li, 2016) has demonstrated that directed study or meeting with a learning specialist contributes to successful long-term educational outcomes. However, this study adds to the literature in that not only do learning specialists assist in enhancing student-athlete academic success (e.g., Steinberg et al., 2018; Stokowski et al., 2016), but learning specialists significantly contribute to winning success.

## Sport Psychologists

The present study identified an individual as a “sport psychologist” if the words “psychologist” or “psychology” were present in his or her position as listed on the staff directory. Given that “psychologist” is a protected term in the United States, it is plausible that these individuals attained a minimum educational standard affiliated with their title (e.g., doctor of philosophy, doctor of psychology). Further, some of these individuals may have additional training in sport or performance psychology or have earned their Certified Mental Performance Consultant certificate through the Association for Applied Sport Psychology. Portenga, Aoyagi, and Cohen (2017) believe that:

Sport psychology practitioners are uniquely trained and specialized to engage in a board range of activities including the identification, development, and execution of mental and emotional knowledge, skills, and abilities required for excellence in athletic domains; the understanding, assessment, and managing of the psychological, cognitive, emotional, behavioral, and psychophysiological inhibitors of consistent, excellent performance; and improvement of athletic context to facilitate more effective development, consistent execution, and positive experiences in athletes. (p. 52)

Additionally, a sport psychologist should “possess a fundamental comprehension of intrapersonal and interpersonal human functioning, and maintain culturally competent consulting skills” (Portenga et al., 2017, p. 56). Sport psychologists’ dynamic training positions allow them to assist student-athletes in reaching their highest potential, whether it be through sport performance enhancement, systems intervention, or enhancing individual mental health. The

ability to aid student-athlete development and influence or impact these domains enables sport psychologists to impact an athletic department's overall performance. Given the advancing role of sport psychologists in athletic departments, the NCAA's increased emphasis on mental health, and the educational background and training of these individuals, athletic departments and the NCAA should consider including sport psychologists as primary athletics healthcare providers, as they can influence both individuals and the sport organizational system as a whole.

## Limitations and Future Research

Limitations exist in this method of discovery. First and foremost, the researchers struggled with the best way to measure winning success. After all, how can the win/loss record of golf and swimming be compared to that of football and volleyball? As such, the researchers chose the Directors' Cup because it allowed for analysis of athletic success within the athletic department as a whole. Future work should employ other antecedents (e.g., recruiting class, scheduling, travel) to reveal if such influences do indeed impact winning success. It should also be noted that if a position was not specifically identified in the staff directory, it was not analyzed. Therefore, the present study is limited in that due to the method of data collection, the data failed to account for positions that may have been outsourced. This study also excluded graduate assistants because they are not full-time employees and are in their roles to learn and assist full-time staff members.

Further, the frequency distribution analysis in the present study revealed that 66% of Division I athletic departments did not employ a sport psychologist. Additionally, 45% of Division I institutions do not have a learning specialist. Unfortunately, statistical data in the present study was unable to provide the exact number of personnel needed in these positions. However, what the data did demonstrate is clear—every school should invest in athletic trainers, learning specialists, and sport psychologists.

Future research should survey student-athletes to determine what resources are being utilized and if this population feels such athlete development personnel resources are beneficial to student-athlete success. Further, future work should examine if student-athletes are even aware of the athlete development resources available. Such research would illuminate how student-athletes perceive and utilize the athlete development personnel they have at their disposal.

In this study, nearly every school employed athletic trainers; however, learning specialists and sport psychologists were not employed at every institution. More work is needed to better understand the role(s) of learning specialists and sport psychologists in regard to student-athlete success. Based on the data presented in the present study, both learning specialists and sport psychologists

can greatly benefit student-athletes; however, more work that demonstrates the integral nature of these staff members to the student-athlete's development and growth both on and off the field of play is warranted.

This study also revealed the need for future work to be done in the area of athlete development, specifically regarding the student-athlete population. This study is the first to utilize the ADL model (Livengood et al., 2015) to help predict athletic success. Future works could employ the use of this model to identify additional areas of athlete development that can be implemented in order to maximize the holistic benefits received by student-athletes. However, it should be noted that the field can benefit from additional models and theories that specifically speak to college athletes and athlete development. For example, the ADL model fails to address the one constant that is often forgotten among this sub-population of athletes—they are full-time college students. As such, future work should look at academic success and how success in the classroom may assist with success on the field of play.

## Practical Implications

The primary purpose of the NCAA is “to initiate, stimulate and improve intercollegiate athletics programs for student-athletes and to promote and develop educational leadership, physical fitness, athletic excellence and athletic participation” (NCAA, 20018, p. 1). Furthermore, “intercollegiate athletic programs shall be conducted in a manner that is designed to protect and enhance the physical and educational well-being of student-athletes” (NCAA, 2018, p. 3). Athletic organizations are investing in infrastructure (e.g., Fort, 2016; Huml et al., 2019) and coaches' salaries (Brewer et al., 2015; Wilson, 2017); however, such practices are not fulfilling the purpose of intercollegiate sport nor enhancing student-athlete well-being. Ultimately, the results of this study demonstrate athletic departments should further invest in athlete development personnel to achieve athletic success. This investment would also align with institutional priorities, namely, providing care for student-athletes and improving their odds of success on the field, leading to greater revenue generation.

The micro-level of the sport success framework (De Bosscher et al., 2006) recognizes that the environment is crucial to athletic success. Furthermore, the ADL model (Livengood et al., 2015) insists that athletes must have access to and effectively use resources in order to obtain optimal athletic performance. The present study demonstrates that access to human resources such as athletic trainers, learning specialists, and sport psychologists can assist in athletic achievement. Not only can such personnel assist with success on the field, but those in these positions (especially learning specialists and sport psychologists) can assist in holistic student-athlete development.

The number and role of sport psychologists within athletic departments has increased. Additionally, given the educational background and training of sport psychologists, athletic departments and the NCAA should consider including sport psychologists as primary athletics healthcare providers. These sport psychologists can influence both individuals and the sport organizational system as a whole and, as such, should be designated as primary healthcare providers of the athletes they serve.

Lastly, the results of this study do not infer that other athlete development personnel (e.g., nutritionists, academic advisors, social workers) are not important. As noted in the ADL model (Livengood et al., 2015), athlete development consists of player and personal development literacies that collectively contribute to athletic achievement. Ultimately, the data in this present study revealed that investing in athlete development personnel resources does in fact contribute to winning success. As such, athletic departments that place resources in athlete development can expect to achieve success on the playing field.

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