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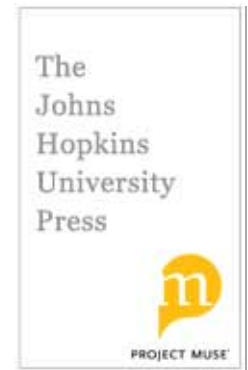
The Factor Structure and Reliability of the Student Athletes' Motivation toward Sports and Academics Questionnaire (SAMSAQ)

Joy L. Gaston-Gayles

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The Factor Structure and Reliability of the Student Athletes' Motivation toward Sports and Academics Questionnaire (SAMSAQ)

Joy L. Gaston-Gayles

Predicting the academic performance of college athletes has been a topic of interest in the literature over the past few decades. Of particular importance to college administrators, the media, and the National Collegiate Athletic Association (NCAA) is the rate at which college athletes graduate and make progress toward degree completion, as well as identifying what factors are related to and predict academic performance. Standardized test scores and high school grades are the most commonly used variables to predict academic performance in college and are used by the NCAA to determine initial eligibility to compete in college sports; however, these variables do not accurately predict academic performance for all groups of students (Tracey & Sedlacek, 1985). Bowen and Levin (2003) suggested that academic performance "depends on interests, motivation, time management skills, creativity, and other late-developing qualities that no battery of tests captures well" (p. 117). For the purpose of this study, I sought to examine motivation as a nontraditional measure through the development of a scale to assess academic and athletic motivation.

A number of early studies examined the usefulness of traditional variables (e.g., standardized test scores, high school grades, high school class rank, etc.) in predicting future academic performance. The weight of the evidence suggests that African American male athletes who participate in revenue producing sports enter college underprepared (Purdy, Eitzen, & Hufnagel, 1985; Sellers, 1992) and are less likely to achieve academic success compared to their athlete and nonathlete peers (Ervin, Saunders, Gillis, & Hogrebe, 1985; Purdy et al.). Other studies have focused on the predictability of nontraditional measures of academic success, particularly with regard to nontraditional populations (Tracey & Sedlacek, 1984, 1985). These studies focused on what factors, besides standardized test score, high school grades, and high school rank are related to academic performance. Tracey and Sedlacek (1984) introduced the Noncognitive Questionnaire (NCQ) to measure seven noncognitive variables and their influence on academic performance. In a follow-up study using the NCQ the authors found that noncognitive variables, in addition to SAT score, accounted for a greater portion of the explained variance in academic performance than just SAT score alone. They also found that predictors of academic performance vary in kind and over time for African American and White college students (Tracey & Sedlacek, 1985).

Student athletes are considered a nontraditional population of college students and

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several studies have examined the predictability of noncognitive variables for this population (Petrie & Stoever, 1997; Sedlacek & Adams-Gaston, 1992; Young & Sowa, 1992). Sedlacek and Adams-Gaston found that SAT score did not predict first semester grades for freshmen athletes at a Division I school. Rather, noncognitive variables, particularly having individual and community support, and a positive self-concept, were most meaningful in predicting academic performance. Moreover, the authors suggested that SAT score should not be used solely to predict future academic performance.

Studies examining the predictability of noncognitive variables for student athletes have also been done by race and gender. Young and Sowa (1992) found that traditional variables alone did not predict academic performance for African American athletes. In fact, only high school grades were related to academic performance for African American athletes. Moreover, the authors found goal setting, understanding racism, and community service to be significant predictors of academic performance for this population. Concerning female athletes, Petrie and Stoever (1997) found that the amount of variance in grades explained by SAT score decreased as the women matriculated through college, and that other factors came into play the longer women remained in school. The authors suggested examining other noncognitive variables that have the potential to predict academic performance.

Only a few studies have examined motivation in relation to academic performance. In 1988, the Center for the Study of Athletics found that athletes who aspired to play at the professional level also had a high desire to earn a college degree. In a study that examined predictors of academic performance for African American and White student athletes,

Sellers (1992) included two motivation items in the analysis: (a) number of hours spent studying, and (b) desire to earn a college degree. The results of the study indicated no difference between African American and White athletes on either of the motivation factors. Moreover, Sellers concluded that although African American athletes entered college less prepared, they were not automatically less motivated as a result. Snyder (1996) studied the academic and athletic motivation of male athletes at Division I and Division III institutions by having participants respond to "situations in which they had more or less academically versus athletically inclined alternatives available" (p. 658). The findings indicated that at Division I institutions, African American athletes responded more favorably toward the desire to play at the professional level than White athletes; however, at Division III institutions where there is little influence of professionalism associated with athletics, there was not a significant difference in motivation between African American and White athletes. These results suggest that the professionalism associated with the institution may have an impact on motivation.

Only one study to date has studied motivation from a theoretical perspective. According to Simons, Van Rheenen, and Covington (1999), student athletes experience uneven levels of academic and athletic motivation. "Most [athletes] are highly motivated to succeed in the athletic domain . . . However, many of the most visible student athletes seem to lack motivation in the classroom" (p. 151). Using self-worth theory as a conceptual framework, the authors studied academic motivation of student athletes using a combination of several scales. The findings from this study indicated that failure-avoiders (those motivated to avoid failure but

unmotivated to strive for success) and failure-acceptors (those unmotivated to avoid failure and strive for success) were more committed to the athletic role than success-oriented athletes (those motivated to strive for success) and overstrivers (those motivated to strive for success and avoid failure). The authors also found that athletic commitment was negatively related to college grades. Additionally, males had a larger percentage of failure-avoiders than females, revenue athletes had a larger percentage of both failure-avoiders and failure-acceptors and fewer success oriented athletes than nonathletes, and African Americans had a larger percentage of failure-avoiders and fewer success-oriented athletes than non-African American athletes.

CONCEPTUAL FRAMEWORK

To expand on the use of motivation theories in measuring academic and athletic motivation, this study used an expectancy-value framework to inform the development of the Student Athletes' Motivation toward Sports and Academics Questionnaire (SAMSAQ). Motivation has been defined as the intensity and direction of behavior (Silva & Weinberg, 1984). Intensity refers to how much effort an individual applies to a given task, whereas direction indicates the choice to complete or not to complete a given task. Hence, motivation signifies an individual's choice of and effort applied toward a task. Student athletes choose both to participate in their sport and attend college. However, the amount of effort or intensity they apply to academic and athletic tasks may vary.

Achievement motivation theories, particularly the expectancy-value model, were used to construct the items on the SAMSAQ. A basic assumption of achievement motivation theory is that motivation toward a given task

can be determined by an individual's choice of, persistence on, and amount of effort applied to a task (Weiner, 1984). Related to this definition, individuals who are highly motivated to approach success tend to apply a great deal of effort and time toward successful completion of a chosen task.

Expectancy-value theory is a function of two major components: (a) the probability that an individual will successfully complete a task, and (b) the value associated with successful completion of the task (Spence & Helmreich, 1983). Moreover, Eccles (1983) postulates that expectancy, or the probability of success, is influenced by individuals' self-concept about their ability to successfully complete a task and the level of difficulty associated with completing the task. The value attached to a task is a function of the extent to which the task fulfills a need, aids in current goal attainment, and is important in fulfilling a future goal. For the purpose of this study, expectancy-value was also informed by two additional personal belief theories, self-efficacy (Bandura, 1986) and attribution (Weiner, 1984). Each theory is briefly explained below in relation to its application in measuring academic and athletic motivation.

The basic assumption underlying self-efficacy theory is that individuals make judgments about their ability to successfully complete a task (Bandura, 1977). Based on this information, individuals tend to avoid tasks that they believe they cannot complete successfully, but become engaged in tasks they believe they can complete successfully. To that end, student athletes who believe that they can excel in their sport are willing to approach the task, or put forth effort to succeed; however, student athletes who may have trouble in math are not likely to approach but avoid math related assignments.

The basic assumption of attribution theory

(Weiner, 1984) is that individuals search for causal explanations for behavioral outcomes to use as a basis for deciding whether to approach success or avoid failure on future tasks. Graham (1991) suggested that individuals especially seek explanations for negative or unexpected outcomes. The most common causal attributes in the achievement domain are ability, effort, task difficulty, luck, and help from others. Moreover, these causal attributes elicit emotional responses that influence future behavior.

The purpose of this study was to develop an instrument to measure student athletes' motivation toward sports and academics using an expectancy-value framework. Two major research objectives guided this study: to determine the (a) factor structure and (b) reliability of the Student Athletes' Motivation toward Sports and Academics Questionnaire.

METHOD

Participants

The sample for this study included 236 student athletes who participated in eight varsity sports at a Division I university in the Midwest. The eight sports in this study included football, men's and women's basketball, men's volleyball, men's and women's lacrosse, women's field hockey, and softball. The racial composition of the sample was 70% White and 30% non-White. The sample represented about 10% fewer White student athletes and about 10% more non-White student athletes than indicated on the athletic team rosters at the institution. A large percentage of ethnic minorities were present in this sample due to the high numbers of ethnic minorities who participate in football and men's basketball, which account for 44% of the sample. Participants were 33% female and 67% male, which is slightly more males and fewer females than the team roster, as well

as across NCAA Division I institutions (NCAA, 2003). The sample represents a six to nine percent difference in the representation of males and females across NCAA Division I institutions and team rosters, respectively.

About 39% of the participants received a full athletic scholarship, 31% received a partial athletic scholarship, and about 29% received no athletic scholarship. Participants ranged across years of eligibility remaining. Nine percent reported four years remaining, 32% reported three years remaining, 25% reported two years remaining, 18% reported one year remaining, and 16% reported zero years remaining.

Instrumentation

The SAMSAQ was created to measure academic and athletic motivation of college athletes (Gaston, 2002). The items were constructed from the basic principles and assumptions of expectancy-value, self-efficacy, and attribution theories. The initial scale consisted of 30 items that examined the extent to which athletes were motivated toward academic and athletic related tasks (see full scale in the appendix). The scale consisted of 15 items intended to measure academic motivation and 15 items intended to measure athletic motivation. Participants were asked to indicate their level of agreement with each statement measured on a six-point Likert-type scale, ranging from *very strongly agree* (6) to *very strongly disagree* (1). Demographic information was also collected as a part of the SAMSAQ. The demographic questions assessed type of sport, gender, scholarship status, parent(s) level of education, age, and race/ethnicity. The demographic questions were included at the end of the scale.

Procedure

The SAMSAQ was administered to student athletes during separate academic team

meetings for each of the eight sports. Before administering the survey, permission was obtained from the athletic director, director of academic support services, as well as the human subjects committee at the university. Participation was solicited from the entire squad list for each team on a voluntary basis. The total number of student athletes who completed the survey was 236, a response rate of 76%.

RESULTS

Exploratory factor analysis (EFA) and reliability estimates were conducted to confirm the underlying structure and internal consistency of the items on the scale. Comprehensive Exploratory Factor Analysis (CEFA) (Browne, Cudeck, Tateneni, & Mels, 1999) was used to conduct the analysis. This statistical program is unique because it produces a measure of model fit, as well as confidence intervals for model fit, standard errors for rotated factor loadings, and factor correlations.

Factor Extraction

In developing the SAMSAQ it was hypothesized that the scale would yield two factors, an academic motivation factor and an athletic motivation factor. To test this hypothesis, two, three, and four factor solutions were examined. Several criteria were used in determining the best fit of the model to the data: the eigenvalue rule, the scree test, RMSEA values, and interpretability according to the characteristics of the items loading on each factor. In general, there were a total of six eigenvalues greater than one; however, three eigenvalues accounted for the largest amount of variance. The scree test supported a three-factor model, although in examining the scree plot it was clear that there were two large factors that accounted for most of the explained variance. The RMSEA value

for the two-factor model was .094. This value was just shy of being unacceptable (i.e., a value e" 1) (Browne & Cudeck, 1992). The RMSEA 90% confidence interval for the two-factor model was (.088, .100), indicating that the factor structure would range from mediocre to poor over repeated samples.

Item-to-total correlations and Cronbach's alpha coefficients were examined to assess the internal consistency of the two subscales of the hypothesized model. Although the two-factor model was not the model of choice, these measures gave an indication of which items were problematic in the model. Three items were eliminated due to low item-to-total correlations, low reliability, and low factor loadings. The three-factor model consisted of 27 items instead of 30 items. Two items loaded high on two of the three factors, but the relationship was positive on one factor and negative on the other. These items were used in computing composite scores for both factors; however the scale was reversed for the factor on which the item had a negative factor loading so that higher numerical values indicated higher motivation scores.

The rotated three-factor solution after the three items were eliminated yielded an acceptable fit of the model to the data. The RMSEA value was .069 and the 90% confidence interval was (.061, .077), which was much more acceptable than the two-factor model (See Table 1). Moreover, the items that loaded on each factor had characteristics that were interpretable. Thus, the three-factor solution was the model of choice for this study.

Factor Interpretation

The items loading on each factor shared common characteristics that aided in naming the factors appropriately. The first factor was named student athletic motivation (SAM) and consisted of eight items. This subscale

TABLE 1.
Factor Loadings for Exploratory Factor Analysis and Reliability Estimates

	Factor			
	SAM	CAM	AM	Alpha
Item 2	.67	.08	.07	
Item 12	.75	-.01	.16	
Item 13	.59	.16	.01	
Item 14	.72	.05	.07	
Item 15	.75	.19	.10	
Item 25	.41	-.01	-.43	
Item 27	.67	.30	.15	.86
Item 17	-.30	.09	.38	
Item 8	.07	.66	-.17	
Item 9	.07	.56	.03	
Item 19	.12	.51	.10	
Item 20	.06	.81	-.11	
Item 22	.04	.91	-.01	.84
Item 1	.01	.14	.60	
Item 3	.07	.11	.70	
Item 4	.00	.15	.79	
Item 5	-.19	-.19	.54	
Item 7	.14	-.11	.43	
Item 10	.08	-.14	.48	
Item 11	.07	-.05	.55	
Item 17	-.30	.09	.38	
Item 18	.10	-.13	.42	
Item 21	-.01	.11	.48	
Item 23	.13	-.02	.54	
Item 25	.41	-.01	-.43	
Item 26	.05	-.05	.38	
Item 28	-.08	.09	.53	
Item 29	-.03	-.22	.58	
Item 30	.06	-.02	.47	.79

Note. Oblique Rotation. Maximum Likelihood Extraction (*n* = 236). RMSEA = .069, RMSEA 90% CI (.061, .077).

indicated the extent to which the participants were motivated to pursue their sport. The items reflected the type of motivation one would expect student athletes to have given the fact that they chose to compete at the collegiate level. The second factor was named career athletic motivation (CAM) and consisted of five items. This subscale was distinctly different from the SAM subscale in that the items reflected the desire to play sports at the professional/Olympic level. The third factor was named academic motivation (AM) and had a total of 16 items. The items on this subscale represented the extent to which the participants were motivated toward academic related tasks.

Reliability

Alpha coefficients were computed to measure the internal consistency of the items on each sub-scale. The reliability estimates for each sub-scale were acceptable. The alpha value for the student athletic motivation sub-scale (Factor 1) was .86. The alpha for the career athletic motivation sub-scale (Factor 2) was .84. The alpha for the academic motivation sub-scale (Factor 3) was .79.

Table 2 illustrates the mean and standard deviation for each of the three subscales by gender, race, and sport. Multivariate analysis of variance was used to examine main effects of race/ethnicity, gender, and sport on the three subscales across. The univariate analyses (all with *df* = 1, 235) showed that females had significantly higher academic motivation scores than males ($F = 8.08$, $p < .01$). Males had significantly higher student athletic motivation scores than females ($F = 16.64$, $p = .000$). Revenue athletes had higher scores on career athletic motivation than nonrevenue athletes ($F = 3.86$, $p < .05$). Non-White athletes had significantly higher career ath-

letic motivation scores than White athletes (F = 33.24, p = .000).

Further analysis included examination of the mean score and standard deviation relative to each group. On average, female athletes had higher academic motivation (M = 4.72, SD = .566) scores than any other group. Additionally, female athletes had the lowest score on the career athletic motivation (M = 3.44, SD = 1.09) and student athletic motivation (M = 4.48, SD = .693) subscales than any other group. Minority student athletes had one of the lowest academic motivation scores (M = 4.57, SD = .601), a few percentage points greater than only male athletes and revenue sport participants. Male student athletes had the highest student athletic motivation score (M = 4.83, SD = .621), followed by revenue sport participants (M = 4.78, SD = .639) and non-White athletes (M = 4.75, SD = .608). Several groups had lower academic motivation scores relative to their student athletic motivation scores. Male, White, non-White, revenue, and nonrevenue athletes all had higher student athletic motivation scores than academic motivation scores. Non-White athletes had a

higher career athletic motivation score (M = 4.70, SD = .972) relative to their academic motivation score (M = 4.57, SD = .601). Female athletes were the only group that exhibited a higher academic motivation score (M = 4.72, SD = .566) relative to both student athletic motivation (M = 4.48, SD = .693) and career athletic motivation (M = 3.44, SD = 1.09).

DISCUSSION

The purpose of this study was to construct a scale to measure academic and athletic motivation for student athletes using an expectancy-value theoretical framework. The results of this study support the use of expectancy-value as a framework for measuring academic and athletic motivation of college athletes, and add to the literature concerning the use of other motivation theories (e.g., self worth theory) that have been studied previously (Simons et al., 1999). The SAMSAQ showed good internal consistency in measuring three achievement motivation constructs: (a) academic motivation, (b) student athletic motivation, and (c) career athletic motivation.

TABLE 2.

Mean and Standard Deviation for Motivation Scores by Gender, Race, and Sport

Variable	CAM		SAM		AM	
	M	*SD*	*M*	*SD*	*M*	*SD*
Female	3.44	1.090	4.48	.693	4.72	.566
Male	4.14	1.160	4.83	.621	4.52	.622
White	3.57	1.110	4.69	.690	4.60	.615
Non-white	4.70	0.972	4.75	.608	4.57	.601
Non Revenue	3.53	1.030	4.66	.683	4.60	.572
Revenue	4.39	1.190	4.78	.639	4.56	.657

A major finding in this study was that the SAMSAQ measured three motivation constructs instead of two. In the original scale, there were 15 items designed to measure academic motivation and 15 items designed to measure athletic motivation; however the results of the factor analysis indicated that three constructs were being measured. The hypothesized athletic motivation sub-scale actually measured two distinct aspects: (a) a general desire to pursue athletic related tasks, and (b) the desire to pursue a professional career or an elite level of participation in sports. This finding was unexpected, but added a unique dimension to this study. It makes sense for the desire to pursue sports at the professional level to be separated out from the general desire to play sports by way of self-selecting to participate in a varsity sport. Moreover, these two aspects are important to distinguish between in order to better understand the academic and athletic experiences and expectations of college athletes.

The findings from this study have implications for athletic administrators in academic support programs, as well as other student affairs administrators who work with college athletes on a regular basis. Perhaps the most meaningful application of the scale might be as an assessment of students' motivation on the three subscales. In a study that examined the predictive validity of the SAMSAQ, the results indicated that Academic Motivation (AM) was a significant factor in predicting college grade point average (Gaston-Gayles, 2004). Therefore, identifying student athletes who score low on the academic motivation subscale and finding ways to increase academic motivation for these student athletes would be the most beneficial use of the scale at this stage of its development.

Examining the mean scores for each motivation subscale by gender, race, and sport gives the reader an illustration of how balanced or unbalanced student athletes were in reference to their level of academic and athletic motivation. Female athletes appeared to present the most balanced group of student athletes in this study. They had the highest academic motivation scores among all of the groups and their academic motivation scores were higher than their career athletic motivation and student athletic motivation scores. In other words, female athletes were more motivated toward academic related tasks than athletic related tasks.

To the contrary, non-White and revenue athletes exhibited the most unbalanced groups of student athletes in terms of academic and athletic motivation. Non-White athletes had higher career athletic motivation and student athletic motivation scores relative to their academic motivation score. Additionally, revenue sport participants had higher student athletic motivation scores relative to academic motivation. These findings represent a red flag for these two groups of student athletes in this particular study.

IMPLICATIONS

There are many ways that student affairs administrators, particularly academic advisors, can help student athletes increase their level of academic motivation. Motivated students are willing to put forth the time and effort to be successful in a given task domain. Currently, student athletes spend a great deal of their time and energy on athletic related tasks. Encouraging student athletes to become engaged in academic related tasks and out-of-class learning experiences will increase the amount of time and energy that student athletes spend on academic related tasks, thus stimulating the creation of a balance between academics and athletics.

The literature supports that female athletes have less difficulty balancing academic and athletic tasks, and therefore perform better academically than their male counterparts (Simons et al., 1999; Watt & Moore, 2001). This is likely because female athletes are more willing and able than other groups of athletes to transfer the skills that they use to be successful in the athletic domain, such as effort and time on task, to the academic domain, perhaps because there are fewer opportunities for females to play at the professional level (Simons et al.). A number of athletic academic support programs have academic learning specialists who should be involved in helping student athletes, particularly those deemed academically at risk, recognize and use transferable skills from the athletic domain to the academic domain.

Previous studies have found that student athletes who aspire to play at the professional level also have high aspirations to earn a college degree (Center for the Study of Athletics, 1988), and that African American and White athletes do not differ in terms of their desire to earn a college degree and time spent studying (Sellers, 1992). Although these athletes exhibited high academic aspirations, they may have been lacking academic self-confidence in their ability to succeed in academic related tasks. Lack of confidence in academic ability can deter even the most motivated student from approaching success. As such, academic advisors and learning specialists can help student athletes increase their confidence in academic related tasks by making better use of study table time. It may not be most effective to have athletes study together by teams or in large groups. Individualized study tables with fewer athletes at a time might be more appropriate. Additionally, student athletes who experience academic difficulty could benefit from programming that focuses on reducing test taking anxiety, effective note taking and study strategies, as well as other academic success skills that can be learned in an appropriate setting. As student athletes encounter positive experiences in the academic domain (e.g., positive interactions with faculty and peers, passing a quiz or exam) their academic confidence will likely increase as a result.

Along the same line, student athletes should be encouraged to take responsibility for their academic successes and failures. In the same way that athletes analyze a bad game by searching for antecedents for poor performance, they should search for causes for academic failures. Lack of effort, ineffective studying, and test anxiety should be discussed with students who experience academic failure to avoid reliance on self-disabling excuses and the continued development of poor academic self-concept. Academic mentors and other support staff can play an important role in helping student athletes work through their academic difficulties and ultimately change their behavior and locus of control as a result.

In summary, the findings from this study support that the SAMSAQ is a valid scale that measures three subscales of motivation. These three subscales have the potential to provide academic advisors with information about student athletes to help them develop a balance between academic and athletic tasks. More research needs to be conducted using the scale with other populations of student athletes to further validate its usefulness and determine how best the scale can be used to enhance academic performance.

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APPENDIX.
The SAMSAQ Items

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1. I am confident that I can achieve a high grade point average this year (3.0 or above).

2. Achieving a high level of performance in my sport is an important goal for me this year.

3. It is important for me to learn what is taught in my courses.

4. I am willing to put in the time to earn excellent grades in my courses.

5. The most important reason why I am in school is to play my sport.

6. The amount of work required in my courses interferes with my athletic goals.

7. I will be able to use what is taught in my courses in different aspects of my life outside of school.

8. I chose to play my sport because it is something that I am interested in as a career.

9. I have some doubt about my ability to be a star athlete on my team.

10. I chose (or will choose) my major because it is something I am interested in as a career.

11. Earning a high grade point average (3.0 or above) is not an important goal for me this year.

12. It is important to me to learn the skills and strategies taught by my coaches.

13. It is important for me to do better than other athletes in my sport.

14. The time I spend engaged in my sport is enjoyable to me.

15. It is worth the effort to be an exceptional athlete in my sport.

16. Participation in my sport interferes with my progress towards earning a college degree.

17. I get more satisfaction from earning an "A" in a course toward my major than winning a game in my sport.

18. During the years I compete in my sport, completing a college degree is not a goal for me.

19. I am confident that I can be a star performer on my team this year.

20. My goal is to make it to the professional level or the Olympics in my sport.

21. I have some doubt about my ability to earn high grades in some of my courses.

22. I am confident that I can make it to an elite level in my sport (Professional/Olympics).

23. I am confident that I can earn a college degree.

24. I will be able to use the skills I learn in my sport in other areas of my life outside of sports.

25. I get more satisfaction from winning a game in my sport than from getting an "A" in a course toward my major.

26. It is not important for me to perform better than other students in my courses.

27. I am willing to put in the time to be outstanding in my sport.

28. The content of most of my courses is interesting to me.

29. The most important reason why I am in school is to earn a degree.

30. It is not worth the effort to earn excellent grades in my courses.

Note. Copyright 2002 by Joy L. Gaston: May be used for research with permission. Each item is rated on a scale of 1 to 6 with 1 = *very strongly disagree*, 2 = *strongly disagree*, 3 = *disagree*, 4 = *agree*, 5 = *strongly agree*, and 6 = *very strongly agree*. The CAM subscale consists of items 8, 9, 19, 20, and 22. The SAM subscale consisted of items 2, 12, 13, 14, 15, 17, 25, and 27. The AM subscale items consisted of items 1, 3, 4, 5(reversed), 7, 10, 11, 17, 18, 21, 23, 25(reversed), 26, 28, 29, and 30.

Research in Brief

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