

## Predictors of Success for Gifted and Talented Schools: An Attitude, Interest, Values and Behavioral Approach

David Deviney, Ph.D. Associate  
Professor of Management Tarleton  
State University  
321 Blue Ribbon Road  
Waxahachie, TX 75165  
972.449.3114  
deviney@tarleton.edu

LaVelle H. Mills, Ph.D.  
Associate Dean & Professor of Management  
WT Box 60768  
West Texas A&M University  
Canyon TX 79016  
806.651.3866  
lmills@wtamu.edu

R. Nicholas Gerlich, Ph.D.  
Professor of Marketing  
WT Box 60809  
West Texas A&M University  
Canyon TX 79016  
806.651.2492  
ngerlich@wtamu.edu

## ABSTRACT

This research explores various predictors of success for academically talented students at an upper-level residential school located in the south-central US. The academic focus of the school is to provide selected students with opportunities for accelerated studies in math and science. Students in their junior and senior years were given the DISC (Dominance, Influence, Steadiness, Conscientiousness) behavioral instrument and tracked over a two year period to identify predictor attributes of success. Data were collected from 211 students, including academic and personal demographic information along with DISC scores.

The DISC has been used in job profiling to help companies make better hiring decisions such that employee retention and job success are maximized. Success in this study was measured as the outgoing grade point average (GPA) of the student. Multiple regression analysis was used to determine predictors of this independent variable. Results indicate that incoming GPA prior to enrollment as well as a student's adaptability on the Dominance dimension are significant predictors of success. The remaining three components of the DISC were not shown to be significant predictors. Further analysis also revealed differences between a students' adapted DISC scores (how students adapt to the situation) and their natural DISC scores (traits the student brought with them to the situation), suggesting that large gaps may create stress for individuals and impact their success in the program.

This research illustrates that the DISC can be used with relatively young subjects prior to their entering the job market and can successfully be used as a predictive tool. The DISC can thus be used to predict short- and long-term phenomena (from academic success to job success). The findings can also be used to help improve retention at the institution and better predict those who may be at most risk of attrition.

## Introduction

The DISC has been used in job profiling (Furlow, 2000) to help companies make better hiring decisions such that employee retention and job success are maximized. Support for hiring practices that intentionally result in a closer match between an employee's behavior preferences and job skills are found in companies as diverse as Walt Disney's the Magic Kingdom and Southwest Airlines (Connellan, T., 1996; Freiberg & Freiberg, 1997; and Sartain & Finney, 2003). Companies use these practices because their employees generally have higher levels of motivation and a lower turnover rate while the companies themselves tend to have better overall organizational performance with significant reductions in the cost of doing business (Collins, J., 2001 and Curphy, G., 1988).

An upper-level residential school for accelerated learners faces many of the same concerns as employers. The school administration wants to attract and retain students who have both the social and academic skills needed to be successful in the residential school environment (Brody & Benbow, 1986; Caplan, Henderson, Henderson & Fleming, 2002; Lupkowski, Whitmore & Ramsey, 1992; Muratori, Colangelo & Assouline, 2003; and Noble & Drummond, 1992). As in industry, when the fit between student social

and academic skills is strong, the students potentially have a greater likelihood of persisting and being more successful while the cost to the school in lost funding opportunities for other potentially successful students decreases.

Despite the best efforts of the institution, students in the program sometimes drop out. Other than academic criteria, there are no additional predictors of success. There is significant investment of time and money in selecting high school juniors and seniors to attend an accelerated residency school for gifted and talented students. Furthermore, students who drop out cannot be replaced, which can impact school funding.

The purpose of this study is to identify additional variables that would predict student success. Success in this study was measured as the outgoing grade point average (GPA) of the student. Multiple regression analysis was used to determine predictors of this independent variable. Identification of predictor variables would assist the school administration in screening students for admission and providing an early warning of students at-risk for dropping out. Retention is a significant component of state funding. Furthermore, it would reduce the emotional stress of students and parents created by dropping out.

Specifically, our research questions are:

1. Are natural or adapted behaviors predictors of success?
2. Are incoming GPA scores a predictor of success?

### Theoretical Background

Identifying and selecting gifted and talented students has been researched for over 40 years (Johns Hopkins University, 1999). Joseph S. Renzulli, Director, The National Research Center on the Gifted and Talented, University of Connecticut, has indicated that highly productive people have three interlocking clusters of ability that can be applied to gifted and talented students: above average ability, task commitment, and creativity (Renzulli, 1986). Sternberg and Wagner (1982) have described giftedness as a kind of mental self management with three characteristics: adapting to environments, selecting new environments, and shaping environments. They also describe three skills typically used: separating relevant from irrelevant information, combining isolated pieces of information into a unified whole, and relating newly acquired information to information acquired in the past.

When gifted and talented students were compared to the same age group of students, personality and behavioral differences were found (Mills, 1993). In this case the Myers-Briggs Type Indicator dimensions were used for comparison resulting in the gifted and talented students conveying greater preferences for introversion, intuition, and thinking. Additionally, the academically talented students expressed a preference for a perceptive style. These students gave emphasis to thinking over a feeling. They tended to score higher on achievement drive and lower on interpersonal and social concerns.

Dealing effectively with people through self-awareness has been identified as important to success for both students and employees. Peter Drucker, recognized for his consulting and writing related to effective management practices said, "History's great achievers – a Napoléon, a da Vinci, a Mozart – have always managed themselves" (2005, p. 100). Part of managing ourselves as proposed by Drucker, includes

understanding ourselves and building on our strengths. This includes understanding how we get things done and how this is similar to or different from how others get things done. Daniel Goleman in writing about emotional intelligence says, “People who have a high degree of self-awareness recognize how their feelings affect them, other people, and their job performance” (2004, p. 84).

One approach to increasing self-awareness and the impact one has on others that is recommended by Rehling (2004) is improving understanding of conversational styles. The DISC approach is one way to improve dyadic and team relationships (Bjorseth, 2004).

One of the basic tools used by Furlow in her work with job profiling (2000) is the DISC model. She looked for behavioral criteria identified as important to the organization and identified existing employees who displayed those characteristics. This led to the development of a template that could be used in hiring. Another example of job profiling focused on ensuring that the job profile for a specific position accurately represented the job (Savage, 2004). The top job profiling factor as identified by Savage is communication skills.

A review of academic literature related to effectiveness in communication and work skills show both commonalities and differences when approaching this topic. Four style-based factors frequently identified as being closely related to effective communications and work skills are D or Dominance, I or Influencing, S or Steadiness or Supportiveness, and C or Compliance or Conscientiousness (Bonnstetter & Suiter, 2007; Straw, 2002; Wittmann, 2008; Zigarmi, Blanchard, O’Conner & Edeburn, 2005). Four other somewhat similar style-based factors related to effective communication and relationships use terminology such as Driver or Director, Expressive or Socializer, Amiable or Relater and Analytical or Cautious (Alessandra, O’Connor & Alessandra, 1990; Bolton & Bolton, 1996; Merrill & Reid, 1981).

Style Insights – DISC is produced by Target Training International – Performance Systems, Ltd. TTI “uses the term ‘style’ as originally suggested by Fritz Perls to relate more to the specifics of how someone does something (Watson & Klassen, 2004, 4).” The Style Insights - DISC (Dominance, Influencing, Steadiness, Compliance) behavioral instrument produced by TTI has made changes to newer versions of their instrument as a means of keeping pace with current terms and descriptors being used (Watson & Klassen, 2004) The material produced by TTI also includes measures of behavioral hierarchy factors which relate to the ability to call upon many or fewer behavioral skills (Bonnstetter, 2006) and measures both natural and adapted behaviors (Watson & Klassen, 2004).

The DISC theory was originally developed by Dr. William M. Marston and published in *The Emotions of Normal People* (Marston, 1928). In DISC terminology he described people as behaving along two axes, passive or active, depending on the individual’s perception of the environment - antagonistic or favorable (Bonnstetter & Suiter, 2007). These can be grouped into four quadrants as follows:

1. Dominance (D) generates activity in an antagonistic environment
2. Inducement (I), later changed to Influencing generates activity in a favorable environment
3. Steadiness (S) generates passivity in a favorable environment
4. Compliance (C) generates passivity in an antagonistic environment (Bonnstetter & Suiter, 2007).

Vrba (2008) defines each of the DISC factors as follows:

**Dominance.** Dominance style of behavior is direct and decisive. This individual feels that it is important to achieve goals, they do not need to be told what to do, and they set high standards. When projects take too long they grow impatient: they enjoy competition and want to win. They are sometimes blunt and come to the point directly. “D” individuals tend to be direct, controlling, risk-taking, pessimistic, judging, extroverted, change-oriented, and fight-oriented.

**Influencing.** The Influencing behavior style reflects outgoing, optimistic individuals who love to communicate, and are people persons. These individuals tend to participate in team and group activities; they like the limelight though may not want to lead. “I” individuals prefer to be direct, accepting, risk-taking, optimistic, perceiving, extroverted, change-oriented and flight-oriented.

**Steadiness.** The Steadiness behavior style shows sympathetic, cooperative behavior. Helping others and fitting in are important to these individuals though they are hesitant to implement change and do not like to be in the limelight. “S” individuals tend to be indirect, accepting, risk-assessing, optimistic, perceiving, introverted, continuity-oriented, and flight-oriented.

**Compliance.** Compliance behavior style tends to be reliable and trustworthy. These individuals will plan out a strategy considering all the facts and possible malfunctions, and they prefer to work alone. “C” individuals prefer to be indirect, controlling, risk-assessing, pessimistic, judging, introverted, continuity-oriented, and flight-oriented.

Marston did not develop the DISC instrument, but his work did lay the foundation for the current DISC behavioral instrument (Bonnstetter & Suiter, 2007). Walter Clarke developed the first DISC related instrument entitled Activity Vector Analysis (Personality Insights, NEED DATE HERE). The Style Insights – DISC instrument used in this study was developed and validated by Bill Bonnstetter and Target Training International, Ltd. Over 20 years of research and validation studies have been completed (Bonnstetter & Suiter, 2007). The most recent validation study was conducted by Peter T. Klassen, Ph.D. (P. Klassen, letter, May, 2006).

Use of the DISC model provides a behavioral framework to help people understand their behavior preferences, learn to identify behavior preferences of others, and learn to identify specific behaviors best suited for various organizational environments (Warburton, 1983). According to Warburton (1983, p. 2), “this is the information which they require for maximum productivity and to build multiform, harmonious relations with others.” Working with a model such as that provided by the DISC approach helps overcome the belief that only people who are like me are the best choice for work positions or team members for a school project (Hymowitz, 2004; May & Gueldenzoph, 2003).

Personality and the relating behaviors have been found to predict job satisfaction (Judge, Heller & Mount, 2002). Another study found that personality and job satisfaction were significantly correlated in intensive care, non-intensive care and perioperative nurses (Hart, 1986). The importance of helping people in organizations understand and use behaviors effectively can be directly related to turnover. According to Schoeck (2007), “85% of turnover is due to behavioral incompatibility.” Shepherd (2005) has reported increased profits when employee work styles are compatible with the work styles preferred by the organization. Part of the increase in profits could be related to a decrease in employee turnover because of the improvement in person/job fit.

A number of studies have researched the value of using the DISC instrument to predict success. One study found that it can be useful in predicting the success of sales managers (Devine, Naidu, Kleimenhagen, 1997). Bonnstetter (2006) studied 670 top performing sales people from companies in both the U.S. and Germany. He found that behavior, particularly behaviors related to D, S, and C, were shared by top performers in sales in both countries.

The DISC system (Scarbecz, 2007) has also been used as a communication tool to motivate patients to engage in healthy behaviors. By using the DISC system to establish a rapport with dental patients, Scarbecz reports dental professionals having increased success with persuading patients to accept treatment plans that are essential for their health and well-being.

Another study suggests that the DISC system can be used to profile jobs and then hire those persons that match the profile (Furlow, 2000). Dr. Jim Hall (Bonnstetter & Suiter, 2007) found that persons with high Dominance and low Steadiness scores have a higher chance of accidents in certain occupations while persons with a high Steadiness or Compliance score predicts a greater likelihood of their using safer behaviors.

The DISC report identifies two behavioral styles, Natural and Adaptive. The Natural Style represents the behaviors one exhibits when they are not under pressure. This is said to be the “real you.” The Adapted Style predicts one’s behaviors when placed in an environment that demands certain behaviors (Bonnstetter & Suiter, 2007). Dr. David Warburton in his research (Bonnstetter & Suiter, 2007) found a direct correlation between a person’s DISC Natural Style behaviors and that same person’s match to their environment (job or home) or Adapted Style behaviors. Warburton revealed that the greater the disparity between the DISC natural behavioral style and the environmental adapted behavioral style, the greater the stress. Furthermore, Warburton’s research gives evidence that the DISC natural and adapted behavioral disparity is a predictor of job satisfaction, mental health, physical health, alcohol use and absenteeism.

Also related to success in school are things pertaining to gender and GPA. For both male and female students, entering GPA’s tend to be much higher than those of their former classmates (Noble & Drummond, 1992; and Noble & Robinson, 1993). Female students in accelerated programs may maintain consistently higher GPA’s, equaling or exceeding those of male students in accelerated programs. Noble and Smyth (1995) suggest such performance could be due to the rare combination of acceptance and encouragement in this unique environment. Higher achievement may result from both male and female students in the accelerated school environment because of access to more challenging curriculum ( Benbow & Stanley, 1996). The methodology utilized in this study and the hypotheses tested are described in the following section.

### Methodology & Hypotheses

A two-year, accelerated public residential state high school for students in their junior and senior years was utilized in this study. The school is located in the south-central US; studies at the institution focus primarily on mathematics, science, computer science and humanities. It is part of that state’s flagship university system. Admission to the school is competitive and selective; previous GPA at the student’s home high school is used as a criterion, along with ACT or SAT scores.

Despite the best efforts of the institution, students in the program sometimes drop out. Other than academic criteria, there are no additional predictors of success. There is significant investment of time and money in selecting high school juniors and seniors to attend an accelerated residency school for gifted and talented students. Furthermore, students who drop out cannot be replaced, which can impact school funding.

This research explores various predictors of success at an accelerated residential gifted and talented upper-level high school for math and science. Students in their junior and senior years were given the DISC (Dominance, Influence, Steadiness, Conscientiousness) behavioral instrument and tracked over a two year period to identify predictor attributes of success. Data were collected from 211 students, including academic and personal demographic information along with DISC scores. All data collection was completed in a computer lab with online testing; results were provided to the students approximately two months following their participation.

Based on the literature above, we hypothesize the following relationships between DISC and other relevant variables to GPA. The hypotheses are grouped in two matrices to summarize the analyses conducted herein; the first matrix pertains to t-tests conducted between low- and high-GPA students in the program, while the second matrix pertains to three regression models. These models were used to predict GPA in the program, as a function of the individual DISC scores, along with gender, entering GPA and a calculated “difference” score that captures the gap between the student’s natural and adapted DISC scores.

Hypotheses Matrix: Comparing Means of Low- and High GPA Students

Hypothesis	Variable	1: Natural Measure	2: Adapted Measure	3: Difference Measure
(a)	D	s.d. (+)	s.d. (+)	s.d. (-)
(b)	I	s.d. (-)	s.d. (-)	s.d. (-)
(c)	S	s.d. (+)	s.d. (+)	s.d. (-)
(d)	C	s.d. (+)	s.d. (+)	s.d. (-)

s.d. = significant difference and direction of difference  
 n.s.d. = no significant difference and direction of difference

Hypotheses Matrix: Predictors of GPA

Hypothesis	Variable	4: Natural Model	5: Adapted Model	6: Difference Model
(a)	D	(+)	(+)	(-)
(b)	I	(-)	(-)	(-)

(c)	S	(+)	(+)	(-)
(d)	C	(+)	(+)	(-)
(e)	Total Difference	(-)	(-)	N/A
(f)	Gender	male	male	male
(g)	Entering GPA	(+)	(+)	(+)

Results

“Success” at this institution was operationalized as GPA earned while at the two-year school (endGPA). The mean GPA was 3.55, while the median was 3.56. The former score was utilized as a means of splitting the sample in two for statistical purposes (“high GPA” and “low GPA”).

The DISC reports an individual score for each of the four components, but in both the subject’s “natural” and “adapted” styles. Thus, there are Dn, Da, In, Ia, etc., scores for each student. A third set of four measures was calculated as “difference” scores (Dd, Id, etc.) that is the absolute value of the difference between the adapted and natural states. Finally, a Total Difference (TotalD) score was calculated that is the sum of Dd, Id, Sd and Cd. There were thus 13 reported or calculated variables resulting from taking the DISC test. These scores were used first for comparing means among the “low” (<3.56) GPA and “high” (>3.56) GPA groups (see Tables 1a/b), and then in a series of multiple regression equations (see Tables 2a/b through 4a/b).

The t-tests provide an opening look at how students’ behavioral styles may vary based on GPA grouping. GPA is a direct measure of student effort, but that effort may also be related to innate behavioral dimensions.

Natural DISC scores reflect a person’s preferences for behaviors. Adapted DISC scores reflect the behaviors a person believes are needed for a particular situation (e.g., job or school environment). The greater the disparity between natural and adapted scores, the greater the likelihood that a person’s stress level is increasing. While moderate to moderately high levels of stress may help increase productivity, the point at which stress becomes negative and results in nonproductive behavior will vary.

Someone in a new job or who is adjusting to a new school environment may initially have higher differences between their Adapted and Natural scores and thus have a larger overall Difference score. Even someone who tends to use behaviors from each of the four styles to adapt to situational needs will, over time, risk burnout and excessive fatigue if they are not able to use some of their preferred behavior in productive ways.

Tables 1a/b show significant differences between the two groups in the mean scores for Ia, Ca and Dd. In both the first and third cases, the relationship is inverted, yielding negative t-statistics. This means that “high GPA” students scored significantly lower on the Influencing dimension in their adapted score, significantly higher on the Compliance dimension in their adapted score, and significantly lower on the



Dominance dimension in their calculated difference score. Hypotheses H2b, H2d and H3a are thus retained.

The fact that “high GPA” students scored significantly lower on the Influencing dimension in their Adapted score could be related to their ability to adapt behaviors they perceive to be required to meet their educational goals. Students who make the choice to enter the accelerated study program in math and science often leave a school environment where intensive study was not a requirement for receiving top level grades. They may well have been able to simply be in class most of the time and excel at high levels on exams and projects. Moving to an environment where earning high grades on exams and even being able to participate effectively in classroom discussions now requires a different set of behaviors can be both challenging and stressful (Bonnstetter, 2006).

Since High I behaviors are more people-focused (Bossé-Smith, 2005) these students may be realizing the difference in behavior needed to be successful in the new environment and adapting. If the change to behaviors that are more task focused is motivating and enriching they may be satisfied with this change (Kabachnick, 2007). Research conducted by Bonnstetter (2006) reflects that people who have the ability to use a variety of behavior skills may effectively use behaviors from a variety of styles. This concept, sometimes called versatility, is reported by Gilmore (2008) as being able to adjust or adapt your behavior to meet the needs of a particular person or situation.

If the job characteristics (i.e., course requirements) aren't motivating or rewarding, then making a change such as decreasing Influencing (I) behaviors and increasing Compliance or Consistency (C) behaviors might not continue. Ree and Carretta (1999) implicitly support this concept where research they conducted indicated that lack of ability may not be the problem. Their research indicated that it is possible for the student to simply find the job characteristics (e.g., course requirements) to be demotivating.

The Dominance (D) dimension of the DISC focuses on problem solving. It is likely that the significantly lowers difference in Da and Dn reflects consistency in their use of D behaviors, both natural and adapted. This would imply that these students are facing challenges consistently and remaining focused on achieving successful outcomes. They simply don't quit. Regardless of their level of aggressiveness and determination, they are likely to be consistent in how they remain focused on dealing with the problems they encounter in this environment. The fact that they are in the “high GPA” student group would imply that they are doing so effectively.

Next, predictive models using multiple regression were built using GPA as the dependent variable. In all three models, the student's gender and entering GPA (from their previous school) were included as independent variables. Although student ACT and SAT scores were collected, they were not available for enough students so as to render them ineffective for our modeling purposes. This variable was thus excluded from the present analysis.

The models then varied by the inclusion of the four DISC scores depending on whether they were the reported Adapted or Natural scores, or the calculated Difference score. The Adapted and Natural models also included a calculated Total Difference score to indicate the degree of disparity a student has among his or her four dimensions in both the Adapted and Natural states. The basic models are as follows:

The Natural Model (1):

GPA = f(Gender, enterGPA, DISC-natural scores, and Total Difference)

The Adapted Model (2):

GPA = f(Gender, enterGPA, DISC-adapted scores, and Total Difference)

The Difference Model (3):

GPA = f(Gender, enterGPA, calculated DISC-difference scores)

Results of the regressions appear in Tables 2a/b, 3a/b and 4a/b below. In each instance, the calculated R-square statistic was between 0.532 and 0.548, indicating that the data fit the model well. Furthermore, enterGPA was highly significant in each of the models, indicating it is the best individual predictor of success (endGPA) in this particular program. While the mean entering GPA was substantially higher overall than mean ending GPA (3.81 vs. 3.55, see Table 4), it still has more influence than other included variables. Only H4g is retained.

In fact, in the Natural Model, neither gender nor the individual scores for the DISC natural dimensions were significant predictors. This suggests that regardless of the DISC traits a particular student demonstrates, there will be no significant effect on their ending GPA. In the Adapted Model (Model 2), entering GPA was joined by the D and C components as positively-related and significant predictors. This can be interpreted to mean that students perceived a need to use D and C behaviors (Adapted behaviors) different from their preferred or Natural D and C behaviors. This would reflect a perception by the students of a need to use a different level of Dominance behavior (either increased or decreased) and a different level of Compliance or Consistence behavior (either increased or decreased). H5a, H5d and H5g are thus retained.

In both the Natural Model and the Adapted Model, a composite total difference score (totalD) was included as a predictor variable to gauge the effect of the overall disparity between a student's natural and adapted styles. It thus serves as a global measure of the dissonance a student might feel as they seek to adapt to the demands of their surroundings. In neither case was this variable a significant predictor.

In the Difference Model, entering GPA and the difference score on the D component were significant predictors. The Difference Model essentially examines scores "at the margin" for each of the four components, meaning the difference between a student's natural and adapted scores. These numerical differences were included as absolute values and thus indicate the magnitude of the discrepancy between what a student naturally brings with them to a situation, and their (the student's) interpretation of what they need to do to survive in this particular environment. In this instance, only the difference in the D dimension was a significant predictor, indicating that those students who had lower differences in Dominance had higher ending GPAs (and vice-versa). Only H6a and H6g are retained.

## Discussion

The data used in this research project focuses solely on student scores on the DISC. There has been no involvement of administration/management training in the DISC system that would help them see specific benefits in approaching students and/or employees based on style needs and preferences.

DISC style preferences, both Natural and Adapted, can be one factor contributing to a student or employee's success. While style fit for both the individual and the organization is important, DISC style alone may not be the only predictor of success. The fact that only data relating to the DISC system was used in this project is a limiting factor in the research.

Also, the data in this research project applies to performance of accelerated junior and senior students at a residential school. Without additional research, it cannot be generalized beyond this one group and setting.

Further research is needed to expand analysis of data related to the DISC system and to include another potentially important component, a measure of attitudes and values. Behaviors typically reflect how a person behaves while values reveal why a person makes specific choices.

This research could be expanded in several ways. One dimension that would add depth would be to involve the administration and faculty of the school in DISC training and get their support for its use by them in interacting with the students.

Data analyzed for this paper focuses primarily on each student's top DISC factor as determined by scores. DISC behaviors could be examined from the perspective of combinations of each student's top two styles (e.g., DI, SC, DC, IS, etc.). A comparison with the combinations and individual scores might reveal a more definitive view of a person's preferred behaviors.

There are eight other possible sub-categories (Conductor, Persuader, Promoter, Relater, Supporter, Coordinator, Analyzer, and Implementor) that can be identified from style data. This research does not address these categories. Either using a student's top two preferences and/or their score on one of the eight sub-categories could show significantly different outcomes.

Future research should consider conducting an analysis of behavioral factors. This analysis would provide a measure of flexibility or versatility. It is possible that this measure would correlate more strongly with success than behavior style alone because the flexibility or versatility score would represent a person's ability to use various style behaviors effectively.

Finally, future research should incorporate a measure of attitudes and values. If the DISC styles indicate how one behaves, and individual attitudes and values measure why a person makes various choices, it would seem important to analyze outcomes on attitudes and values independently and to also combine behaviors, attitudes and values measures to see if the overall combination does in fact provide a more complete picture.

Future research needs to address each of these limitations, individually and collectively, to identify possible relationships that could support or even change the direction of findings when examining style based on the single factor with the highest score.

## References

- Alessandra, T. & O'Connor, M. with Alessandra, J. (1990). *People smart: Powerful techniques for turning every encounter into a mutual win*. LaJolla, CA: Keynote Publishing Company.
- Benbow, C. P. & Stanley, J. C. (1996). Inequity in equity: How "equity" can lead to inequity for high-potential students. *Psychology, Public Policy, and Law*, 22, 249- 292.
- Bjorseth, L. (2004). If you want to get along better with people, try the DISC approach: Customer service and relationship building go hand in hand. *Springs, the international magazine of spring manufacture*, a publication of the Spring Manufacturers Institute, 43(4), 1-3.
- Bolton, R. & Bolton, D. (1996). *People styles at work: Making bad relationships good and good relationships better*. New York, NY: American Management Association.
- Bonnstetter, B. (2006). Groundbreaking research: What's inside of top sales performers in the United States and Europe. Phoenix, AZ: Target Training International, Ltd. Downloaded November 28, 2008 from [http://ttied.com/images/b/b0/TTIMAG\\_GroundbreakingResearch.pdf](http://ttied.com/images/b/b0/TTIMAG_GroundbreakingResearch.pdf)
- Bonnstetter, B. (2006). If the job could talk. Phoenix, AZ: Target Training International, Ltd. Downloaded November 28, 2008 from [http://ttied.com/images/3/33/TTIMAG\\_IfTheJobCouldTalk.pdf](http://ttied.com/images/3/33/TTIMAG_IfTheJobCouldTalk.pdf)
- Bonnstetter, B. (2006). Information that adds to the art of selection for the financial industry. *Success Insights Summer Conference*. July, 2006. Phoenix, Arizona.
- Bonnstetter, B. & Suiter, J. (2007) *The Universal Language DISC: A Reference Manual*. Phoenix, AZ: Target Training International, Ltd.
- Bossé-Smith, L. (2005). More than motivation: Understanding behaviors is the key to strong leadership and training. *Fundamentals,T+D*, 22-23.
- Brody, L. & Benbow, C. (1986). Social and emotional adjustment of adolescents extremely talented in verbal or mathematical reasoning. *Journal of Youth and Adolescence*, 15(1). 1-18.
- Caplan, S. M., Henderson, C. E., Henderson, J., & Fleming, D. L. (2002). Socioemotional factors contributing to adjustment among early-entrance college students. *Gifted Child Quarterly*, 46, 124-134.
- Collins, J. (2001). *Good to great: Why some companies make the leap . . . and others don't*. New York, NY: HarperCollins Publishers, Inc.
- Connellan, T. (1997). *Inside the Magic Kingdom: Seven keys to Disney's success*. Austin, TX: Bard Press.
- Curphy, G. (1998). In-depth assessments, 360-Degree feedback, and development: Key research results and recommended next steps. Presentation at the Annual Conference for HR Managers at US West Communications, Denver, CO. January, 1998.
- Devine, A. M., Naidu, G. M., Kleimenhagen, A. K. (1997) Predictors of sales manager performance: an empirical study. *Journal of Marketing Management*. 7(1) 47-60

Drucker, P. (2005). Managing oneself. *Harvard Business Review*, Best of HBR 1999, January 2005. 100-109.

Freiberg, K. & Freiberg, J. (1997). *Nuts! Southwest Airlines' crazy recipe for business and personal success*. New York, NY: Broadway Books.

Furlow, L. (2000). Job profiling: building a winning team using behavioral assessment. *Journal of Nursing Administration*, 30(3)

Gilmore, A. (2008). Lifestyle learning: Improve the bottom line with behavioral education. *Chief Learning Officer*, 22-27.

Goleman, D. (2004). What makes a leader? *Harvard Business Review*, Best of HBR 1998, January 2004. 82-91.

Hart, A. L. (1989). Operating room nurses' personality profiles as related to job satisfaction. Unpublished doctoral dissertation, Indiana University.

Hymowitz, C. (2004). Managers err if they limit their hiring to people like them. *The Wall Street Journal*. Downloaded DATE from WEB SITE

John Hopkins University: Center for Talented Youth (1999). Personality and cognitive learning styles for academically talented students: Topical research series #2. Retrived December 1, 2008 from <http://cty.jhu.edu/research/topical2.html>

Judge, T.A., Heller, Daniel & Mount, M.K. (2002). Five-Factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology* 87(3) 530–541

Kabachnick, T. (2007). "I quit . . . but forgot to tell you!" The disengaged worker. Phoenix, AZ: Target Training International, Ltd. Downloaded November 28, 2008 from [http://ttied.com/images/3/38/I\\_Quit\\_Article\\_Kabachnick.pdf](http://ttied.com/images/3/38/I_Quit_Article_Kabachnick.pdf)

Lupkowski, A. E., Whitmore, M., & Ramsay, A. (1992). The impact of early entrance to college on self-esteem: A preliminary study. *Gifted Child Quarterly*, 36, 87-90.

Marston, W. M. (1928) *Emotions of Normal People*. New York: Harcourt, Brace and Company.

May, G. & Gueldenzoph, L. (2003). The impact of social style on student peer evaluation ratings in group projects. *Proceedings of the 2003 Association for Business Communication Annual Convention*.

Merrill, D. & Reid, R. (1981). *Personal styles and effective performance*. Radner, PA: Chilton Book Company.

Mills, C. J. (1993). Personality, learning style and cognitive style profiles of mathematically talented students. *European Journal for High Ability*, 4, 70-85.

Muratori, M., Colangelo, N., & Assouline, S. (2003). Early-entrance students: Impressions of their first semester of college. *Gifted Child Quarterly*, 47, 219-238.

Noble, K. D., & Drummond, J. E. (1992). But what about the Prom? Students' perceptions of early college entrance. *Gifted Child Quarterly*, 36, 106-111.

Noble, K. D., Robinson, N. M., & Gunderson, S. A. (1993). All rivers lead to the sea: A follow-up study of gifted young adults. *Roeper Review*, 15(3), 124-130.

Noble, K. D. & Smyth, R. K. (1995). Keeping their talents alive: Young women's assessment of radical, post-secondary acceleration. *Roeper Review*, 18(1), 49-54.

Personality Insights. General insights. Downloaded November 13, 2008 from <http://www.personalityinsights.com/q-a-gral.html>

Ree, M. & Carretta, T. (1999). Lack of ability is not always the problem. *Journal of Business and Psychology*, 14(1). 165 – 171.

Rehling, L. (2004). Improving teamwork through awareness of conversational styles. *Business Communication Quarterly*, 67(4). 465 – 482.

Renzulli, Joseph S (1986). A practical system for identifying gifted and talented students. Retrieved December 1, 2008 from <http://www.gifted.uconn.edu/sem/semart04.html>

Sartain, L. & Finney, M. (2003). HR from the heart: Inspiring stories and strategies for building the people side of great business. New York, NY: AMACOM

Savage, Y. (2004). Is that really my job? A guide to job profiling. *British Journal of Community Nursing*, 9(10), 426-8.

Scarbecz, M. (2007). Using the DISC system to motivate dental patients. *Journal of the American Dental Association*, 138. 381-385.

Schoeck, A. (2007). People skills for the technical person. Phoenix, AZ: Target Training International, Ltd. Downloaded November 28, 2008 from [http://ttied.com/images/f/f4/People\\_Skills\\_Article\\_Schoeck.pdf](http://ttied.com/images/f/f4/People_Skills_Article_Schoeck.pdf)

Shepherd, W. (2005). Increasing profits by assessing employee work styles. *Employment Relations Today*, 32(1). 19-23.

Sternberg, R., & Wagner, R. (1982). "A revolutionary look at intelligence." *Gifted Children Newsletter*, 3, 11.

Straw, J. with Cerier, A. (2002). *The 4-dimensional manager: DiSC strategies for managing different people in the best ways*. San Francisco, CA: Berrett-Koehler Publishers, Inc.

Vrba A. M. (2008) Relationship between follower behavior style and perception of effective leadership characteristics of adult learners. Ph.D. dissertation, Pro Quest 2008 NO. AAT 3320830

Warburton, D. (1983). The importance of finding the real person at work. Retrieved November 28, 2008 from <http://www.profilingpro.com/warburton.pdf>

Watson, R. & Klassen, P. (2004). Style Insights – DISC: Instrument validation manual. Phoenix, AZ: Target Training International—Performance Systems, Ltd., Success Insights Inc. Retrieved November 28, 2008 from <http://www.oacinc.com/MFS/ValidityManual.pdf>

Wittmann, R. (2008). persolog®: Develop organizations through people! Research Report on persolog® Personality Factor Model. Persolog GmbH, D-75196 Remchingen. Retrieved November 28, 2008 from [http://www.persolog.net/fileadmin/imagesBUH/Experten-Login\\_englisch/US-IO157\\_Study\\_2008\\_g4.pdf](http://www.persolog.net/fileadmin/imagesBUH/Experten-Login_englisch/US-IO157_Study_2008_g4.pdf)

Zigarmi, D., Blanchard, K., O'Connor, M. & Edeburn, C. (2004). The leader within: Learning enough about yourself to lead others. Upper Saddle River, NJ: Pearson Education, Inc.

Table 1a & 1b: T-Tests  
Group Statistics

	endGPA	N	Mean	Std. Deviation	Std. Error Mean
Da	>= 3.5600	103	50.28	25.100	2.473
	< 3.5600	102	50.68	28.201	2.792
Ia	>= 3.5600	103	47.77	29.562	2.913
	< 3.5600	102	56.10	29.314	2.903
Sa	>= 3.5600	103	58.88	24.922	2.456
	< 3.5600	102	54.27	26.781	2.652
Ca	>= 3.5600	103	60.71	28.355	2.794
	< 3.5600	102	51.75	28.361	2.808
Dn	>= 3.5600	103	52.80	25.859	2.548
	< 3.5600	102	55.78	25.822	2.557
In	>= 3.5600	103	48.63	30.941	3.049
	< 3.5600	102	55.60	29.664	2.937
Sn	>= 3.5600	103	60.50	28.531	2.811
	< 3.5600	102	55.96	29.823	2.953
Cn	>= 3.5600	103	58.35	31.163	3.071
	< 3.5600	102	52.99	29.184	2.890
Dd	>= 3.5600	103	12.40	10.257	1.011
	< 3.5600	102	15.87	13.045	1.292
Id	>= 3.5600	103	14.30	12.472	1.229
	< 3.5600	102	15.58	13.673	1.354
Sd	>=	103	16.81	12.210	1.203

	3.5600				
Cd	< 3.5600	102	16.51	13.937	1.380
	>= 3.5600	103	14.09	13.326	1.313
TotalD	< 3.5600	102	16.08	13.384	1.325
	>= 3.5600	103	57.59	26.793	2.640
	< 3.5600	102	64.04	28.749	2.847

Independent Samples Test

		F	Sig.	t	df	Sig. (2-tailed)
Da	Equal variances assumed	3.756	.054	-.106	203	.916
	Equal variances not assumed			-.106	199.842	.916
Ia	Equal variances assumed	.128	.721	-2.026	203	.044
	Equal variances not assumed			-2.026	203.000	.044
Sa	Equal variances assumed	2.217	.138	1.276	203	.204
	Equal variances not assumed			1.275	201.658	.204
Ca	Equal variances assumed	.005	.945	2.260	203	.025
	Equal variances not assumed			2.260	202.980	.025
Dn	Equal variances assumed	.013	.910	-.828	203	.409
	Equal variances not assumed			-.828	202.986	.409
In	Equal variances assumed	1.544	.216	-1.645	203	.101
	Equal variances not assumed			-1.646	202.788	.101
Sn	Equal variances assumed	.067	.795	1.115	203	.266
	Equal variances not assumed			1.115	202.409	.266
Cn	Equal variances assumed	.618	.433	1.271	203	.205
	Equal variances not assumed			1.271	202.372	.205



Dd	Equal variances assumed	3.969	.048	-2.121	203	.035
	Equal variances not assumed			-2.119	191.464	.035
Id	Equal variances assumed	1.301	.255	-.699	203	.485
	Equal variances not assumed			-.699	200.931	.486
Sd	Equal variances assumed	1.774	.184	.162	203	.872
	Equal variances not assumed			.162	199.030	.872
Cd	Equal variances assumed	.133	.716	-1.067	203	.287
	Equal variances not assumed			-1.067	202.959	.287
TotalD	Equal variances assumed	.072	.788	-1.661	203	.098
	Equal variances not assumed			-1.661	201.705	.098

Table 2a & 2b: The Natural Model  
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729(a)	.532	.515	.1664074

a Predictors: (Constant), TotalD, In, gender, Dn, enterGPA, Sn, Cn

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	.267	.334		.799	.425
	gender	.018	.024	.037	.726	.469
	enterGPA	.893	.064	.714	13.867	.000
	Dn	-.001	.001	-.108	-.875	.383
	In	.000	.001	-.030	-.237	.813
	Sn	-.001	.001	-.112	-1.186	.237
	Cn	.000	.001	.035	.263	.793
	TotalD	-.001	.000	-.065	-1.283	.201

a Dependent Variable: endGPA

Table 3a & 3b: The Adapted Model  
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.740(a)	.548	.532	.1635365

a Predictors: (Constant), Ca, TotalD, gender, enterGPA, Sa, Da, Ia

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	-.022	.280		-.077	.939
	gender	.012	.024	.025	.493	.623
	enterGPA	.863	.063	.689	13.659	.000
	TotalD	.000	.000	-.058	-1.178	.240
	Da	.002	.001	.181	2.130	.034
	Ia	.001	.001	.108	1.168	.244
	Sa	.001	.001	.117	1.505	.134
	Ca	.002	.001	.235	2.627	.009

a Dependent Variable: endGPA

Table 4a & 4b: The Difference Model  
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735(a)	.540	.526	.1645396

a Predictors: (Constant), Cd, Dd, gender, enterGPA, Id, Sd

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	.176	.244		.722	.471
	gender	.021	.024	.045	.900	.369
	enterGPA	.892	.062	.712	14.313	.000
	Dd	-.003	.001	-.161	-3.179	.002

Id	-.001	.001	-.042	-.845	.399
Sd	.001	.001	.030	.596	.552
Cd	.000	.001	.014	.269	.788

a Dependent Variable: endGPA

Table 4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Da	211	5	95	50.21	26.673
Ia	211	5	97	52.27	29.584
Sa	211	8	96	56.82	26.142
Ca	211	5	99	55.98	28.763
Dn	211	3	100	53.89	25.966
In	211	1	100	52.15	30.408
Sn	211	2	100	58.69	29.091
Cn	211	3	100	55.73	30.371
Dd	211	0	59	13.91	11.770
Id	211	0	56	14.89	13.015
Sd	211	0	70	16.66	12.994
Cd	211	0	56	14.97	13.275
TotalD	211	13	145	60.44	27.722
enterGPA	208	3.13	4.00	3.8153	.19117
endGPA	205	2.9024	4.0000	3.549414	.2380856
Valid (listwise)	N 202				