A COMPARATIVE STUDY OF ADVANCED PLACEMENT AND LEARNING DIFFERENCED STUDENTS: COMPARING INTERNAL ATTRIBUTION AND CORRELATION TO HOPEFULNESS

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The goal of this research was to determine if there are significant differences in the attribution styles for positive and negative events between students of differing ability and the correlation of these attribution styles to hopefulness. The study examined twelfth grade advanced placement (AP N = 45) students and twelfth grade students with documented learning differences enrolled in college preparatory classes (CP-LD N = 14). Both groups of students came from high socioeconomic backgrounds. The students' internal attributions related to hopefulness were measured with the Hope Scale (Snyder, 1994) which assesses the constructs of agency (will), pathway (way), and produces an overall hopefulness score. Results indicate that AP and CP-LD students had similar measures of internal attribution for positive events, but significantly distinct measures of internal attribution for negative events. However, the AP students show no statistically significant difference from CP-LD students in their measures of agency, pathway, or overall hopefulness.
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CHAPTER 1
INTRODUCTION

Attribution

Educators, researchers, parents and policy makers all have an interest in understanding what factors lead some students to achieve greater success in the classroom than others. Researchers have studied various aspects of student success by examining the various relationships that exist between academic achievement and different psychological phenomenon, such as motivation, goal orientation, and attribution. All of these factors play an important role in understanding what leads some students to become more successful than others in the classroom. However, one must also consider that development does not end at graduation. In order for students to thrive throughout the lifespan, educators must not only be concerned with students’ performance and behavior in academics, but with patterns of behaviors and beliefs that contribute to overall well-being (Sayler, 2009). Students grow to become contributing adults. Patterns that shape an adolescent’s beliefs about themselves and their abilities often continue into adulthood and contribute to the way in which an individual views themselves, their world, and their ability to succeed in life (Snyder 1999).

The importance of well-being and quality of life has been documented as an important component of psychological health (Strack et al., 1991). Research indicates that individuals with lower satisfaction levels in their lives more frequently exhibit depression, low self-esteem, and maladaptive social interactions than do individuals with higher satisfaction levels (Funder and Funder, 1998).

Understanding the different ways in which learning differedenced (LD) students,
and students with high ability levels internalize feelings of positive and negative situations, and the internal hope structures that students develop about their ability to do well in life, is an important connection for educators to understand in order to develop individuals that will thrive not only in the classroom, but in life as healthy adults contributing to their own lives and to society as a whole in a positive way.

Attribution theory has been utilized as a tool to understand the reasons why people act the way they do. Attribution has been defined as a cognitive model for understanding human motivation (Weiner, 1974). Attribution theory focuses on understanding to what factors individuals attribute positive and negative experiences. Weiner’s (1985) work laid the foundation for understanding that students attributions of their academic success and failure were key to comprehending and developing student motivation and ultimately to student success.

A central component of attribution theory is that an individual’s behavior is driven by the need to comprehend and master his or her environment, thus allowing for the prediction of future events (Assouline et al. 2006). According to Weiner (1974), a three-stage process underlies an attribution. First behavior must be observed / perceived; second, behavior must be determined to be intentional; third, behavior attributed to internal or external causes. As this relates to the classroom environment, students consciously or subconsciously work to understand why some situations deliver academic success, and others result in failure (Assouline et al. 2006).

Of specific interest to researchers seeking to understand the components that contribute to student success and overall thriving are the studies dealing with internal and external attribution. Internal attribution refers to the attribution of events or
outcomes to internal factors, such as ability. External attribution refers to attribution of events or outcomes to external factors, such as luck, effort, or teacher favoritism (Assouline et al., 2006). Student perceptions of ability and effort are frequently measured to reveal attribution styles. Students that are gifted as well as students that have learning differences typically attribute success or failures to ability levels, or output of effort (McNabb, 2003).

Attribution theory is specifically of interest when applied to gifted and learning differenced students. Researchers have stated that gifted students frequently tend to attribute their positive experiences to their ability, yielding high scores for internal positive attribution (Heller and Ziegler, 2001). Interestingly, research by Dai et al. (1998), proposed the concept of “attribution asymmetry,” or the idea that highly able students attribute positive events and outcomes to their ability and effort (internal), but tend to strongly attribute negative events and outcomes to external factors. This would indicate that measured scores of attribution among highly able students would yield high levels of internal attribution for positive events, and low measures of internal attribution for negative events.

Gifted students tend to place high amounts of pressure on themselves and often develop maladaptive senses of perfectionism (Gottfried, 2004). When this occurs, gifted students tend to be motivated to achieve higher (positive) outcomes as affirmations of their ability (an internal attribution) (Bandura, 1982). When gifted students are less focused on measured outcomes in the classroom, but are more focused on mastery they may be more likely to engage in challenges and exhibit more balanced attributional patterns (Ames et al., 1977).
Conversely, learning differenced (LD) students tend to have different attributional styles for both positive and negative events and outcomes. Research indicates that LD students also attribute positive events and outcomes to internal factors, but at a lesser frequency than higher ability students. Learning differenced students also attribute their success to luck, teacher favoritism, or other external elements more frequently than do gifted students (Klassen, 2007).

Interestingly higher ability students overwhelmingly tend to attribute negative events and outcomes to external forces (Klassen, 2007) while LD students attribute negative events and outcomes to internal forces (Nunez et al., 2005).

Research conducted in the field of special education has demonstrated that students with LD tend to develop maladaptive attribution styles, low academic expectations, and low self-concepts. When LD students have these elements in place it is not uncommon for them to develop a sense of learned helplessness, (Chapman, 1988). Over time, learning differenced students tend to deeply internalize the belief that their academic failures are caused by lack of ability.

Learned helplessness in the academic realm can develop into depression, hopelessness, and a lack of motivation in other areas, (Nunez et al., 2005). When constantly faced with failure, LD students frequently develop the belief that no matter how hard they try, they will fail (Smiley & Dweck, 1994). This maladaptive attribution profile has also been called “pessimistic explanatory style” (Seligman, 1990).

Students with LD typically experience more social, emotional, and motivational problems than students without LD (Ayers, Cooley &Dunn, 1990). Since learning differenced students tend to attribute negative events and outcomes to internal factors,
LD students can develop maladaptive self-perception, and general doubt of their ability to succeed (Schunk, 1984).

In contrast, gifted students tend to be reinforced by success in academic activities, parents, teachers, grades, and their own beliefs that they are highly able learners. These students tend to attribute positive events and outcomes to internal factors, and negative events and outcomes to external factors. Consequently, academic self-efficacy, the beliefs about one's capabilities to learn or perform behaviors at designated levels, (Bandura, 1984) is usually higher for GT students than for LD students, (Gottfried, 2004). Consequently, GT students more frequently believe that they are able to achieve a desired academic result through a combination of hard work and ability. GT students with higher measures of self-efficacy typically have more self-regulated learning behaviors, choose more difficult subjects, and set higher goals for academic attainment.

Mello, (2008) established that adolescent expectations are important precursors of adult attainment. Adolescents who reported having high expectations academically and professionally had higher levels of academic and professional attainment and success as adults. While similar patterns of behavior and habits exist in successful adolescents and adults, self-perception also plays an important role in adult success and thriving. Further research by Hua (2002), with students who were both GT and LD illustrates that the development of career and personal fulfillment are strongly linked to the development of ability beliefs during adolescence.

Attribution orientations that students develop while they are in school will inform both their present and future lives, professionally interpersonally, and ultimately
emotionally (Udvari, 1996). Attribution orientations as they relate to the internalization or externalization of positive and negative events and outcomes appear to be connected to the construct of hope.

Hope

Hope is defined as a cognitive construct created from the joining of hopeful pathway thinking and hopeful agency thinking (Snyder, 1994). Snyder defines pathway thinking as the perceived strategies and routes for reaching goals, while agency thinking pertains to beliefs about one's capacity to begin and maintain progress toward a goal on a chosen path. Together, pathway and agency contribute to overall hopefulness.

In comparisons of individuals with high and low measures of hope, those with higher levels of hope demonstrate more positive thoughts about themselves and their abilities than those with lower measures of hope, as well as a stronger belief that they will achieve future goals. Individuals with lower measures of hope tend to have more negative emotions about their abilities to achieve their goals and more negative emotions associated with the pursuit of goals (Snyder, 1994). Snyder’s research indicates that students with lower hope have a higher frequency of anxiety and self doubt and tend to attribute negative outcomes to internal factors (Snyder, Lopez, Shorey, Rand, & Feldman, 2003).

Previous attribution research and Snyder’s findings would indicate a relationship between attributional style for positive and negative events and outcomes and measures of hopefulness. This research study was designed to
examine the relationship that exists between attribution and hopefulness for future life success and how these relationships are similar and different between highly able and learning differenced students.

A comparative study of these variables between two groups of exceptional learners will have implications for parents, teachers, and policy makers with regards to curriculum development, teacher feedback and extended training, student placement, and program development.

Ultimately, this research will be helpful in understanding the components that are involved in developing students of all ability levels that will leave the academic arena well prepared, and hopeful of future success in academic, professional, and personal endeavors.

Highly able students and learning differenced students hold different attributional orientations towards their academic successes. High ability students tend to attribute positive outcomes and events internally and negative events and outcomes externally. This orientation typically allows high ability students to internalize their success, and externalize their failures, developing a sense that they can reasonably expect similar results for the future, and a high measure of pathway, agency, and total hopefulness. Learning differenced students tend to attribute positive events or outcomes to internal factors also, but at a lower rate than highly able learners, and attribute negative events and outcomes to internal factors at a higher rate than highly able learners. The attributional profile of learning differenced students should theoretically result in lower measures of pathway and agency as well as lower total measures of hopefulness.
Fifty-nine twelfth grade students participated. These students attended a prestigious private school in the Miami area that served 40% White, 55% Latino, and 5% other ethnicities. The school actively markets itself to families reporting an annual income of $150,000 or higher. Tuition averages $17,500 per year. Although financial aid is available, awards are typically less than $2,000. Scholarships are not offered. Parents are extremely involved in the student’s academic and extra-curricular life.

The school utilizes the Iowa Basic Skills Test (IBST) as an assessment for incoming high school students. Based on national norms, the school’s internal average score on the IBST for incoming students is between the 6th and 7th stanine. Students in the high school are placed in one of three levels for academic subjects, College Prep (CP), Honors, and Advanced Placement (AP).

The levels are designed to facilitate appropriate challenge for the students at all three levels. The CP classes are college prep for students of lower academic ability as determined a score of less than 6th stanine on ITBS and who have been diagnosed with some a learning difference (dyslexia, dysgraphia, executive functioning, central auditory processing disorder, attention deficit hyperactivity disorder, computation disorders and other learning differences of non-specified type) by an external diagnostician using appropriate psycho-educational testing, no less than three years old. As a private school, the school in this study has chosen to identify students as learning difference and eligible for services if they have any of the learning differences indicated above and
is not necessarily compatible with state or district definitions of learning difference.

Honors classes are designed for students of average ability, or for students with a documented learning difference in conjunction with high stanine scores who do not wish to enroll in CP level classes.

AP – Advanced Placement classes, are reserved for students of highest academic ability. AP seniors who pass the AP exam enter college with credits earned in high school by participating in the AP program. AP classes at this school are highly competitive and require ISBT at the 90th percentile, as well as high GPA and teacher recommendation.

Samples were drawn from the CP-LD and AP groups. From the CP-LD group students with documented learning differences based on previous testing from external diagnosticians were asked to participate. Out of a possible pool of 20, 14 CP-LD students volunteered.

After anecdotal information was presented to the AP teachers concerning the signs of giftedness and high levels of talent, AP teachers were asked to recommend students that they felt fit the gifted and talented profile. From the total AP group of 59 students, 50 students who had been identified as highly able learners by AP instructors were asked to participate. Forty-five of those AP students volunteered.

Instruments

To assess attribution style, students were given the Children’s Attributional Style Questionnaire –Revised (CASQ-R, Thompson, Kaslow, Weiss & Nolen-Hoekema 1998). The questionnaire consists of 24 forced choice items, half of which address
positive outcomes and half addressing negative outcomes. Questions addressing positive outcomes and questions addressing negative outcomes include subscales of internal, stability, and globality. Items are scored with a 0 or 1 in a manner consistent with the original CASQ.

To assess hopefulness students completed the Hope Scale (Snyder et al., 1991). The scale contains 12 items answered on a 4-point Likert scale. The scale measures two constructs of hope: agency and pathways, with each having a score range of 4-16. Four items are included that measure agency, four items are included to measure pathway, and four items are non-consequential. The two measures of hope and agency are added to produce an overall Hope score.

Procedures

All students from the potential AP and CP-LD pools were given the appropriate consent forms in accordance with school policy and as dictated by the Internal Review Board of the University of North Texas. Of those that returned signed consent forms fourteen CP students volunteered \((N = 14)\) and forty-five AP students volunteered \((N = 45)\). Students were administered the two questionnaires during regular school hours by the researcher. All written instructions were also read aloud to ensure that students with learning differences clearly understood the instructions and test forms. Students utilized optical scanning forms to record their answers. Students were instructed to omit any identifying marks.

The forms were collected and labeled as CP-LD or AP. Each answer form was assigned a sequential number for each sample group. Information was manually
entered into computer based spreadsheets by the researcher. Scores were evaluated using computer spreadsheet functions to calculate standard deviations and means. A student worker assisted in verification of the sums of answer choices by scoring the optical scanning forms via grading machine. Scores were obtained by entering each student’s response to the four questions measuring Internal /Positive and the four questions measuring Internal/Negative. Each question’s scores for each sample group were summed and the sums added and divided by $N$. $t$-tests were used to calculate the significance of the data sets relative to the small sample size. $t$-test’s are indicated for use to determine the statistically significant difference between a set of averages. $t$-test were calculated by inputting the data for each group into an online $t$-test calculator (www.statisticsforphysics.com accessed March 15, 2009).

In order to further evaluate the statistical significance of the measurements despite the unequal sample sizes by examining the effect size, the data was analyzed by calculating the value of Cohen’s $d$ with an effect size calculator located online (effect size calculator accessed March 15, 2009).

Effect size measures the strength between two variables, and is often recommended for use when assessing data sets for groups with different sample sizes in order to ascertain if significant difference between the two data sets exist. 0.2 -0.3 is considered small effect, 0.5 is medium, and 0.8 – 1.0 is considered to be a large effect (Cohen, 1988).
CHAPTER 3

RESULTS

Given the particular interest of this study regarding internal attribution of positive and negative events, only positive and negative internal subscales from the CASQ-R were used in the analysis. On the CASQ-R subscale Internal/Positive, Advanced Placement students ($n = 45$) had an average score of 3.71 (scaling range 1-4 per student and a standard deviation of 0.5). CP-LD students ($n = 14$) had an average score of 3.07 (and a standard deviation of 0.5). Effect size as measured by Cohen’s $d$ was 0.96.

On the CASQ-R subscale Internal/Negative, AP students ($n = 45$) had an average score of 0.42 (score range 1-4 per student and a standard deviation of 0.5). CP-LD students ($n = 14$) had an average score of 1.21 (score range 1-4 per student and a standard deviation of 0.89). Effect size as measured by Cohen’s $d$ was 1.089. Scores were obtained by entering each student’s response to the four questions measuring Internal/Negative. Each question’s scores for each sample group were summed and those sums added and divided by $n$ to find the average. Scores indicate that CP-LD and AP students tend to have a high level of internal attribution for positive events (Figure 1).

Figure 1. Mean score comparison of positive and negative internal attribution between CP-LD and AP students.
Table 1

*Mean Score Comparison of Positive and Negative Internal Attribution*

<table>
<thead>
<tr>
<th>Measure</th>
<th>n</th>
<th>Positive $\bar{x}$</th>
<th>sd</th>
<th>$d$</th>
<th>Negative $\bar{x}$</th>
<th>sd</th>
<th>$d$</th>
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<tr>
<td>CP-LD</td>
<td>14</td>
<td>3.07*</td>
<td>0.5</td>
<td></td>
<td>1.21**</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>AP</td>
<td>45</td>
<td>3.73*</td>
<td>0.5</td>
<td></td>
<td>0.42**</td>
<td>0.5</td>
<td></td>
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</table>

Note. *$p < 0.0001$, **$p < 0.0004$

AP students have a slightly higher level of internal attribution of positive events and occurrences, but not one that is statistically significant (Table 1). When examining subscale scores for internal attribution of negative events, scores represent that CP-LD have a lower rate of internal attribution of negative events than they do of positive events. However, AP students have a significantly lower rate of internal attribution of negative events than CP-LD students. Effect size ($d$) indicates that the difference between the rate of internal attribution of negative events between AP students and CP-LD students is statistically significant.

Scores from the Hope Scale are divided into the subscales of Agency and Pathways. The two subscales were summed to form the overall Hope Score Advanced Placement students ($n = 45$) had an average Agency score of 12.95 (SD= 1.33) and an average Pathway score of 12.68 (SD= 1.54). Total Hope Score averages for AP were 25.64 (SD= 2.34).

CP-LD students, ($n = 14$) had an average Agency score of 12.64(SD= 1.94) and an average Pathway score of 13.43 (SD= 1.45). Total Hope Score averages for Total Hope Score averages for CP-LD were 26.97 (SD= 2.12) (figure 2). t-tests and effect size indicate that the scores are not statistically significant (table 2).
Figure 2. Mean score comparison of hopefulness means between CP-LD and AP students.

Table 2

Mean Score Comparison of Positive Hope Indices

<table>
<thead>
<tr>
<th>Measure</th>
<th>n</th>
<th>Agency $\bar{x}$</th>
<th>sd</th>
<th>Pathway $\bar{x}$</th>
<th>sd</th>
<th>THI $\bar{x}$</th>
<th>sd</th>
<th>d</th>
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<tr>
<td>CP-LD</td>
<td>14</td>
<td>12.64*</td>
<td>1.94</td>
<td>13.43**</td>
<td>1.45</td>
<td>26.07***</td>
<td>2.12</td>
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<td>1.33</td>
<td>13.0**</td>
<td>1.54</td>
<td>25.62***</td>
<td>2.34</td>
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</table>

Note. *p < .96, **p < .26, ***p < .53
CHAPTER 4
DISCUSSION

The purpose of this study was to determine if there are significant differences in the measures of internal attribution styles for positive and negative events between students of differing ability and the correlation of these attribution styles to hopefulness as measured with the constructs of agency (will), pathway (way), and overall hopefulness.

The literature supports the connections between attribution style and hopefulness, with higher internal attribution of negative events and outcomes typically correlating positively with lower levels of hopefulness (Seligman 1990). Literature also supports the idea that learning differedenced (LD) students typically have lower levels of hopefulness than do students of higher ability (Hua 2002).

The results of this study indicate that of the students studied, negative internal attributional styles were significantly different between students of greater and lesser academic ability. Advanced Placement students tend to have lower levels of internal attribution for negative events and outcomes, and CP-LD students have significantly higher levels of internal negative attribution. Both groups had fairly high levels of internal attribution for positive events and outcomes.

Based upon the results of attributional styles measured, and the previous research regarding hope, CP-LD students would have been expected to report lower levels of hopefulness than AP students reported. However, the difference resulting in CP-LD students and AP students’ scores for subscales, Agency, and Pathway, as well as their overall Hope Scores were not statistically significant.
It is interesting that among students with such different internal negative attribution profiles the hopefulness levels are strikingly similar. Work done by Waschbusch et al. (2003) indicates that there is a relationship between socioeconomic status (SES), hopefulness, and attribution style. Further research is necessary to determine if high SES tends to significantly improve hopefulness in those individuals with high levels of internal negative attribution. The students participating in this research also have high levels of parental involvement. Further research also indicates that parental involvement can serve as an important component in increasing student’s belief in their ability and positive outcomes (Bowen, 2007).

The implications of this research are important for those interested in the development of the whole child. When striving to develop an environment in which students of all abilities can thrive and develop positive patterns and high levels of hopefulness for the future, one must consider the variety of factors involved. Policy makers interested in the effects of poverty on individuals and on education would benefit from further research on the effect of high and low SES on student’s academic hopefulness, and total life thriving into adulthood. Additionally, school-based programs could attempt to replicate some of the protective measures indicated by high SES and parental involvement for students from homes without a high SES background or high levels of parental involvement.

Limitations

Limitations to this study must be noted. Small student pools resulted in small
sample sizes which may be troublesome to replication of the results. Although t-tests and effect size were used to make comparisons despite the disparity of samples, sample size disparity was a limitation. In future studies of comparing the measures compared in here, more equal sample sizes would be advised. Further, the students participating in this study are from a very specific and homogeneous economic background. Further research with diverse student populations would be useful.

Additionally, both measures used were self-report mechanisms, which require adolescents to cognitively process emotional responses to hypothetical situations. The CASQ-R does not include a measurement of external attribution, which would have been useful to compare to the levels of internal attribution. In future research an instrument that measures internal and external attribution would be advised for use.

In summary, this research has indicated a distinctly lower level of internal negative attribution for high ability students, and a distinctly higher level of internal negative attribution for low level students when compared against each other. In this instance, both student groups had similar measures of hopefulness, indicating that another variable, perhaps high SES status, is inflating hopefulness of the students beyond expected measures.
REFERENCES


