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# MOTIVATIONAL AND ATTITUDINAL FACTORS IN COLLEGE STUDENTS WITH AND WITHOUT LEARNING DISABILITIES

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**Abstract.** The current study examined the emotional resiliency, stress levels, locus of control and need for achievement in 17 college students with learning disabilities (LD) by comparing them with 17 of their peers without learning disabilities. Dependent variables included performance on the *Hall Resiliency Scale*, the *Nowicki-Duke Locus of Control Scale*, the *Need for Achievement Scale*, and a shortened version of a stress scale focusing on typical college stressors. Results indicated that students with learning disabilities obtained significantly higher resiliency scores and significantly higher scores on the *Need for Achievement Scale* than their counterparts without learning disabilities. These findings suggest that LD college students show a strong goal-directed approach and problem-solving initiative. Surprisingly, college students with LD self-reported significantly fewer college stressors than the students without LD. College students with LD also demonstrated a higher need for achievement than their college peers. No significant difference was found between the two groups with regard to locus of control. Both groups obtained moderate scores on the locus of control measure, suggesting realistic assessment of environmental events as these impact their lives.

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The term "learning disability" (LD) encompasses a relatively broad group of learning difficulties, which involve a disorder in one or more of the basic psychological processes presumed to be related to a central nervous system dysfunction. This disorder creates problems in speaking, listening, writing, reading, and/or mathematics, and reflects a severe discrepancy between apparent potential for learning and actual level of achievement (Lerner, 1997). Estimates indicate that more than 5% of school-age children have a learning

disability, and that their disability alone accounts for roughly half of the total number of students identified by public schools as needing special education (Hallahan & Kaufman, 1997).

Students with learning disabilities often experience a multitude of difficulties throughout their academic careers. Specifically, they face problems in motivation, attributions, self-esteem, and affective responses as well as limitations in strategic knowledge and self-monitoring that can negatively impact academics (Borkowski,

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1992; Borkowski, Carr, Rellinger, & Pressley, 1990; Borkowski, Johnston, & Reid, 1986; Borkowski & Muthukrishna, 1992).

Borkowski and his colleagues (Borkowski et al., 1990; Day & Borkowski, 1987) posit an integrated model of achievement, focusing on two distinct dimensions: metacognition and affective factors. Metacognition encompasses self-knowledge of learning strategies and the ability to use this knowledge in an efficient and effective manner. The affective component focuses on feelings of self-efficacy with factors of motivation, locus of control, and personal attributions (Borkowski et al., 1990). A bidirectional relationship exists between these factors, and a low perception of self-efficacy and negative attributions frequently undermine academics (Butler, 1999; Butler, Elashuk, & Poole, 2000).

Students with learning disabilities have been found to report lower levels of self-esteem, experiencing less emotional support, and having greater academic and personal-emotional adjustment dysfunctions than their peers without learning disabilities (Brinckerhoff, Shaw, & McGuire, 1993; Hill, 1996; Stolorow, 1995). Feelings of social isolation and not fitting in with others also present barriers (Hill, 1996; Reiff, Gerber, & Ginsberg, 1993). Limited protective factors that aid in resiliency coupled with adverse experiences may serve to restrict and weaken academic performance.

Little research has examined the impact of learning disabilities on resiliency (Spekman, Goldberg, & Herman, 1993). Resilient individuals are those who experience successful outcomes despite adverse experiences (Luthar & Zigler, 1991). Most research generally concedes that resiliency is affected by the opposing mechanisms of protective factors and stress. Level of stress is determined by risk factors and is usually associated with negative life outcomes. A learning disability is considered a risk factor associated with negative outcomes throughout the lifespan (Spekman et al., 1993).

Protective factors are personal characteristics that encourage individuals to overcome stressful life events. For example, Luthar (1991) found social expressiveness and social skills to be specific protective factors. Effective social problem-solving skills and effective personal coping strategies have also been identified as protective factors (Parker, Cowen, Work, & Wyman, 1990). In addition, stress-resilient children were found to have significantly fewer learning problems and higher achievement test scores than stress-afflicted children (Cowen et al., 1992). Students with learning disabilities are often lacking in these interpersonal coping mechanisms (Hill, 1996).

Locus of control has been extensively studied in terms of its role as a protective factor. For example, research has shown that an internal locus of control contributes to resilience (Blocker & Copeland, 1994; Parker et al., 1990; Wyman, Cowen, Work, & Kerley, 1993). In the bidirectional model proposed by Borkowski et al. (1990), when a student becomes more efficient in academic self-regulation, self-efficacy begins to change as well. This change in feelings of self-efficacy leads to more emphasis on self-regulation, which in turn leads to attributing successes to self-efforts and establishing a more internal locus of control with regard to academic successes. Individuals with a learning disability have been found to be more likely to have an external rather than an internal locus of control, which can negatively impact self-regulation strategies (Borkowski et al., 1990).

Need for achievement, or achievement motivation, is another focus of research. Need for achievement is the motivation to strive for success, to master difficult challenges, and to meet high personally generated standards of excellence (McClelland, 1985). For example, graduation rates for college students with learning disabilities have been associated with the level of personal motivation to succeed (Greenbaum, Graham, & Scales, 1995; Vogel, Hruby, & Adelman, 1993).

Given the problems faced by students with learning disabilities, it is little wonder that they have low rates of postsecondary school attendance (Blackorby & Wagner, 1996). In a longitudinal transition study of special education students, Wagner et al. (1991) found only 14% of students with LD had entered postsecondary schooling as opposed to 53% of students without an identified disability. At the five-year mark an increase was seen, with 31% of students with LD entering postsecondary school, but there was still a major difference in comparison to the 68% of students without a disability having entered.

Types of postsecondary schooling also differed dramatically between students with and without learning disabilities. For example, students with LD who pursued a postsecondary education were more likely to attend vocational programs and far less likely to attend four-year colleges and universities. Specifically, only between 1.8% and 3% of individuals with LD have been found to enter a four-year college or university one year after graduating from high school (Fairweather & Shaver 1991; Sitlington, Frank, & Carson 1990).

Researchers have examined external factors contributing to academic success in college students with learning disabilities such as high school experience, family status, and expectations of others (Farrell, Sapp, Johnson, & Pollard, 1994). However, limited research has compared college students with and

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without learning disabilities with regard to internal factors that protect college students from poor social and emotional outcomes. Given the few individuals with learning disabilities who pursue a postsecondary education in a four-year or university setting, the question arises as to how this subset of students compare with their nondisabled peers with regard to affective factors.

The purpose of the current study was to compare college students with learning disabilities (LD) to their college peers without learning disabilities (non-LD) in terms of the affective factors of resiliency, stress, locus of control, and need for achievement. We assessed a heterogeneous group of students with LD, with no distinctions made among types of learning disabilities. We were primarily interested in the actual performance and affective factors of students with learning disabilities in comparison to their peers without a learning disability.

## METHOD

### Participants

The participants were 34 undergraduate students at an eastern North Carolina university. Seventeen (7 women and 10 men; age  $X = 19.7$ ,  $SD = 1.75$ ) of the students had been identified by the Department of Disability Support Services (DDSS) as having a learning disability (a significant discrepancy between aptitude and achievement); 17 students (9 women and 8 men; age  $X = 18.5$ ,  $SD = 0.51$ ) had not been identified, or had ever received special services, as having a learning disability. The participants with learning disabilities were matched as closely as possible with their peers without a learning disability with regard to age, gender, and class standing.

Participation was voluntary. Students with a learning disability were contacted through the DDSS and apprised of the purpose of the study, and interested individuals were instructed to contact the experimenters if they wished to participate in the study. The students without a learning disability were obtained from undergraduate classes.

A questionnaire was developed by the researchers to gather information about the nature of the learning disability among the LD sample, to include the area of learning disability, age at identification, type of placement, and other (if any) identified exceptionalities.

The mean age at which the LD students were initially identified as having a learning disability was 7.29 years, with a median age of 7 years. Learning disabilities in written language were reported by 64.71% of the respondents, reading disabilities by 88.24%, auditory processing difficulties by 35.29%, and 11.77% reported a disability in mathematics. (Participants

reporting multiple areas of disability accounted for the overlap.) Participants were also asked if they had ever been identified as having co-existing exceptionalities. A comorbid diagnosis of attention deficit/hyperactivity disorder was reported by 29.41% of the participants with learning disabilities; in addition, 35.29% reported being identified as gifted. The non-LD group indicated no special educational diagnoses or placements.

Within the LD group, 70.59% had received some type of special education while in the public schools as follows: 8.33% were placed in a full-time classroom for students with learning disabilities; 33.33% were placed in a part-time resource classroom; and 58.33% had received special help within the regular classroom. While in college, 52.94% of the LD participants reported receiving some type of special help related to the learning disability, and 88.24% reported experiencing difficulties in college-related learning tasks.

### Instruments

A short form of the *Wechsler Adult Intelligence Scale-Revised* (WAIS-R) was administered to all participants in order to control for the effects of intelligence (Wechsler, 1981). According to Sattler (1992), combining the Vocabulary and Picture Completion subtests of the *Wechsler Adult Intelligence Scale - Revised* (WAIS-R) provides a valid screening for intelligence and yields a Deviation IQ score (DIQ). The validity coefficient for this short form is reported to be .88 (Sattler, 1992). The WAIS-R was used due to the established empirical database and the validity of the WAIS-R short form in comparison to the WAIS-III at the time the data were collected (1997-1998). The correlation between the WAIS-R and the WAIS-III full scale IQ scores is .93. It has been concluded that "The magnitude of these correlations suggests that the WAIS-III measures essentially the same constructs as does the WAIS-R" (Wechsler, 1997, p. 78).

The *Nowicki-Duke Locus of Control Scale* (Nowicki & Duke, 1974) was used to assess internal versus external attributions. The scale consists of 40 yes or no items that are summed to indicate the respondent's perceptions of externally controlled attribution. Higher scores indicate a more external locus of control whereas lower scores connote a more internal locus of control. The items were derived from the Nowicki-Strickland Internal-External control scale for children (1973).

In an analysis of 12 studies, Nowicki and Duke (1974) reported that reliabilities of the scale ranged from .74 to .86. The same study reported test-retest reliability of .83 over a six-week period. Validity of the scale was also supported with a correlation of .68 with Rotter's scale of internal-external control.



Mehrabian's *Need for Achievement (nAch) Scale* (Mehrabian, 1968; Mehrabian & Ksionzky, 1974) is a well-known measure of achievement motivation. The nAch scale consists of 26 questions following a Likert-scale format, with lower scores indicating a higher need for achievement. Separate scales were originally designed for male and female participants. The scale designed for male participants was used for all participants in the current study for reasons of parsimony; in addition, several questions on the female scale seemed outdated. For example, the female version could easily be replaced with the male version in today's culture (i.e., "I would rather that our women's group be allowed to help organize city projects than be allowed to work on them after they have been organized." vs. "I would rather work on a task where I alone am responsible for the final product than one in which many people contribute to the final product"). Concurrent validity measures have shown significant, although not high, correlation with *Herman's Achievement Motivation Scale* (Waters & Waters, 1976).

The *Hall Resiliency Scale (HRS)* is a 15-item self-report measure of resiliency based on autonomy, initiative, and trust (Hall, 1998a). The scale is based on the theoretical framework of Dr. Edith Grotberg (1995), who played a key role in the International Resilience Project with Children. As part of this project, Dr. Grotberg developed guidelines for interventions with children in order to build resilience, focusing on three areas: *I have* (external), *I am* (internal), and *I can* (skills).

The scale for this study (Hall, 1998a, 1998b) utilized a modification of these components. The Autonomy factor relates to a strong sense of self and one's abilities. The ability to marshal one's resources and apply them to the problem at hand is the focus of the Initiative factor. Finally, the Trust factor relates to having a support system and believing one can access this system in a time of crisis. The framework was modified to fit within a questionnaire for use with college-age through adult populations.

Hall (1998a) conducted a principal-components factor analysis of the scale with 502 adult participants and found an overall general factor of resiliency (30.8% of the variance) as well as three additional factors: Autonomy (11.5% of variance), Initiative (7.4% of variance), and Trust (7.2% of variance). Eigenvalues for the four factors were 4.61, 1.72, 1.15, and 1.07, respectively.

Test-retest reliability of the scale over a five-week interval (Hall, 1998b) yielded .80 for the overall factor. The test-retest reliability for the three factors was as follows: Autonomy: .89, Initiative: .69, and Trust: .67.

Repeated-measures ANOVAs were performed on the factor scores for the two administrations. The testing sessions and gender comprised the independent vari-

ables whereas the factor scores served as the dependent variables. No significant main effect was found for testing sessions, indicating consistent results across the two testing periods. Also, there was no significant effect for gender by testing interaction effect. There was, however, a significant gender effect for trust, with female participants having significantly higher trust scores than their male counterparts.

Clair and Hall (1998) found significant negative correlations between the resiliency factors and the *Beck Depression Inventory (BDI)*. The higher the scores on the resiliency factors, the lower the scores on the BDI, indicating an inverse relationship between depression and resiliency factors. In a recent study of college students in the United States and mainland China, Hall, Chia, Ren, Fang, and Wang (1998) also found significant negative correlations among the three resiliency factors and measures of stress. The factors associated with resiliency tended to be associated with lower self-reported stress. All three resiliency factors demonstrated significant negative correlations with stress measures for the U.S. sample, but only the Trust factor was significantly correlated for the Chinese sample suggesting cultural variations in coping mechanisms.

Finally, a short questionnaire designed specifically for college populations was used to assess participants' stress levels. Kanner, Coyne, Schaefer, and Lazarus (1981) developed the shortened scale based on the 10 most frequently reported hassles cited by college students.

## RESULTS

A one-way ANOVA was conducted comparing the WAIS-R Deviation IQ scores (DIQ) of students with and without learning disabilities. No significant differences were found between the two groups on the basis of intellectual ability,  $F(1, 32) = 1.72, p = .19$ . The means and standard deviations for the students with and without learning disabilities were as follows:  $M = 100.76, SD = 8.37$  and  $M = 97.12, SD = 7.85$ , respectively. Based on these results, intelligence was not covaried in subsequent analyses.

A MANOVA was performed comparing scores on each of the three resilience factors from the HRS (Autonomy, Initiative, and Trust) for the LD and non-LD groups. A significant main effect for group was found, Wilks'  $\Lambda = .69, F(3, 30) = 4.58, p < .01$ . The multivariate  $\eta^2$  based on Wilks'  $\Lambda$  was strong, .31. Followup univariate analyses indicated that the LD group obtained significantly higher scores on the Initiative factor than their non-LD peers,  $F(1, 32) = 9.75, p < .01, \eta^2 = .23$ . Significant main effects were not found for either the Autonomy or the Trust factors,  $F(1, 32) = 2.77, p = .11, \eta^2 = .08$ , and  $F(1, 32) = 0.86, p = .36, \eta^2 = .02$ , respectively.

**Table 1*****Means and Standard Deviations for Dependent Variables Between Groups***

	LD Group	Non-LD Group
Overall Resilience		
Mean	41.12	39.88
Standard Deviation	2.42	2.37
Autonomy Subscale		
Mean	13.53	14.12
Standard Deviation	1.13	0.93
Initiative Subscale		
Mean	13.77	12.35
Standard Deviation	0.90	1.46
Trust Subscale		
Mean	9.29	13.47
Standard Deviation	3.90	0.94
Locus of Control		
Mean	9.29	10.35
Standard Deviation	3.90	4.34
Stress		
Mean	28.35	33.00
Standard Deviation	4.42	3.91
Need for Achievement		
Mean	125.00	139.94
Standard Deviation	13.38	17.89

Next, three separate ANOVAs were performed with group classification as the independent variable and locus of control, stress, and need for achievement scores as the dependent variables. The ANOVA performed between the two groups on locus of control indicated no significant effect,  $F(1, 32) = 0.56, p = .46$ . The LD and non-LD group did not differ significantly based on their scores on the *Nowicki-Strickland Locus of Control Scale*. Locus of control scores for both groups indicated that some events were viewed externally and others internally, based on situational factors.

The ANOVA performed to assess between-group differences in perceived stress indicated a significant effect,  $F(1, 32) = 10.57, p < .01$ . The strength of the relationship, as assessed by  $\eta^2$ , was moderately strong, accounting for 25% of the variance of the dependent variable. Non-LD college students reported experiencing significantly greater feelings of stress than the LD students.

The last ANOVA was performed to assess the effect of classification on the need for achievement. Results indicated a significant difference in self-reported need for achievement as measured by the Mehrabian scale,  $F(1, 32) = 7.60, p = .01$ . The strength of the relationship, as measured by  $\eta^2$ , was moderate, accounting for 19% of the variance. The LD students had a significantly higher need for achievement than their non-LD college peers. Table 1 presents the means and standard deviations for both groups for dependent variables.

Pearson product-moment correlations were computed among grade point average (GPA), WAIS-III DIQ scores, locus of control, stress, need for achievement, and the Autonomy, Initiative, and Trust factors of the HRS. Results are presented in Table 2.

GPA and stress showed a significant inverse correlation with locus of control. As indicated, participants who saw themselves as being more responsible for the outcomes of their efforts had higher GPAs. This finding

is further supported by the significant relationship between achievement need and GPA. Having a sense that one can control the degree of success in one's life often translates into a positive result. The influence of locus of control on one's life perspective is clarified further in the correlation between perceived levels of stress and an external locus of control orientation. Feeling that factors beyond one's control are more important determinants of outcomes apparently leads to lower levels of effort applied to reaching a goal.

Significant correlations were also identified between self-reported need for achievement and the following additional variables, DIQ, GPA, LOC, and the resilience factor of Initiative. A more internal LOC was associated with higher self-reported levels of need for achievement. An external LOC was associated with decreased need for achievement.

### DISCUSSION

The current study examined the interrelationships among resilience, stress, locus of control, and need for achievement in college students with and without learning disabilities. The results indicated that the two groups differed significantly on resilience, stress, and need for achievement. However, there was no significant difference between the two groups on locus of control. Both groups indicated moderate locus of control scores, suggesting they evaluated situations from a realistic perspective while understanding they had more control in some situations and less in others.

The MANOVA indicated a significant effect for classification, with resiliency factor scores serving as the dependent variables. Followup analyses showed Initiative was significant but Autonomy and Trust were not. The participants with LD reported higher levels of initiative in their everyday problem solving where they took an active role in coming up with solutions to life events. These results suggest that college students with LD may demonstrate greater personal initiative, which helps them succeed in academic settings. In addition, Initiative correlated significantly with need for achievement, which fits with Borkowski's (Borkowski et al., 1990; Day & Borkowski, 1987) bidirectional theory of academic performance. Initiative and need for achievement are also likely to be related to a more general goal-directedness, which is cited by Spekman et al. (1993) as a protective factor for individuals with learning disabilities. In this case, initiative and need for achievement appeared to serve as specific protective factors for this sample of college students with learning disabilities.

The LD group also obtained significantly higher scores on the *Mehrebian Need for Achievement Scale* than the non-LD group. These results suggest that college students with learning disabilities are motivated by the need to achieve, a factor that may motivate them to apply to college in the first place and to put forth the effort necessary to be successful.

The effect of LD classification on need for achievement may be related to one of the findings of the Watt, David, Ladd, and Shamos (1995) study comparing successful

**Table 2**

*Correlations Among GPA, Deviation IQ, Locus of Control (LOC), Stress, Need for Achievement, Overall Resilience, Autonomy, Initiative, and Trust*

	1	2	3	4	5	6	7	8	9
1 GPA		.20	-.66**	-.10	-.46**	-.09	-.22	.08	-.10
2 DIQ			.01	-.03	-.46**	-.16	-.34*	.19	-.33
3 LOC				.44**	.41*	-.10	.13	-.18	-.16
4 Stress					.37*	-.25	-.04	-.20	-.27
5 NAch						-.27	.06	-.46**	-.03
6 Resilience							.51**	.77**	.73**
7 Autonomy								-.01	.24
8 Initiative									.37*
9 Trust									—

\* $p \leq .05$ .

\*\* $p \leq .01$ .

individuals who had experienced early life stress with successful individuals who had not experienced such stress. The early life stress group rated themselves higher on measures of determination, decisiveness, and self-assertion, variables that may be related to need for achievement. In addition, a study of college students with learning disabilities found that 37% of the students in the sample believed that their own tenacity and perseverance were the most helpful factors in their college success (Greenbaum et al., 1995).

The present study also found an association between one's need for achievement and initiative. Further, need for achievement was correlated with GPA and DIQ. These results indicated that high need for achievement was associated with better grades and higher scores on cognitive ability measures.

Classification was also found to be significant for stress. That is, the non-LD college students reported experiencing significantly greater feelings of stress than the LD students. One possible explanation for this finding may be that the protective mechanism of resilience counteracts the level of stress in the LD students. An alternative explanation may be that students with learning disabilities face more challenges and consequently develop more effective ways of coping with stress by the time they reach college. This explanation is supported by the Rochester Child Resilience Project, which found that resilient children rated themselves as using more adaptive coping techniques than stress-affected children (Cowen, Wyman, Work, & Parker, 1990). Another alternative is that students with learning disabilities may not perceive or interpret their levels of stress as accurately as students without learning disabilities.

Certain limitations of the current study need to be noted. The participants were from a southeastern university, which limits the generalizability of the results. In addition, recruitment of students with learning disabilities was strictly voluntary without any incentive to participate. Their college counterparts without learning disabilities were recruited from introductory psychology classes. The students with learning disabilities may have been a more motivated sample than either their college counterparts in the study or the general population of college students with learning disabilities. The sample of students with learning disabilities was also a very heterogeneous group with a wide variety of learning problems represented.

Suggestions for further research include the addition of a comparison group of individuals with learning disabilities not attending college. Expanding the sample size to increase power and allow for intra-sample statistical analyses such as age and gender differences within samples would provide important information as well. Further, broadening the study to examine other pro-

tective factors, and using a longitudinal design to follow students through college, would be a beneficial and logical extension of the current corpus of literature.

According to Palladino, Poli, Masi, and Marcheschi (2000), "When students begin to enjoy learning and realize that competence improves through their own efforts, students develop an internal locus of control, attribute successes and failures to effort, and experience feelings of self-efficacy" (p. 143). The students in the current study represent a very small group of individuals with learning disabilities who do enter college and are succeeding in their academic careers. They seem to be very similar to their peers without a disability in terms of affective factors and even report a higher push for achievement than their non-LD counterparts. Findings from the current study have implications for early intervention programs for students with learning disabilities. Targeting the areas of achievement motivation and resilience factors may increase positive outcomes for more students with learning disabilities.

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