College Students and Academic Performance: A Case of Taking Control

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College students face a myriad of pressures and challenges in the academic environment as they seek to maintain optimal performance or even to remain in the academic program. In 2002, it was reported that more than 30% of first-year students did not return for their second year of college (Smith), and only 40% are reported to actually complete their degree and graduate (Newby, 2002). This information suggests that either due to problems with integration or other difficulties encountered in the social or academic culture of the institution, a significant proportion of college students fail to attain an acceptable level of academic achievement and ultimately withdraw (Pascarella & Terenzini, 1991). The better we understand the factors that contribute to academic success, the greater the potential for positive and timely intervention to

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improve the chances of undergraduates earning adequate grades and successfully completing their higher educational experience. One of the factors shown to correlate with a successful academic career is that of the student’s ability to delay gratification (Muraven, Baumeister, & Tice, 1999). This ability is contained in the personality trait of self-control. This study surveyed 304 undergraduates on a northeastern public college campus to address the question, “Do high academic performers differ from low academic performers in terms of their reported level of self-control?” The study found a significant difference between high and low academic performers in terms of their overall level of self-control, as well as significant differences in various other subdimensions of the self-control construct such as impulsivity, risk-seeking behavior, and a preference for physical activity.

From an educational policy perspective, one implication of our findings is to offer administrators better information on how self-control (or the lack thereof) manifests itself in college students. Programs aimed at improving students’ self-control, and ultimately academic performance, could focus on helping undergraduates recognize, monitor, and regulate their tendencies toward excessive risk seeking or physical activity, thereby balancing the challenges of self-discipline and self-regulation.

Investigating and better understanding the myriad factors that contribute to successful academic performance is a topic of recurring interest in higher education. College students face a number of pressures and challenges in the academic environment as they seek to maintain optimal academic performance. The American College of Testing reported some troubling statistics regarding freshman attrition; more than 30% of first-year students do not return for their second year of college (Smith, 2002). Further concern stems from the matriculation rates in the United States. Newby (Academic responsibilities and faculty expectations of students, 2002) contended that only 40% of students actually graduate. This information suggests that either due to problems with integration or other difficulties encountered in the social or academic culture of the institution, a significant proportion
of college students fail to attain an acceptable level of academic achievement and ultimately withdraw (Pascarella & Terenzini, 1991). The better we understand the factors that contribute to academic success, the greater our potential for positive and timely intervention to improve the chances of undergraduates earning adequate grades and successfully completing their higher educational experience.

A great deal of literature addresses reasons why students choose to leave the academy. This research is dominated by Tinto (1975, 1987), who identified the background issues that lead to a student’s departure from an institution or program. Key among them was the student’s level of academic and social integration into the institution of higher education. Additional issues that can impact student attrition rate include parents’ educational level, socioeconomic status of the family, race, the institution’s distance from home, and organizational factors of the institution (Bean & Metzner, 1985). Gatekeepers and the bureaucratic processes within the institutional environment can hinder students’ access to supportive services and as a result encourage withdrawal (Pascarella, 1984). In general, the goal of research on academic performance has been to identify those factors that can increase student retention and academic performance. Factors that have been correlated with successful academic performance include the student’s locus of control (Berry & Plecha, 1999; Simon & Eachus, 2000), the personal background of the student (Betts, 1999), self-esteem (Kalsner, 1992; Leonardi, Syngollitou, & Kiosseoglou, 1998), self-efficacy (Sandler, 2000), stress levels (Barling, 1999; Goldman, 1997), learning styles (Grigorenko & Sternberg, 1997), lifestyle activities (Cheung, 1998; Maloney, 1993), and the student’s ability to delay gratification (Muraven et al., 1999).

The ability to delay gratification has been identified as an outcome of one’s level of self-control (Strayhorn, 2002). Self-control is defined as an internal resource with the capacity to alter the self’s own states and responses—cognitive, emotional, or behavioral (Baumeister, 2002; Baumeister & Exline, 2000; Logue, 1995). The concept of self-control has been conceptualized in several different ways. Self-control has been identified as a personality trait, which is established early in childhood. Once developed, this trait remains fairly constant over one’s lifetime and is not affected by increased age (Baumeister, 2002; Grasmick, Tittle, Bursick, & Arneklev, 1993; Strayhorn, 2002). Self-
control has also been viewed as an internal resource with a fixed reserve, which is depleted over time (Baumeister & Exline, 2000; Muraven, Tice, & Baumeister, 1998). It is analogous to a muscle, fatigued in the short run, but strengthened with use over time (Muraven & Baumeister, 2000; Muraven et al., 1999; Strayhorn, 2002).

Regardless of the conceptualization of self-control, there is consensus on how it is defined. Self-control, or self-regulation, refers to an individual’s capacity to alter his or her own behavior (Baumeister, 2002). When the self is able to control behavior, the response usually results in some type of delayed gratification, leading to future goals or increased rewards such as in the completion of a college degree (Mischel, 1974; Strayhorn, 2002). Studies have found that among several variables, self-control was a robust predictor of a student’s level of academic success, measured by their GPA (Cantwell & Moore, 1996; Cattell & Butcher, 1968; Wolfe & Johnson, 1995). Wolfe and Johnson (1995) suggest that the construct of self-control should be used by college admissions offices in their selection process to better predict a student’s likelihood of success in the academy.

The antecedents to the development of self-control occur very early in childhood through the socialization process (Brannigan, Gemmell, Pevalin, & Wade, 2002; Gottfredson & Hirschi, 1990; Grasmick et al., 1993). Family social factors include the family structure, parental levels of hostility (Brannigan et al., 2002), parenting style (Arnekleiv, Grasmick, Tuttle, & Bursick, 1993), and methods of childhood socialization (Brannigan et al., 2002; Gottfredson & Hirschi, 1990). Low levels of self-control were found to result in families in which parents did not closely monitor their children’s behavior, did not recognize deviant behavior when it occurred, and did not punish the behavior if recognized (Arnekleiv et al., 1993; Gottfredson & Hirschi, 1990). These socialization antecedents have been studied primarily in the context of criminal behavior, where the concept and measurement of self-control was developed (Gottfredson & Hirschi, 1990).

Gottfredson & Hirschi (1990) conceptualized the elements of self-control, and its antecedents, in terms of personality traits and preferred behaviors. Building on the work of these authors, others have developed six components of the trait of self-control, as well as a scale
to measure the level at which an individual possesses these traits (Arneklev et al., 1993; Barlow, 1991). The six components of self-control have been identified as follows:

1. impulsivity,
2. simple tasks,
3. risk-seeking,
4. physical activity,
5. self-centered, and

These dimensions measure some factors critical to academic success, such as the individual’s level of persistence on task or study skills (impulsivity, simple tasks) and the individual’s interpersonal skills (self-centeredness, temper).

The first dimension of self-control, impulsivity, is a “tendency to respond to tangible stimuli in the immediate environment, to have a concrete ‘here and now’ orientation” (Gottfredson & Hirschi, 1990, p. 89). Higher levels of impulsivity suggest a tendency to succumb to immediate pleasure fulfillment (Arneklev et al., 1993), an inability to delay gratification (Grasmick et al., 1993) and, therefore, a lower level of self-control.

The second dimension is called simple tasks (Barlow, 1991; Grasmick et al., 1993). It is the tendency to “lack diligence, tenacity, or persistence in the course of action . . . preferring easy or simple gratifications of desires” (Gottfredson & Hirschi, 1990, p. 89). The higher the score on this dimension, the less self-control the individual possesses. The third dimension of self-control is risk-seeking, and it refers to the tendency to be “adventurous . . . preferring exciting, risky or thrilling” activities (Gottfredson & Hirschi, 1990, p. 89). Individuals with high levels of risk-seeking behavior have lower levels of self-control (Barlow, 1991).

Individuals with low self-control tend to have a preference for physical activity rather than “cognitive” or “mental” activity (Gottfredson & Hirschi, 1990). Grasmick et al. (1993) refers to this dimension as a preference for physical activity.
The fifth dimension of self-control is self-centered, which refers to the individual's tendency “to be self-centered, indifferent, or insensitive to the suffering and needs of others” (Barlow, 1991; Grasmick et al., 1993).

The final dimension of the self-control scale is temper (Barlow, 1991; Grasmick et al., 1993). Individuals with low self-control “tend to have minimal tolerance for frustration and little ability to respond to conflict through verbal rather than physical means” (Gottfredson & Hirschi, 1990, p. 89).

The study of self-control in academic settings is important because it provides insight into some of the personal and social challenges of college students (Muraven et al., 1999). For example, imprudent and indulgent behaviors such as irresponsible sexual activity (Arnekleve et al., 1993), excessive spending, drunkenness and drunk driving, theft (Baumeister & Exline, 2000; Burton, Cullen, Evans, Alarid, & Dunaway, 1998), and cheating on exams (Tibbets & Meyers, 1999) have been shown to result from failures in self-control. Self-control failures often occur when the individual attempts too many changes at any given time in his or her life (Baumeister & Exline, 2000). Given that college students are initiating many “firsts” in their lives (i.e., first time away from home on their own, first apartment, first credit card), there is a potential for problems with self-regulation and self-control. In these formative years a student recognizes that “he is now playing in a different league and he knows that the major tests of life still await him” (Sanford, 1964, p. 87).

Researchers have also linked self-control to goal achievement in higher education (Logue, 1995; Strayhorn, 2002) where it is seen as an internal mechanism that pushes students forward in their academic pursuits. Individuals with high levels of self-control will often delay gratification in order to achieve a college degree (Logue, 1995), have greater problem-solving skills (Fraser & Tucker, 1997), and are more successful, both socially and academically (Muraven et al., 1999).

Nevitt Sanford (1962) contends that students must be challenged to push themselves forward developmentally while in college, yet also be offered a reasonable amount of support and encouragement. Sanford argues that too much challenge causes students to withdraw (leave the
academy) and too much support causes them to remain complacent and not fulfill their potential. The college experience will hopefully encourage students to seek “a commitment to the power of self-knowledge and personal responsibility” (Freedman, 1987, p. 9).

Self-control can be thought of as the internal vehicle that offers this challenge and support, similar to the “core” muscles of one’s body. Studies have found that while one’s resources for self-control are depleted in the short run, they act similarly to a muscle becoming fatigued and becoming strengthened. In the short term, these resources become depleted, or fatigued, when the individual is required to continually regulate him or herself. However, over time, that same habit is strengthened through the exercise of self-control (Muraven et al., 1999; Strayhorn, 2002). Thus, a college student with a great deal of self-control is able to balance the two necessary conditions posited by Sanford and, consequently, move forward—at least in terms of academic performance or “success.”

This article reports on a study that investigated the level of self-control reported by college students and its effect on their level of academic performance. Similar to previous studies, academic performance is measured by the student’s GPA (Cheung, 1998; Sandler, 2000). This study attempts to answer the question, “Do high academic performers differ from low academic performers in terms of their reported level of self-control?”

**Method**

**Participants**

Questionnaires were distributed to a convenience sample of 304 undergraduate students attending a public college of 4,500 in the northeastern United States during the 2001–2002 academic year. Participants were students in four undergraduate classes (two general education courses and two business courses). Of the total of 276 useable surveys collected, 84% of the sample fell into the age range of 18–22 years. The remaining respondents were over 22 and, therefore, considered nontraditional students. Given the purpose of the study, the sample was reduced to include only traditional students. The final
sample totaled 238 respondents. Fifty-eight percent of the sample was female, 94% of the sample was single, and 93% was Caucasian.

**Self-Control Scale**
We measured self-control with a 24-item psychometric scale developed by Grasmick et al. (1993) and later used in many studies (Arneklev, Cochran, & Gainey, 1998; Nagin & Paternoster, 1993; Piquero & Tibbets, 1996). Item responses were coded on a seven-point Likert scale, ranging from 1 (never) to 7 (very often). Although somewhat counterintuitive, this scale was developed so that a high score on the scale is indicative of low self-control. For a more detailed discussion of the development of the scale, see Grasmick et al. (1993). We followed the method used by Grasmick et al. (1993), to create the z-score transformation in order to reduce the variance among the items. By definition, a z-score transformation establishes a mean of zero and a standard deviation of 1 for the item. When an item is standardized, the values will range from approximately -3 to +3, or three standard deviations away from the mean. Therefore, a z-score of 0.5 indicates that the value of that particular respondent is .5 standard deviations above the mean for that item. Standardized item values were then used to construct the self-control scale and the subdimensions. Finally, we used these scales to compare academic performance groups similar to the method used by Pinto, Parente, and Palmer (2000).

In accordance with the procedure followed by Arneklev et al. (1998) and Piquero and Tibbets (1996), we also conducted a principal components factor analysis to examine the underlying dimensions of self-control. The factor loadings and reliabilities provided by this analysis were comparable to those reported by Grasmick et al. (1993) as well as the studies mentioned earlier. Concurrent with the results of the previous research we also used a one-factor, uni-dimensional model for self-control ($\alpha = .87$).

**Academic Performance**
Academic performance was measured by using a self-report item that asked: “Please indicate your current cumulative grade point average.” Self-reported GPA measures are frequently used in educational research (Connelly, DuBois, & Staley, 1998; Hensley, 1995; Ristow & Edeburn, 1984). We relied on the tercile methodology used in prior
studies (Pinto et al., 2000; Richins, 1994) to create three groups (terciles) for academic performance based on the students’ self-reported GPA scores. To create a clear separation between the high academic performers and the low academic performers, we eliminated the middle tercile. In the following discussion, Group 1 (GPA 2.9 or less) are the low performers and Group 3 (GPA = 3.3 or more) are the high performers. Our reduced sample of 238 was further reduced to 164 due to the elimination of the medium performer group (n = 74). The sample was divided between high (n = 88) and low (n = 76) academic performers.

Table 1 lists the percentages of respondents who were high versus low performers by sample characteristics of age, gender, and the student’s year in school. Of interest in Table 1 is the difference by gender in high and low academic performers. Males made up a much higher percentage of the low performer group. This finding may be supported by past research on academic success that points to gender as being a predictor of academic performance (Ting & Robinson, 1998; Zheng, Saunders, & Shelley, 2002).

Results

We used a t test, the statistical analysis used for comparing means of two groups, to address the research question, “Do high academic performers differ from low academic performers in terms of their reported level of self-control?” As Table 2 indicates, we found a significant difference between high and low academic performers in terms of their overall level of self-control (t = 3.59, p < .000). In addition, we found significant differences in several of the subdimensions of self-control—impulsivity (t = 3.77, p < .000), risk seeking (t = 3.36, p < .001), and physical activity (t = 3.00, p < .000). The differences between high and low performer groups on the dimensions of simple tasks, self-centered, and temper were not significant.

Discussion and Limitations

In recent years, the concept of self-control has generated increasing interest in social science fields as researchers investigate its impact on a variety of social and behavioral issues. It is commonly agreed that
Table 1
Comparison of High and Low Academic Performers by Sample Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Total Sample</th>
<th>High Performers</th>
<th>Low Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>164</td>
<td>88</td>
<td>76</td>
</tr>
<tr>
<td>Age</td>
<td>20.3</td>
<td>20.2</td>
<td>20.4</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>38%</td>
<td>44%</td>
<td>30%</td>
</tr>
<tr>
<td>Male</td>
<td>62%</td>
<td>56%</td>
<td>70%</td>
</tr>
<tr>
<td>Year in School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11.6%</td>
<td>14.8%</td>
<td>7.9%</td>
</tr>
<tr>
<td>2</td>
<td>32.3%</td>
<td>31.8%</td>
<td>32.9%</td>
</tr>
<tr>
<td>3</td>
<td>25.6%</td>
<td>25.0%</td>
<td>26.3%</td>
</tr>
<tr>
<td>4</td>
<td>30.5%</td>
<td>28.4%</td>
<td>32.9%</td>
</tr>
</tbody>
</table>

"the capacity to alter and control oneself is one of the most powerfully adaptive and, indeed, miraculous aspects of the human psyche" (Baumeister, Heatherton, & Tice, 1994, p. 263). The popular press is filled with stories of self-control failure in which individuals “bring trouble and sadness not only on themselves but on people close to them and people who care about them” (Baumeister et al., 1994; Manning, 2000; Stearns, 1999; Strayhorn, 2002; Volke, 2002). Some of these articles are about college students who lack the self-discipline or self-regulation necessary to achieve academic success and prepare themselves for their future careers. Still, there is a paucity of research in this area. This study demonstrates the impact that self-control may have as a differentiator among undergraduate college students.

It is interesting to note that not only is self-control, as an overall construct, significant, but also that we can see the effects of several of its subdimensions (impulsivity, risk seeking, and physical activity) on academic performance. The subdimension of impulsivity has to do with a college student’s ability to delay gratification. This finding
Table 2
Self-Control in Low vs. High Academic Performers

<table>
<thead>
<tr>
<th>Factors</th>
<th>Low</th>
<th>High</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Self-Control</td>
<td>4.53</td>
<td>-2.29</td>
<td>3.59***</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.75</td>
<td>-.92</td>
<td>3.77***</td>
</tr>
<tr>
<td>Tasks</td>
<td>.56</td>
<td>-.10</td>
<td>1.34</td>
</tr>
<tr>
<td>Risk-Seeking</td>
<td>1.08</td>
<td>-.65</td>
<td>3.36***</td>
</tr>
<tr>
<td>Physical</td>
<td>1.16</td>
<td>-.33</td>
<td>3.00**</td>
</tr>
<tr>
<td>Self-Centered</td>
<td>.38</td>
<td>-.28</td>
<td>1.21</td>
</tr>
<tr>
<td>Temper</td>
<td>.78</td>
<td>-.02</td>
<td>1.56</td>
</tr>
</tbody>
</table>

* p < .05  ** p < .01  *** p < .001

1 All values are calculated using z-transformations.

reflects high performers' capacity to postpone an immediate desire until some point in the future (e.g., a friend calls them to shoot pool at a local club and they decide to postpone the offer until they have fully studied for an upcoming exam).

The second significant subdimension, risk seeking, refers to students' propensity to pursue daring, thrill-seeking, or risky behaviors. Low academic performers scored significantly higher on this dimension, suggesting that they tended to adopt a more carefree attitude toward their scholastic commitments (deadlines, studying, and so forth). High academic performers, on the other hand, are characterized by behaviors that are more risk averse: perhaps disciplining their risk seeking behaviors by accepting rules and guidelines in the academic setting.
The final significant subdimension, physical activity, directly relates to success in college. Low academic performers reported more preference for physical activity rather than mental activity. Students in the low academic performers group may not be willing to exert the cognitive effort and energy necessary to achieve high GPAs. For example, some universities offer incoming freshman several study habit tips: For every credit hour in the classroom, plan on studying 2 hours outside the classroom (Academic responsibilities and faculty expectations of students, 2002). Students with a preference for physical activity instead of mental or cognitive activity may not be willing to make the commitments necessary to ensure their academic success.

From an educational policy perspective, one implication of our findings is to offer administrators better information on how self-control (or the lack thereof) manifests itself in college students. Programs aimed at improving students’ self-control and, ultimately, academic performance could focus on helping undergraduates recognize, monitor, and regulate their tendencies toward excessive risk seeking or physical activity. In developmental terms, such programs can address the necessary “support” condition of Sanford’s (1962) theory, balancing the challenges of self-discipline and self-regulation.

Although our findings offer some important avenues for academic policy, programmatic offerings, and future research, there are some limitations to the current study that should be addressed. The study was limited to a convenience sample of one public university in the northeast that limits generalizability of our findings. Future studies should address this same issue in various geographical venues and school types (i.e., public, private, or religious). There are also limitations dealing with the demographics of the sample. First, there is a lack of ethnic diversity in the sample; the majority of our respondents were Caucasian, due to the overall demographic of the school. In addition, we did not measure the income level or other family background factors of the student, the student’s skills and abilities, or prior schooling, all of which could add insight to our conclusions (Tinto, 1975, 1987). Another limitation is that we did not address any antecedents of self-control such as parental involvement (Arnekleve et al., 1993), stress levels (Fraser & Tucker, 1997), and multiple life changes (Baumeister & Exline, 2000). Given that traditional-aged college students are under increased stress (Smith, 2002) and are undergoing several life
changes simultaneously Pascarella & Terenzini (1991), future research should investigate some of these variables to further our knowledge regarding how self-control is developed and maintained.

Another potentially fruitful avenue for future research concerns the relationship between gender, academic performance, and self-control. In this study, we found a large proportion of our low academic performer subset were males (Table 1). This result is intriguing and suggests the need to investigate the underlying reasons why such a large proportion of the low academic performers in the sample were male. Although understanding the potential causality of this relationship lies beyond the purview of this research, nevertheless, the result does bear further investigation.

Undergraduate student academic performance appears strongly tied to an individual’s capacity for self-regulating behavior, for which self-control is a useful construct. This research proposed a multifaceted model of self-control and showed some important empirical relationships between self-control and academic performance. Further, our findings can serve to offer administrators better information on how self-control (or the lack thereof) manifests itself in college students. In developing programs aimed at improving students’ self-control, and ultimately, academic performance, academic administrators would be well served to first concentrate on helping undergraduates recognize, monitor, and regulate their self-control tendencies, particularly with regard to excessive risk seeking or physical activity, thereby balancing the challenges of self-discipline and self-regulation.

References


