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# The Effect of Locus of Control and Stability on Academic Achievement in Eighth Grade Students From North Central West Virginia: A Comparative Approach

Tasneem Edmonds

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Running head: THE EFFECTS OF LOCUS CONTROL AND SATBILITY

The Effect of Locus of Control and Stability on Academic Achievement in Eighth Grade  
Students From North Central West Virginia: A Comparative Approach

Thesis submitted to  
The Graduate College of  
Marshall University

In partial fulfillment of the  
Requirements for the degree of  
Masters of Arts  
Psychology

Submitted by

Tasneem Edmonds

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Abstract

The Effect of Locus of Control and Stability on Academic Achievement in Eighth Grade

Students From North Central West Virginia: A Comparative Approach

Tasneem Edmonds

Marshall University

The purpose of this study was to learn more about how locus of control and stability affect academic achievement. Eighty-three eighth grade students at Cheat Lake and Westwood Middle Schools were given two questionnaires that took between thirty and forty-five minutes to complete. The study was conducted in a classroom environment during regular school hours. Both student assent and parental consent were collected. Confidentiality and voluntary participation were explained to all students. After the data from the questionnaires were obtained, comprehensive grade point averages and SAT 9 scores for each student from the previous year were collected. This GPA and SAT 9 data were compared to the scores obtained from the questionnaires. This study found that overall, internal students had higher GPA's than external students; however, males who were neither stable nor unstable scored lower on SAT 9 scores and GPA's regardless of whether they were categorized as internal or external.

## CHAPTER I

### **Introduction**

In North American society, education is of utmost importance. Educators and parents want their children who will ultimately be the future leaders, educators, and professionals to prosper academically. It is possible that parents and educators can increase the likelihood that children will attain higher levels of academic achievement by encouraging individual characteristics that have been associated with academic success. Teachers should implement classroom techniques that foster an internal locus of control, a characteristic that research has identified to be associated with academic success (Nunn & Nunn, 1993). One such suggestion provided in this research stated that teachers should emphasize the relationship between effort and performance outcome. Classroom opportunities that promote success, self-exploration, and self-control influence an internal locus of control and student achievement (Nunn, 1993).

#### *Statement of the Problem*

Research examining individual characteristics, such as locus of control and stability, can help educators get a better understanding of how individual characteristics can influence academic performance. This research will be examining how two characteristics, locus of control and stability, influence academic achievement by collecting self-report questionnaires that measure these two characteristics and then identifying how these characteristics influence academic achievement as defined by cumulative grade point averages and standard achievement test scores. Identifying how locus of control and stability influence academic achievement will help further guide research to study techniques that would encourage individual characteristics that are

essential for academic success. A description of Attribution Theory will identify terms mentioned above, such as effort, internality, and locus of control, and explain how they play a significant role in the context of academic achievement.



## CHAPTER II.

### **Review of Literature**

#### *Attribution Theory*

Attribution Theory attempts to identify how students explain the reasons for their success or failure. People tend to ask themselves why certain things occur and as a result they search for the causes. Particularly, in an educational context, individuals may ask themselves: “Why did I do so poorly on the science test?” or “What caused me to make an A on my social studies test?” Weiner (1994a) contends that there are three main components related to Attribution Theory, locus of control, stability, and responsibility.

#### *Locus of Control.*

The first component is locus of control. Locus means location and locus of control deals with whether persons believe that causality lies within themselves (I succeeded because I worked hard) or outside of themselves (I succeeded because I was lucky). Kaiser, (1975) found that individuals with an internal locus of control attributed their grades on a test to internal reasons while externals’ attributions were related to external factors. In addition, most research focusing on locus of control has found that children who have an internal locus of control tend to have higher levels of academic achievement than those with an external locus of control (Findley & Cooper, 1983).

#### *Stability.*

Stability is the second component of attribution theory. Some aspects of causality can be changed or manipulated by a student while others cannot. For example, ability and task difficulty are stable because they cannot be easily changed or manipulated. On the other hand, effort and luck are unstable because students’ amount of luck or effort is very likely to change from one situation to the next. This component is important to

academic achievement because students' perceptions regarding stability can help them to conceptualize how they think they will perform in the future. In general, if a student believes that previous successes or failures on tasks were a result of stable factors, they will be more certain about their expectations for future performance on similar tasks. However, if students believe unstable factors were responsible for their previous successes or failures, they will be less sure about future performance because they know that there could be shifts in performance due to changes that could occur with these unstable factors. Therefore, it is easier to predict future successes based on ability than on effort (Weiner, 1994a).

Although stable factors may sound more desirable because they help students feel more aware of future outcomes, this is not always the case. For example, Weiner, Cook, Heckhausen, and Meyer (1971) found that high attributes to a stable factor that caused failing decreased individuals' beliefs that they will be able to succeed in the future. When children believe that failing is due to a stable factor, they are more likely to think that they will probably fail in the future, and therefore, they are less motivated to try. On the other hand, attributions of failure to unstable factors such as luck or effort facilitated continued performance because students don't necessarily believe that they are doomed to failure in the future. Their research also found that attributions of perceived outcome related to unstable factors tend to mediate persistence in the face of failure. However, stability can also be positive for a child's perceptions of future performance, particularly if he or she has high ability. If children believe that they succeeded in a task due to high ability, then it is likely that they will expect to succeed in the future based on this perception of ability. In addition, Weiner (1994) stated that children who believed that

their success was due to ability, experienced feelings of competence and pride. Most research on stability has focused on students' expectations regarding subsequent performance (Weiner, 1973; & Weiner & Kukla, 1970). However, the impact of stability features on actual academic performance has not been studied in much depth. It will be beneficial to see if stability has an overall impact on academic performance.

*Responsibility.*

Responsibility is the third component of attribution theory. Students are responsible for how much effort they put out just as teachers are responsible for the difficulty of the task. However, students are not responsible for luck or ability because these aspects of causality are not subject to volitional control.

*Achievement.*

Weiner (1979) suggests that in achievement-related settings the most common attributes that shed light on the research questions proposed can fall under four categories including ability, effort, task difficulty, and luck. Ability and effort represent an internal locus of control while task difficulty and luck represent an external locus of control. In the same manner, ability and task difficulty are stable attributes while effort and luck are unstable attributes. Weiner (1972) provides descriptions of how individuals determine causal ascriptions for each of these four categories. First, Weiner states that "general ability is inferred from the number, percentage, and pattern of success experiences at prior achievement activities, considered in conjunction with the perceived difficulty of the attempted task". In addition, specific task ability may be inferred by the amount of previous successes or failures on the specific task or tasks that are similar to a given task. For example, if students have had many successful experiences with algebra, it is likely

that they may have a high perception of ability for geometry as well since it is a similar task. Second, effort refers to perceptions related to how hard individuals think that they have tried on any given task. Individuals often use performance outcome information to develop perceptions related to effort. In most cases, if students succeed on an outcome, it is likely that they believe that this outcome is a result of hard work. Third, task difficulty is usually determined by examining how others did on a task. For example, if more than half of the class failed a task, a student may perceive that task as being difficult.

However, if almost all students succeed at a task, it will most likely be considered as easy. Finally, ascriptions of luck are generally developed by examining the basic structure of a task or by examining unique events. If a task is considered to be independent and random, individuals usually ascribe luck as the source of causation for an outcome. Such tasks include flipping a coin, playing the lottery, or guessing a number. Unique events, such as experiencing a success after many failures or hitting a homerun after striking out ten times, are usually thought to be determined by luck.

Weiner (1972) contends that attribution errors commonly occur because individuals tend to overestimate randomness and the fluctuations of events.

Frieze (1976) completed a study that supported the notion that ability, effort, task difficulty, and luck are common descriptions of causality in academic settings. This study described a scenario in which an individual either succeeded or failed at a given task. Participants were given very limited information about the situation such as “You received a very high score on an exam”, and were then asked what additional information should be provided before a decision regarding causality be made. For academic related situations, the majority of the participants requested information related to ability, effort,

task difficulty, and luck. Furthermore, Weiner (1979) found that of these four factors, effort and ability tend to have the most salient effect on performance. For example, when teachers and students are given real or imagined events and they are then asked to attribute what caused a success or failure related to these events, they are able to come up with many attributions. However, when reviewing the attributions that are given, the ones that come up frequently and also appear to be the most salient and general are effort and ability. The following section will examine how internal and external locus of control influence academic performance. Results from previous studies which have examined these variables will be introduced in greater depth.

#### *Locus of Control and Academic Achievement*

Previous research suggests that children who believe they have control over their academic success are more likely to have higher achievement than students who believe they have no control over their academic success (Messer, 1972; Hjelle, 1970; & Findley & Cooper, 1983). Rotter (1990) defines this sense of control or locus of control as the extent to which an individual believes that he or she has control over an outcome. If an outcome is believed to be dependent on personal behavior or attributes such as effort or ability, it is considered to be internal. On the other hand, if an outcome is believed to be dependent on factors outside of the person such as luck, fate, or circumstance it is considered to be external. For the proposed study, locus of control will be one variable considered in assessing how children's attributions influence academic performance.

Studies suggest that both internal and external loci of control are important predictors for academic achievement (Crandall, Katvosky, & Crandall, 1965; Hjelle, 1970; & Messer, 1972). For example, kids with an internal locus of control have been

found to do better academically (Stipek, 1980). Hjelle (1970) found that undergraduate students with an internal locus of control have higher GPA's. Messer (1972) also found that 4<sup>th</sup> grade students with an internal locus of control had higher grades than students with an external locus of control. Likewise, Maqsud (1993) conducted a study based on Eysenck's research that has concluded that personality factors; such as locus of control; and intelligence play important roles in meeting the goals of school. He studied 7<sup>th</sup> grade students from Botswana and he found a negative relationship between externality and academic achievement and a positive relationship between internality and academic achievement. Verma, (1996) found that even students who had a low internal locus of control still did better in school courses than students with a high external locus of control. In summarizing the results, the author concluded, as did Masqud (1993), that students with an internal locus of control possibly do better academically because an internal locus of control is associated with greater use of personality relevant information that would foster superior academic performance regardless of course content. Another possible explanation may be that students with an internal locus of control have faith in their own efforts and utilize effective study habits.

Some studies have found that although internal locus of control may predict grades reliably, it does not predict academic achievement related to standard achievement test scores as well. It seems that locus of control predicts GPA better than standard achievement test scores because GPA takes into account more of the motivational factors associated with internality than does standard achievement test scores (Crandall, Katovsky & Crandall, 1965). In support of this hypothesis, Messer (1972) completed a study on 78 fourth-grade boys and girls. This study found that children with an internal

locus of control had higher grades but locus of control did not seem to have an effect on standard achievement test scores. On the contrary, Findley and Cooper's (1983) findings were contradictory to these previous results. They found that locus of control had a stronger prediction for standardized tests that don't take into account motivational factors. They concluded that this finding may be due to the fact that teachers possibly give higher grades to students for factors unrelated to internality such as how much the teacher likes the student.

Not all studies have found such a distinct relationship between internality and successful academic performance. One study found that if a purpose for the assignment is given, externals tend to do better on a task than internals (Dollinger & Taub, 1977). However, if no purpose is given, internals show a higher level of performance than externals. Although locus of control is considered to be one important variable that influences academic performance, Simon (2000) was unable to predict academic achievement when the prediction was based solely on academic locus of control. Wang, Kick, Fraser, Burns, & Thomas (1999) also found that locus of control along with self-esteem and parental occupation predicted students' educational and occupational attainment. These findings suggest that factors other than locus of control can influence academic performance.

Even though all the research does not find that locus of control single handedly influences academic achievement, some research has found that locus of control may have an indirect influence on academic performance. Therefore, knowledge about a child's locus of control can still be beneficial in an academic setting. For example, some studies have found that an internal locus of control fosters personality characteristics that

are beneficial to academic performance (Verma, 1996; Masqud, 1993). The following research findings exhibit this indirect influence. Janssen & Carton (1999) found that college students with an internal locus of control do not procrastinate as much as students with an external locus of control, regardless of task difficulty. Dollinger (2000) found that internals surpass externals in the knowledge they possess about trivial information about a class that is related to academic success. This includes information such as how many points are needed in order to obtain an A in the class or information related to how to contact the professor. Individuals classified as high in achievement motivation are also more likely to attribute success to internal processes (Weiner & Kukla, 1970). Stipek (1980) also postulated that students who are internal may excel academically because they feel responsible for their performance and therefore take a more active role in the learning process.

#### *Stability and Academic Achievement*

Attributions related to locus of control can either be stable or unstable (Weiner, 1979). As mentioned earlier, ability and task difficulty are stable because they generally remain unchanged; however, effort and luck are unstable because they do not necessarily remain the same in every circumstance. For the proposed study, stability is the second factor that will be considered in assessing how childrens' attributions influence performance on standard achievement test scores and GPA's. Previous research concluded that more research is needed to conceptualize what seems to be a relationship between school achievement and perceptions related to why children believe that they succeed or fail (Frieze and Snyder, 1980). In this study, both locus of control and



stability will be considered when assessing performance. The interaction effect of stability and internal/external locus of control will be of particular interest.

Most students attribute causality to internal factors related to ability and effort. Thus, both stable and unstable factors are commonly used attributions among children. However, this study also found that students who are high in ability tend to have more of an internal locus of control (Frieze and Snyder, 1980). Internals tend to attribute both ability and effort to successes and failures. The following paragraphs will identify how children's perceptions of stable or unstable attributions are related to academic achievement.

Ascriptions of stability factors related to past performance can greatly influence students' expectations about future academic performance. Weiner's (1979) theory of motivation proposes that when individuals attribute success or failure to stable factors on a given task, they are more certain about how they think they will do in the future on a similar task. If ability or task difficulty are perceived as the primary reasons for success, they will expect to succeed in the future on that particular task. In the same respect, if ability or task difficulty are perceived as the primary reasons for failure, they will expect to fail in the future on that particular task. These expectations are not as strong when individuals attribute success or failure to unstable factors such as effort and luck. Weiner, Nierenberg, and Goldstein's study (as cited in Weiner, 1979) found that after giving individuals a chance to experience repeated successes, individuals who attributed these successes to stable factors including ability and task ease had stronger expectations for future success on this task than individuals who attributed their successes to unstable factors such as effort and luck.

Research has also found this to be particularly evident when children make stability attributions associated with failure. Weiner, Cook, Heckhausen, and Meyer (1971) subjected students to a situation in which they would experience repeated failures. They found that high attributes to stable factors associated with failure decreased expectations for future success. However, attribution of failure to unstable factors including both luck and effort facilitated continued performance and expectations for future success. This most likely occurs because students know that they can change unstable factors such as effort but there is not much they can do to change their level of ability. For example, if a student believes that failure is due to low ability, they will expect to continually fail because there is no way they can alter their ability. However, if a student believes that failure is due to low effort, they know that they can try harder in the future and experience greater success. Weiner (1979) reported that “since ability is stable and not subject to volitional control, ascription of nonattainment of a goal to low ability results in giving up and the cessation of goal-oriented behavior.”

Volitional control refers to something that can be voluntarily controlled by the individual. Weiner (1994) completed a review of previous research on ability and effort and concluded that if children believe that their failure was due to lack of ability, the worse their future performance will be; however, if children believe failure was due to lack of effort, the more their performance will improve. Since children cannot willfully control their level of ability, they feel hopeless when they perceive their failure to be due to lack of ability and therefore tend to give up and do worse on similar tasks in the future. However, since children know that they can change the amount of effort they expend,

they typically increase the amount of effort expended on future tasks if they perceive lack of effort to be responsible for prior failure on these tasks.

It seems that if children believe that level of effort is responsible for failure, they are more motivated to do well in the future. Weiner & Kukla (1970) found that children high in achievement motivation are more likely to attribute failure to lack of effort and, as a result, this motivates them to participate in continued goal activity. Weiner & Peter (1973) also found that children high in achievement motivation believe that success is primarily due to hard work while failure is primarily due to lack of effort. It is possible that an emphasis on effort may motivate children to be more successful because effort has been shown to facilitate persistence and continued goal activity.

#### *Authority Figures' Perceptions of Stability*

Teachers and parents also treat the stability features differently, especially with respect to effort and ability. Research seems to demonstrate that parents and teachers are aware that students have control over their level of input (effort) but not their ability. It appears that parents judge their children based on the amount of effort they expend (Weiner, 1994a). Individuals who do not try, but are high in ability, tend to have the harshest punishments. Weiner's (1994a) research demonstrates how reward or punishment is determined by the amount of effort expended along with the outcome (amount of items correct). Researchers asked college students to act like school teachers and evaluate students' performance based on effort expenditure, level of ability, and their exam performance (Weiner and Kukla 1970). They found that in general, success is more rewarded than failure, low ability is looked at more favorably than high ability, and high effort is rewarded more than low effort. Therefore, socialization on the part of

teachers and parents may play a role in influencing the development of locus of control in children.

In reviewing previous research, Weiner (1994a) also found that authority figures give the most rewards to successful individuals who are low in ability and high in effort. Individuals who put out sufficient effort are rewarded the most and punished the least. In contrast, the harshest punishment is given to unsuccessful students who are high in ability and low in effort. This research noted that it appears that failure due to a lack of effort elicits anger by authority figures while failure due to a lack of ability elicits sympathy. Weiner (1979) found that if authority figures feel that failure is due to lack of effort, they will withhold help, but if they feel that failure is due to lack of ability, they will offer help. It is possible that teachers are aware that encouraging students to put out more effort will encourage future achievement strivings. Nicholls (1976) also stated that,

the tendency, on the part of socializing agents, to reward effort can be seen as a means of maintaining acceptance of achievement goals in the many people who, because of low self-concepts of ability, will not see themselves as likely to gain the large rewards contingent on outstanding performance, and self-reward for effort can be seen as an expression of basic conformity (virtue) in an achievement oriented society. (p.313)

On the other hand, Weiner and Peter (1973) found that following the age of twelve, lack of effort becomes less punished and achievement outcomes becomes a more important determinant of reward or punishment. For example, if a child made a high score on a test but they did not expend much effort, they would still get rewarded even though their intentions may not have been good. It is apparent that performance is also

evaluated. In general, successful performance is usually rewarded while unsuccessful performance is usually punished.

### *Children's Perceptions of Stability*

It is ironic that students would rather fail due to lack of effort than lack of ability although it is what is most punished by authority figures (Weiner, 1994a). Nicholls (1976) completed a study on perceptions of ability versus effort on undergraduate students and he also found that this group would prefer to have high ability. Furthermore, he found that students who perceived themselves to have high ability get more pride out of believing success was a result of high ability while students who have a low self-concept of ability would feel more pride out of perceiving their success is due to effort. In addition, although teachers and parents try to encourage the use of effort, the largest rewards in our society are given on the basis of outstanding performance which is based primarily on ability.

Although children may prefer to have ability, Little, Stetsenko, and Maier (1999) found that children are cognizant of the importance of effort. In their cross sectional and mixed longitudinal study that looked at action-control beliefs of Moscow children in grades two through eleven, they found that effort was rated as the most important determinant of school performance. This finding stayed constant throughout each grade. In addition, they found that the importance of ability increased with age. Weiner, Cook, Heckhausen, and Meyer (1971) also found that the greater the tendency for success to be attributed to effort, the greater the self-reward.

In reviewing previous research, Weiner (1994b) has also found some interesting emotional consequences based on perceptions of stability. He found that children who

perceive failure as due to lack of ability experience shame, whereas children who perceive failure as due to lack of effort experience guilt. Weiner (1994a) suggests that learning and performance may be improved by making tasks meaningful and novel. Children should also be able to make decisions about tasks because this encourages them to feel responsible for their performance. In general, since children prefer to have high levels of ability over effort, professionals need to make each task motivating so that children will want to expend effort.

### *The Proposed Study*

The primary purpose of this study was to investigate the attributions of causality and how these attributions affect academic performance. The researcher was most interested in determining if an interaction between locus of control and stability influenced academic achievement. This study was also interested in students' answers to questions such as "What caused me to succeed or fail?" or, "Why did I do so well on the last reading test?" This study investigated how stable and unstable responses to such questions can influence performance. Although there are several attributional responses related to stability that may appropriately answer these questions such as mood, interest in task, and the effectiveness of the teacher, for the purposes of this study, the researcher focused on what the literature found to be the four most common causality attributes prevalent in educational contexts. These stability factors include ability, effort, task difficulty, and luck. The researcher was interested in how both stability and internal/external locus of control can influence academic performance since most of the research completed on locus of control has either looked exclusively at the stability

dimension of locus of control and how it relates to academic performance or how internality versus externality relates to academic performance.

*Definition of Variables.*

The first independent variable, internal locus of control, refers to the extent to which individuals believe that an outcome is dependent on their own behavior (effort) or personal attributes (ability) versus the degree to which they believe that an outcome is dependent on luck, chance, or circumstance. For the proposed study, internal locus of control was operationally defined by all items on the Nowicki-Strickland Locus of Control Scale for Children that correspond with internal responses. In the same manner, external locus of control will also be operationally defined by items on the Nowicki-Strickland Locus of Control Scale for Children that correspond with external responses. The second independent variable, stability, refers to the extent to which a causality attribute can be altered. In the context of the proposed study, effort and luck was considered unstable because these attributes are easily altered. On the other hand, ability and task difficulty will be considered stable because these attributes are difficult to alter. Stability was measured by giving adolescents a 20-item questionnaire that contained 12 success and 8 failure academic situations. The students rated each of the following: ability, effort, task difficulty, or luck on a Likert scale from one being strongly disagree to five being strongly agree based upon what they perceive to be most responsible for the success or failure situation.

*Dependent Variables.*

The dependent variable, academic achievement, was defined by cumulative grade point averages (GPA's) from the first semester of eighth grade and Stanford nine

achievement test scores (SAT 9). Therefore, academic achievement was defined by both a criterion referenced (GPA) and a norm-referenced measure (SAT 9). Each student's cumulative GPA from the previous semester was obtained. Stanford nine achievement test (SAT 9) scores were obtained from the student's previous year. Stanford nine achievement tests are norm-referenced tests that evaluate reading, language arts, spelling, mathematics, science, and social studies in grades 1 through 9. In West Virginia, these tests are given each year; however, the state only collects data for grades 3 through 11. These tests are specifically designed to measure each student's year-to-year progress (<http://www.just4kids.org/states/WestVirginia.htm>).

*Control Variables.* Since previous research has found that both age and gender have an impact on locus of control, they are both considered to be confounding variables. In the current study, age and gender effects are not expected; however, statistical analyses will be run to determine if they do in fact influence locus of control.

Most of the research on locus of control and performance has been completed with younger children in grades one through six (Clifford & Cleary, 1972; Nowicki & Duke, 1992; Stipek, D., 1980). The fact that most research on locus of control has been done primarily on younger children is somewhat ironic because previous research has found that children become more internal as they age. Likewise, locus of control measures have been found to be less reliable for younger children. For example, Nelson, Knight, Kagan, and Gumbiner (1980) found that sixth grade students tend to have a more internal locus of control as compared to fourth and fifth grade students. In addition, Weiner and Kukla (1970) concluded that children in the third and fourth grade may not have fully developed stabilized attributions for success or failure. In developing



the Nowicki-Strickland Locus of Control Scale for Children, Nowicki and Strickland (1973) found that older children had higher reliability estimates on that instrument. Test-retest reliabilities were obtained at three grade levels, given six weeks apart. The test retest for third grade students was  $r = .63$ ,  $r = .66$  for the seventh grade, and  $r = .71$  for the tenth grade. This study will be interested in looking at eighth grade students since prior research has shown that children become more internal as they age, most research has focused on younger children, and reliability estimates on the chosen measure of locus of control to be utilized in the study are higher for older children.

Research has also found significant gender differences in how locus of control affects performance. Females are more likely to be internal with regard to failures whereas males are more likely to associate internality with successes (Messer, 1972; Crandall, Katovsky & Crandall, 1965). Most research has found that there is a stronger relationship between locus of control and academic achievement in males. For example, Nowicki & Roundtree (1971) found that achievement measured by the California Achievement Test (CAT) was only related to internality in males. They also found that high IQ's in males was more related to an external locus of control. Neither of these findings was true for females. Also, Clifford & Clearly (1972) found that girls' performance is better predicted by IQ than by locus of control, but for boys, locus of control seems to be the better predictor of performance. Weiner & Kukla (1970) also reported that relating achievement and locus of control is difficult to do with females due to conflicting results.

Not all studies have found significant differences between males and females. Janssen & Carton (1999) found no differences in mean scores of locus of control when

comparing males and females. Wang, Kick, Fraser, Burns, & Thomas (1999) found that the relationship between self-esteem, locus of control, and educational and occupational attainment did not differ for males and females. Findley & Cooper (1983) reviewed 75 studies looking at how locus of control influences academic achievement and they found that 93% of studies concluded that internality was positively correlated with academic achievement for both boys and girls. However, in these studies; there were stronger relationships between locus of control and academic performance for boys. It is possible that the gender gap has lessened over the years.

### *Hypotheses*

#### *Locus of Control and Stability.*

Ha 1: Locus of control and stability affect GPA.

Ho 1: Locus of control and stability do not have a statistically significant affect on GPA.

Ha 2: Locus of control and stability affect SAT 9 scores.

Ho 2: Locus of control and stability do not have a statistically significant affect on SAT 9 scores.

Ha 3: An internal locus of control has a greater positive relationship to academic achievement defined by GPA than to academic achievement defined by SAT 9 scores.

Ho 3: An internal locus of control does not have a statistically significant greater positive relationship to academic achievement defined by GPA than to academic achievement defined by SAT 9 scores.

#### *Gender.*

Ha 4: There are no gender differences with respect to how locus control affects GPA .

Ho 4: There are statistically significant gender differences with respect to how locus of control affects GPA .

Ha 5: There are no gender differences with respect to how locus of control affects SAT 9 scores .

Ho 5: There are statistically significant gender differences with respect to how locus of control affects SAT 9 scores .

Ha 6: There are no gender differences with respect to stability on GPA .

Ho 6: There are statistically significant gender differences with respect to how stability affects GPA .

Ha 7: There are no gender differences with respect to how stability affects SAT 9 scores.

Ho 7: There are statistically significant gender differences with respect to how stability affects SAT 9 scores .

## CHAPTER III

### Method

#### *Participants*

The sample consisted of 83 eighth grade students from two schools located in North Central West Virginia. There were 35 males and 48 females. The mean age in years for the students was 13.5. The sample consisted of primarily Caucasian students. The two schools were a bit different in terms of socioeconomic status. One school, which will be referred to as school number 1, consisted of students primarily from working and middle classes, while the other school, which will be referred to as school number 2, consisted of students from primarily middle and upper classes. There were 89.2% of students that were from the former school and 10.8% of students were from the latter school. A total of 91 students participated in the study but only 83 were used due to missing data. Two of the students had recently moved from a different school and the school did not have access to their achievement test scores. The researcher was unable to find SAT 9 and GPA information for one student. The remaining four students who were excluded failed to fill out more than one question on one of the two questionnaires.

A sample of convenience was used to establish the participants for the investigator. Permission was obtained from the Board of Education, the principals of both schools, parents, and students before students were permitted to participate in the study. Further IRB approval was obtained from both Marshall University and West Virginia University.

Eighth grade students were chosen because measures of locus of control have found that stronger test-retest reliability and internal consistency are obtained when

giving these measures to older students (Crandall, Katvosky, & Crandall, 1965; Nowicki & Strickland, 1973). In addition, children seem to become more internal as they age (Nelson, Knight, Kagan, & Gumbiner, 1980). Eighth grade students are also at a turning point in their academic career. In this grade, students must be considering whether or not they want to embark on the college track in high school or the vocational track. Jones (2000) concluded that eighth grade students need to think about their career interests since they are expected to register for high school courses. Being aware of career interests can help students select courses that will prepare them for their future career. Since academic considerations are important at this point in their life, it is an interesting time to identify their perceptions of causality attributes and how this relates to academic performance.

### *Informed Consent*

Letters were sent home to the parents of students that participated in the study in order to obtain written consent for each student. This letter briefly explained the purpose of the study, description of procedures, risks or discomforts associated with the study, benefits of the study, contact persons, confidentiality and voluntary participation. In order to emphasize that each student's participation is strictly voluntary and that confidentiality will be insured, parents were informed that by coding each student with a four digit number, no names or other identifying information will be revealed in any documentation that may accompany this study. Parents were given the researcher's name and address so that upon completion of this study, parents can request the results. Students were also required to sign a student assent form which explained the purposes of

the study, descriptions of procedures, any discomforts or benefits that may occur as a result of participation, confidentiality, and voluntary participation.

*Procedure*

*School Number One*

The stability and locus of control questionnaires were completed during eighth grade science classes. The researcher remained with the same teacher for the entire day. A total of five eighth grade classes participated and each class lasted approximately forty-five minutes. The first class started at 7:15 a.m. and the last class ended at 1:30 p.m. In order for students to participate, parental consent forms and student assent forms must have been completed. The science teacher kept track of those students who had turned in the parental consent forms in order to determine who could participate. In addition, students were asked to raise their hands if they had returned their signed parental consent form. Once students raised their hands, the teacher verified that the students with their hands raised truly turned in their forms. After determining the students who were to participate, instructions were given to students. All students remained in the classroom whether participating or not. First, students were instructed to read and sign and date the student assent form if they agreed to participate. Then, the two questionnaires were passed out and directions for responding were given by the researcher. The researcher read the same instructions for all students from a script she had written. Students were instructed to fill out every item for each questionnaire. For the stability questionnaire, an example was provided on the questionnaire in order to make sure that students knew how to respond. Providing directions and completing student assent forms took a total of five minutes. For three out of the five classes, both questionnaires were read to the entire

class in order to meet several of the students' Individual Education Plan requirements (IEP). While students completed the questionnaires, the researcher walked around the room to make sure that students were responding to questionnaires appropriately. Passing out all forms, reading the directions, completing the questionnaires, and collecting the questionnaires took approximately 40 to 45 minutes.

#### *School Number Two*

Each of the ten students that participated completed the questionnaires in their homeroom class, which began around 7:00 a.m. on either 3/4/02 or 3/6/02. Homeroom teachers administered both questionnaires to the students. The homeroom class lasted only twenty minutes so the two questionnaires had to be completed on separate days. Students were asked to return their signed parental consent forms before they were permitted to participate in the study. Since there were eight homeroom classes and questionnaires had to be administered on two separate days, the researcher worked with the guidance counselor instead of administering the questionnaires herself. The researcher gave oral and written instructions to the guidance counselor so that the counselor could explain the study to the homeroom teachers. The teachers were also given written instructions that informed them of what to say before administering the questionnaire. Refer to Appendix A for an example of the instructions.

#### *Instruments*

Two questionnaires measuring locus of control and stability were administered to students in a classroom setting. The *Nowicki-Strickland Locus of Control Scale for Children* (1973) served as the measure for internal and external locus of control. Refer to Appendix B for a complete sample of this scale. This scale is appropriate for children in

grades 3 through 12. This questionnaire is a paper-and-pencil measure that consists of 40 yes/no questions. Each student circled either yes or no for each statement. This questionnaire represents a generalized measure of locus of control that includes items that encompass a variety of reinforcement settings (both interpersonal and motivational) consisting of achievement, dependency, and affiliation. This locus of control scale is designed to evaluate the extent of each child's externality. Twenty-four of the items indicate externality if the student's answer is yes and sixteen of the items indicate externality if the student's answer is no. The Nowicki-Strickland Locus of Control Scale has moderate reliability estimates with the internal consistency being .68 for the sixth, seventh, and eighth grades and test-retest reliability being .66 for the seventh grade and .71 for the tenth grade (Nowicki & Strickland, 1973). In addition, the initial study by Nowicki and Strickland (1973) obtained construct validity by having clinical psychologists answer questions that were external. Items that were not in agreement, and thus seemed ambiguous, were thrown out.

The second questionnaire measures stability based on the unstable factors of effort and luck and the stable factors of ability and task difficulty. *The Stability Questionnaire* was developed for this particular study and it was modeled after Frieze and Snyder's (1980) measure in which investigators told children a story and then asked these children to ascribe reasons of causality after reviewing an academic or play related situation that provided a success or failure outcome. Four stories were presented and two of these stories were academic in nature. In this study, a 40-item questionnaire was developed based on the stories presented in the previous study. Since the current study is primarily interested in academic achievement, our stories or situations were limited to



academic pursuits. Furthermore, this study used a multiple choice format where participants had four multiple-choice items to choose from after the academic situation had been presented as apposed to the open-ended format provided in the previous study. The four choices were based on research that found that the most common attributions in academic situations tend to be ability, effort, task difficulty, and luck (Weiner, 1979). Students had to respond to each of the four multiple-choice items on a Likert scale with one representing strongly disagree and five representing strongly disagree. One represented strongly disagree, 2 represented disagree, 3 represented uncertain, 4 represented agree, and five represented strongly agree. Therefore, the higher the number, the more the student believed that ability, effort, task difficulty, or luck was responsible for their success or failure. Each question actually had four items to which participants were asked to respond. Each item contained an academic situation with an outcome that implies success or failure. Then, students were asked if this outcome was due to ability, effort, task difficulty, or luck. For example the statement, “Johnny failed his math test” would be an followed by the question, “What do you consider to be most responsible for this low grade?” On the final version of the questionnaire, there were 12 success and 8 failure situations. An individual score for ability, effort, task difficulty, and luck was obtained in order to evaluate what students consider most responsible for success and failure. These scores were obtained by adding up all ability, effort, task difficulty, and luck scores separately. The possible range for each of these four scores was between 20 and 100. In order to determine whether students were stable or unstable, separate scores were obtained for each attribute. Stable scores were obtained by adding scores for ability

and task difficulty, and unstable scores were obtained by adding scores for effort and luck. Refer to Appendix C to get a full sample of this questionnaire.

In order to measure the reliability of this questionnaire, it was administered to an undergraduate study skills class and test-retest reliabilities were obtained for each item on all forty questions. A graduate teaching assistant was trained by the researcher in order to competently administer this questionnaire in class. Both oral and written instructions were provided. Eleven undergraduate students participated. Like the eighth-grade participants, voluntary participation and confidentiality were completely explained to the undergraduate students. They were instructed to put their social security number on both tests so that the students would not have to identify themselves by name. There were nine days between the first and second administration of this questionnaire. This test-retest procedure was primarily conducted in order to eliminate items that had poor reliability. Twenty items were eliminated and of the remaining twenty items, test-retest reliabilities ranged from .559 to .740.

The dependent measure for this study was academic achievement. Academic achievement was assessed by looking at each student's grade point average and standard achievement test scores from the previous year. Grade point averages were evaluated on the traditional 4.00 scale ranging from 1.00 to 4.00. Standard achievement test scores were evaluated by using the Stanford nine achievement test (SAT 9) that is given each year in most public schools in West Virginia. Student's percentile ranks were used as the measure of academic achievement for the SAT 9.

*Research Design*

A causal-comparative research design was used in order to determine if there were differences in academic achievement defined by GPA and SAT 9 scores based on an internal or external locus of control and stable or unstable causal attributions. All students that participated in the study were put into groups based on their scores on the *Nowicki-Strickland Locus of Control Scale* and *The Stability Questionnaire*. Students were considered to have either an internal or an external locus of control. In the same manner, based on scores obtained on *The Stability Questionnaire*, students were labeled either stable, unstable, or neither.

On the *Nowicki-Strickland Locus of Control Scale*, a split median method was used to label students as either internal or external. The researcher used the median raw score of 27.01 for internal locus of control in order to determine if students were internal or external. Only internal locus of control was needed for the median split because the internal and external scores on the *Nowicki-Strickland Locus of Control Scale* added up together to get a total raw score of forty. Therefore, these scores were dependent such that by knowing the internal score, one also knows the external score. For example, if a student scored a 26 on internal locus of control, the researcher automatically knew that this student had an external score of 14, since the total for the student had to equal 40. The median was used in place of the mean because variances were unequal for locus of control. Thus, using the median is more appropriate than using the mean. Using this score, students whose scores were at or above a 27 were considered internal. Likewise, students whose scores were below 27, were considered external.

Scores on *The Stability Questionnaire* grouped individuals into three categories, which included stable, unstable, or neither. The reason a neither category was established was due to the fact that there were several stable and unstable raw scores that were similar. Unlike on the *Nowicki-Strickland Locus of Control Scale*, stable and unstable scores were independent of each other such that knowing one score did not give you information about the other score. There were several stable and unstable scores that were only one or two points different. This negligible difference was not meaningful enough to be considered stable or unstable, so a “neither” category was formed. In order to create a neither category, the researcher examined the medians of stable and unstable. The median for stable was 136 and the median for unstable was 124. The researcher looked at the difference between the medians for stable and unstable in order to determine how different stable and unstable scores should be before they are considered meaningful enough to label a participant as either stable or unstable. Since the medians were 12 points different from each other, the researcher determined that stable and unstable scores must be at least 12 points different from one another to be considered meaningful. A participant with a difference of stable and unstable scores of less than 12 would be labeled as neither. For example, if participants received a score of 130 for stable and a score of 124 for unstable, they would be placed in the neither category since their stable and unstable scores are so close in number. If the stable and unstable scores were 12 points apart, the higher of the two scores was what the participant was labeled. For example, if the stable score was 130 and the unstable score was 112, the participant would be labeled as stable.

Interaction effects were examined by looking at how both locus of control and stability affect GPA and SAT 9 scores separately. 2 (LOC: Internal vs. External) x 3 (stability: stable vs. unstable vs. neither) factorial analysis of variances (ANOVA) were used to test hypotheses one and two. Hypothesis three was tested by running a Pearson product-moment correlation. Finally, one way ANOVA's were used to test hypotheses four, five, six, and seven.

*Data Analysis.*

The data must meet four assumptions in order to run parametric statistics:

1. The data must assume a normal distribution.
2. The data must assume equal variances (homogeneity).
3. The data must consist of continuous scores (interval or ratio).
4. There must be randomization of participants (assignment, selection).

Since none of the assumptions were grossly violated, parametric tests were used.

Hypotheses one and two were tested by running a 2 (LOC: Internal vs. External) x 3 (stability: stable vs. unstable vs. neither) factorial analysis of variance (ANOVA).

Hypothesis three was tested by running a Pearson product-moment correlation.

Hypotheses four, five, six, and seven were tested by running a one way ANOVA. The alpha level was set at .05 for hypotheses one, two, four, five, six, and seven. The null hypotheses were rejected if the observed probabilities were less than .05. The alpha level was set at .01 for hypothesis three due to possible inflation of alpha due to family wise error.

## CHAPTER IV

**Results**

A causal-comparative design was chosen for this study. A total of seven hypotheses were examined. Interaction effects were examined by looking at how both locus of control and stability affect GPA and SAT 9 scores. The researcher also wanted to determine if internal locus of control had a greater positive impact on GPA than on SAT 9 scores. 2 x 3 ANOVA's were used to test hypotheses one and two. Hypothesis three was tested by running a Pearson-product moment correlation. One way ANOVA's were used to test hypotheses four, five, six, and seven. This section will explain the results of each hypothesis tested.

*Hypothesis 1*

The interaction effect of locus of control and stability on GPA was tested by using a 2 (LOC: Internal vs. External) x 3 (stability: stable vs. unstable vs. neither) factorial analysis of variance (ANOVA). Six group mean GPAs were compared in this analysis. The groups consisted of internal and stable, internal and unstable, internal and neither, external and stable, external and unstable, and external and neither. Means (with standard deviations in parentheses) for the six groups were 3.652 (.3313), 3.833 (.072), 3.210 (.6561), 3.095 (.8276), 2.816 (1.078), and 3.296 (.6251), respectively. Group sizes or ns for the six groups were 23, 3, 17, 15, 6, and 19, respectively. Since Levene's Test for equal variances revealed that the assumption of homogeneity was violated, adjusted scores were reported.

The factorial ANOVA revealed that there was a significant interaction effect for locus of control by stability on GPA,  $F(2, 77) = 3.593, p < .05$ . In addition, a main effect

was found for locus of control,  $F(1, 77) = 7.443, p < .05$ . A main effect was not observed for stability. A closer look at the interaction reveals that marginal mean GPA's are significantly higher for internals in both the stable and unstable groups. However, marginal mean GPA's were about the same for internals and externals in the neither category. Refer to Table 1 for the Mean GPAs and Standard Deviations and Table 2 for the ANOVA Summary Table.

Table 1

*Mean GPA's and Standard Deviations as a Function of Locus of Control and Stability*

<i>Stability</i>	<i>Mean GPA's</i>		<i>Mean Standard Deviations</i>	
	Internal	External	Internal	External
Stable	3.652	3.095	.3313	.8276
Unstable	3.833	2.816	-.072	1.078
Neither	3.210	3.296	.6561	.6251

Note. The values represent mean GPAs on a scale of 1.00 to 4.00.

Table 2

*Analysis of Variance as a Function of Locus of Control and Stability on GPA*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
Stability	.263	2	.132	.319	.728	.008
LOC	3.068	1	3.068	7.44	.008**	.088
Stability x LOC	2.963	2	1.481	3.593	.032*	.085
Error	31.742	77	.412			
Total	37.563	82				

\*  $p < .05$ . \*\* $p < .01$ .

*Hypothesis 2*

The interaction effect of locus of control and stability on SAT 9 scores was also tested by running a 2 (LOC: internal vs. external) x 3 (stability: stable vs. unstable vs. neither) factorial analysis of variance. For this analysis, Levene's Test revealed that variances were equal. Six group mean SAT 9 scores were compared in this analysis. The groups consisted of internal and stable, internal and unstable, internal and neither, external and stable, external and unstable, and external and neither. Means (with standard deviations in parentheses) for the six groups were 68.391 (23.767), 87.000 (6.245), 58.000 (22.935), 59.000 (21.058), 63.833 (22.746), and 52.947 (24.135), respectively. Group sizes or ns for the six groups were 23, 3, 17, 15, 6, and 19, respectively. A significant interaction effect was not found for the interaction effect of locus of control and stability on SAT 9 scores,  $F(2, 77) = .519$ ,  $p > .05$ . Figure 2 summarizes the results of this test in a table. Main effects were not found for either locus



of control or stability; however, both were almost significant,  $F(1, 77) = 3.755, p = .056$  and  $F(2, 77) = 2.892, p = .062$ . Refer to Table 3 for the Mean SAT 9 scores and Standard Deviations and Table 4 for the ANOVA Summary Table.

Table 3

*Mean SAT 9 Scores and Standard Deviations as a Function of Locus of Control and Stability*

<i>Stability</i>	<i>Mean SAT 9 Scores</i>		<i>Mean Standard Deviations</i>	
	Internal	External	Internal	External
Stable	68.391	59.000	23.767	23.058
Unstable	87.000	63.833	6.245	22.746
Neither	58.000	52.947	23.632	22.607

Note. The values represent mean percentile ranks corresponding with SAT 9 scores.

Table 4

*Analysis of Variance as a Function of Locus of Control and Stability on SAT 9 Scores*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
Stability	3019.899	2	1509.949	2.892	.062	.070
LOC	1960.307	1	1960.307	3.755	.056	.046
Stability x LOC	541.960	2	270.980	.519	.597	.013
Error	40201.259	77	522.094			
Total	44967.422	82				

\*  $p < .05$ . \*\* $p < .01$ .*Hypothesis 3*

This hypothesis wanted to examine if internal locus of control has a greater relationship to GPA than to SAT 9 scores. A Pearson product-moment correlation was conducted in order to test this hypothesis. Since family wise error was an issue with this statistic, a  $p$  value of .01 was used in order to lessen the likelihood of a Type I error. The results indicate a statistically significant relationship between internal locus of control and GPA,  $r(83) = .309$ ,  $p < .01$ .; however, a relationship between internal locus of control and SAT 9 scores was not significant at the .01 level. This indicates that internal locus of control has a greater relationship to GPA than to SAT 9 scores. Although internal locus of control and GPA have a statistically significant relationship, this relationship may not have much practical significance since the  $r$  value of .309 is in the low moderate range in terms of strength of the relationship. Table 6 summarizes the results of the Pearson product-moment correlation.

Table 5

*Mean SAT 9 Scores and Standard Deviations as a Function of GPA, SAT 9's and Internal Locus of Control (ILOC)*

	<i>Means</i>	<i>Standard Deviations</i>
SAT 9	61.374	213.418
GPA	3.325	.677
ILOC	26.193	5.047

Table 6

*Intercorrelations Between GPA, SAT 9's and Internal Locus of Control*

<i>Correlates</i>	<i>SAT 9 1</i>	<i>GPA 2</i>	<i>ILOC 3</i>	<i>p</i>
1. SAT 9	—	—	.198	.036*
2. GPA	.620	—	—	.001**
3. ILOC	—	.309	—	.002**

\*  $p < .05$ . \*\* $p < .01$ .

#### *Hypothesis 4*

A one-way ANOVA was conducted in order to determine if there were gender differences with respect to how locus of control affects GPA. Four group mean GPAs were compared in this analysis. The groups were internal and male, internal and female, external and male, and external and female. Means (with standard deviations in

parentheses) for the four groups were 3.379 (.582), 3.569 (.477), 2.849 (.713), and 3.370, (.762) respectively. Group sizes or ns were 18, 25, 17, and 23, respectively. This test revealed that there was a statistically significant difference for gender with respect to how locus of control affects GPA,  $F = (3, 82) = 4.458, p < .05$ . A Tukeys' HSD post hoc analysis revealed a statistically significant difference between females that were internal and males that were external,  $p < .05$ . Table 7 reports the means and standard deviations for each group. Table 8 includes the ANOVA summary table.

Table 7

*Mean GPA's and Standard Deviations as a Function of Locus of Control and Gender*

<i>Locus of Control</i>	<i>Mean Gender Scores</i>		<i>Mean Standard Deviations</i>	
	Male	Female	Male	Female
Internal	3.379	3.569	.582	.477
External	2.849	3.370	.713	.762

Note. The values represent mean GPAs on a scale of 1.00 to 4.00.

Table 8

*Analysis of Variance as a Function of Locus of Control and Gender on GPA*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between	5.439	3	1.813	4.458	.006**
Within	32.124	79	.407		
Total	37.563	82			

\*  $p < .05$ . \*\* $p < .01$ .

*Hypothesis 5*

A one-way ANOVA was conducted in order to determine if there were gender differences with respect to how locus of control affects SAT 9 scores. Four group mean SAT 9 scores were compared in this analysis. The groups were internal and male, internal and female, external and male, and external and female. Means (with standard deviations in parentheses) for the four groups were 61.778 (28.140), 68.320 (19.948), 53.294 (18.535), and 59.478 (18.535). Group sizes or ns were 18, 25, 17, and 23, respectively. This test revealed that there were no statistically significant differences for gender with respect to how locus of control affects SAT 9 scores,  $F = (3, 79) = 1.486$ ,  $p > .05$ . Refer to Table 9 for the Mean SAT 9 scores and Standard Deviations and Table 10 for the ANOVA Summary Table.

Table 9

*Mean SAT 9 Scores and Standard Deviations as a Function of Locus of Control and Gender*

<i>Locus of Control</i>	<i>Mean Gender Scores</i>		<i>Mean Standard Deviations</i>	
	Male	Female	Male	Female
Internal	61.778	68.320	28.140	19.945
External	53.294	59.478	27.386	18.535

Note. The values represent mean percentile ranks corresponding with SAT 9 scores.

Table 10

*Analysis of Variance as a Function of Locus of Control and Gender on GPA*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between	2401.642	3	800.534	1.486	.225
Within	42565.820	79	538.808		
Total	42967.422	82			

\*  $p < .05$ . \*\* $p < .01$ .

### *Hypothesis 6*

A one-way ANOVA was also conducted in order to determine if there were gender differences with respect to how stability affects GPA. Six group mean GPAs

were compared in this analysis. The six groups were stable and male, stable and female, unstable and male, unstable and female, neither and male, and neither and female. Means (with standard deviations in parentheses) for the six groups were 3.397 (.419), 3.451 (.727), 3.092 (1.079), 3.375 (.8839), 2.898 (.6285), and 3.511 (.5081), respectively. Group sizes or ns were 13, 25, 7, 2, 15, and 21, respectively. This test revealed that there were no statistically significant differences for gender with respect to how stability affects GPA,  $F = (5, 77) = 1.998, p > .05$ . Refer to Table 11 for the Mean GPAs and Standard Deviations and Table 12 for the ANOVA Summary Table.

Table 11

*Mean GPA's and Standard Deviations as a Function of Stability and Gender*

<i>Stability</i>	<i>Mean Gender Scores</i>		<i>Mean Standard Deviations</i>	
	Male	Female	Male	Female
Stable	3.397	3.451	.4188	.7270
Unstable	3.092	3.375	1.079	.8839
Neither	2.898	3.511	.6285	.5081

Note. The values represent mean GPAs on a scale of 1.00 to 4.00.

Table 12

*Analysis of Variance as a Function of Stability and Gender on GPA*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between	4.313	5	.863	1.998	.088
Within	33.250	77	.932		
Total	37.563		82		

\*  $p < .05$ . \*\* $p < .01$ .

*Hypothesis 7*

A one-way ANOVA was conducted in order to determine if there were gender differences with respect to how stability affects SAT 9 scores. Six group mean SAT 9 scores were compared in this analysis. The six groups were stable and male, stable and female, unstable and male, unstable and female, neither and male, and neither and female. Means (with standard deviations in parentheses) for the six groups were 64.462 (24.419), 64.800 (22.620), 74.000 (22.502), 63.000 (22.627), 44.133 (27.622), and 63.333 (16.160), respectively. Group sizes or ns were 13, 25, 7, 2, 15, and 21, respectively. This test revealed that there were statistically significant differences for gender with respect to how stability affects SAT 9 scores,  $F = (5, 77) = 2.407$ ,  $p < .05$ . Tukey's HSD post hoc analysis indicated no statistically significant pairwise comparisons for gender with respect to how stability affects SAT 9 scores. Refer to Table 13 for the Mean SAT 9 scores and Standard Deviations and Table 14 for the ANOVA Summary Table.



Table 13

*Mean SAT 9 Scores and Standard Deviations as a Function of Stability and Gender*

<i>Stability</i>	<i>Mean Gender Scores</i>		<i>Mean Standard Deviations</i>	
	Male	Female	Male	Female
Stable	64.462	64.800	24.419	22.620
Unstable	74.000	63.000	22.502	22.627
Neither	44.133	63.333	27.622	16.160

Note. The values represent mean percentile ranks corresponding with SAT 9 scores.

Table 14

*Analysis of Variance as a Function of Stability and Gender on GPA*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between	6077.791	5	1215.558	2.407	.044*
Within	388889.631	77	565.060		
Total	44967.422	82			

\*  $p < .05$ . \*\* $p < .01$ .

## CHAPTER V

**Discussion**

The main purpose of this study was to examine interaction effects for locus of control and stability on GPAs and SAT 9 scores. Attribution theory attempts to identify how individuals explain the causes for their success or failure (Weiner, 1972). This theory contains three components: locus of control, stability, and responsibility. Most research up to this point has looked at locus of control and stability in isolation. In order to get a better idea of how attributions affect academic achievement, both locus of control and stability were examined. A 2 (LOC: Internal vs. External) x 3 (stability: stable vs. unstable vs. neither) factorial analysis of variance revealed that there was a statistically significant interaction effect between locus of control and stability for GPA.

While Cohen's *d* found that this interaction accounted for only 8.5% of the variance in GPA, further examination of the means reveal some issues of interest. One interesting finding is that in both the stable and unstable groups internals had higher GPAs than the externals; however, GPA's were relatively similar for both internals and externals in the neither group. In fact, the mean GPA for externals was slightly higher. This result was surprising because the majority of research has found that internals tend to have higher academic achievement when compared to externals. In this study, adding stability to this equation made it apparent that this trend may vary as a result of other student characteristics. The results of this hypothesis indicate that an internal locus of control only had a positive impact on academic achievement when individuals were categorized as either stable or unstable. Students in the neither group, who did not identify themselves as either stable or unstable the majority of the time, did not have

differing results on academic achievement as a function of locus of control. This outcome may be due to the fact that students who are unaware of their rationales for success or failure tend to achieve lower regardless of locus of control.

The second hypothesis examined the effect of locus of control and stability on SAT 9 scores. A statistically significant hypothesis was not observed for SAT 9 scores; nonetheless, results of this hypothesis provide further support for the above conclusion. A comparison of means for SAT 9 scores revealed that individuals categorized as neither had the lowest mean score on SAT 9's. In addition, although mean scores were a little higher for internals in all categories, internal individuals in the neither category still had a lower mean score as compared to externals in both the stable and unstable categories.

Results obtained from the hypotheses related to gender shed further light on the above observation. Out of the four hypotheses tested for gender, only two were statistically significant. Hypothesis four found a statistically significant difference between internal females and external males. This finding may be more of a result of locus of control than gender because the mean GPAs for males and females were higher for internals than for externals. The second gender-related hypothesis that was statistically significant examined differences for gender with respect to how locus of control affects SAT 9 scores. This finding revealed little information because when Tukey's HSD post hoc analysis was conducted to follow up this finding, it did not reveal any statistically significant pairwise comparisons.

Although the two statistically significant hypotheses examining gender were not very meaningful, there were some differences in gender that are worth mentioning. First, internal females had higher mean GPAs than internal males and external females had

higher mean GPAs than external males. Second, the lower mean GPA and SAT 9 scores for individuals in the neither category mentioned above, seem to be more a reflection of male performance than female performance. The female mean GPA for the neither category was actually higher than the group means for females who were stable and unstable. The mean GPA score for males in the neither group was lower than the group means for both stable and unstable males. Furthermore, mean SAT 9 scores for females in the stable, unstable, and neither categories were fairly similar; however, the SAT 9 mean score for males in the neither category was 20.329 points lower than the mean score for stable males and 29.867 points lower than the mean score for males in the unstable group. This difference in SAT 9 scores for males may not be as revealing as it appears because the standard deviation for males in the neither group was 27.622. In addition, it may not be meaningful to compare the unstable group to the stable and neither groups because there were only nine individuals in the unstable group, but there were 38 individuals in the stable category and 36 individuals in the neither category. Keeping that in mind, it may be more meaningful to limit comparisons to the stable and neither groups since their group sizes are relatively equal. Still yet, comparisons made between the stable and neither groups would reveal different trends for internals and externals.

Main effects were not of interest in this study; however, the results of main effects will be discussed in order to compare them with previous research. A comparison of means for internals and externals on GPAs and SAT 9 scores are in agreement with previous research that suggests that internals have higher academic achievement than externals (Findley & Cooper, 1983; Hjelle, 1970; and Messer, 1972). Although a comparison of means would support this statement, a main effect for locus of control was

only significant for GPAs. In addition, a bivariate correlation found a significant positive relationship between internal locus of control and GPA, but not between internal locus of control and SAT 9 scores. One must keep in mind that although a main effect for locus of control was significant, Cohen's *d* reported that only 8.8% of the variance in GPA was due to locus of control.

Previous research has not been in agreement on this issue. Some research has found internal locus of control to have a greater positive relationship to GPA (Crandall, Katvosky, & Crandall, 1965; & Messer, 1972), while other research has found internal locus of control to have a greater positive relationship to SAT 9 scores (Findley & Cooper, 1983). With this limited sample, the findings in this research would support the former studies and would suggest that while an internal locus of control may be an important determinant of GPAs, it may not be as important in determining SAT 9 scores.

Several studies have looked at the relationship between academic achievement and locus of control; however, studies examining stability have been limited to looking at how stable and unstable attributions predict future performance (Weiner, 1973; Weiner, 1994a; Weiner, 1994b; & Weiner, Cook, Heckhausen, & Meyer, 1971). Although main effects were not addressed as a hypothesis for this study, results of the main effects of stability on GPAs and SAT 9 scores are worth mentioning due to limited research in this area. The main effect of stability was not statistically significant for GPAs or SAT 9 scores; however, a comparison of the means for both GPAs and SAT 9 scores revealed that both GPAs and SAT 9 scores were lower for individuals in the neither category.

There were several limitations in this study that would warrant one to take caution when interpreting these results. First, limitations related to the sample will be addressed.

The sample used was a sample of convenience. Those schools and teachers who agreed to participate determined what students would be involved in the study. In addition, the schools that participated were both from North Central West Virginia and all students were in the eighth grade. Therefore, this study is only generalizable to eighth graders from North Central West Virginia. Another important thing to keep in mind is that students were required to have parents sign an informed consent and return this to the teacher. As a result, students whose parents permitted them to participate may be somewhat different than students whose parents did not permit them to participate. In addition, since students were responsible for returning these forms to the teacher, the students who returned the forms may be students who are more responsible. As mentioned earlier, another limitation related to sample size was due to the fact that only nine individuals were in the unstable category as compared to 38 and 36 in the stable and neither categories, respectively.

Other limitations were related to differences in setting. First, three out of the five classes from School #1 had to have questionnaires read to them by the researcher due to IEP requirements for several of the students in these classes. Second, procedures for School #1 and School #2 were different. The researcher administered the questionnaires herself for School #1. In addition, she walked around to make sure students were correctly filling out both questionnaires. In comparison, the researcher was not present during the administration of the questionnaires for School #2 and instead, the students' homeroom teachers administered the questionnaires. In addition, since homeroom was only twenty minutes long, the two questionnaires were administered on two separate days. Although differences in setting added further limitations to the study, these

limitations were fortunately limited because only 10 students were from School #2 while 73 students were from School #1.

The questionnaire that was developed for this study also had some limitations. A pre-post test revealed that *The Stability Questionnaire* had acceptable reliability. The pre-post test was conducted on undergraduate students at a nearby university because the researcher was unable to obtain access to eighth graders for the purposes of a pre-post test. Therefore, the reliability of this questionnaire for eighth graders is in question. In addition, content validity for this questionnaire was not addressed. Further research needs to examine both the reliability and validity of this questionnaire.

Examining the interaction between locus of control and stability brought forth some interesting issues. The first, and most important finding, was the results obtained from males in the neither category. The lower mean scores on GPAs and SAT 9 scores for males in this category transcended the impact that locus of control had on academic achievement. Since this finding is novel and was unexpected, further research needs to be conducted in order to determine if this trend recurs in a similar setting with similar participants.

The second issue that this study brought up has to do with the dependent variables, GPA and SAT 9 scores. A significant interaction between locus of control and stability only occurred when the dependent variable was GPA. In addition, internal locus of control had a moderate relationship to GPA, but not to SAT 9 scores. Since both variables measure academic achievement, why is their relationship to locus of control different? A research question that needs to be addressed in future research is “Do other variables such as motivation or effort account for the differences between GPA and SAT

9 scores?” Further research needs to be conducted in order to determine how GPA and SAT 9 scores differ, such that they have a different relationship to locus of control.

Although further research needs to be conducted in order to determine how locus of control and stability work together to influence academic achievement, the moderate relationship that exists between locus of control and GPA can have some application in school settings. For example, it would be interesting to see if attribution training focusing on increasing internal locus of control in students would result in higher academic achievement. In addition, since effort on the part of students is an internal characteristic that is subject to change, it may be most beneficial to stress the importance of effort by linking effort to successful outcomes.

Further research examining the impact of locus of control and stability on academic achievement needs to be conducted. Examining the reliability and validity of *The Stability Questionnaire* would be beneficial so that this questionnaire could be used to promote further research in this area. Identifying how these and other characteristics work together to influence academic achievement would help educators determine what characteristics are worthy of emphasis in the classroom environment.



CHAPTER VI

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## Appendix A

### Directions for Research

Before administering the questionnaires, hand out student assent forms. Have students sign and date each form. **Make sure students put their Lunch/WVIS # on the student assent forms.** Collect the forms and give students the following directions: **FIRST, HAVE STUDENTS PUT THEIR WVIS/LUNCH # ON THE TOP OF EACH PAGE. THEN SAY:** I have two questionnaires for you to fill out. Each questionnaire will take about 15-20 minutes to complete. Please take these questionnaires seriously and respond to each item truthfully. These questionnaires are going to be used for research in order to help identify some things that may influence how well students do in school. Your participation in this study is greatly appreciated. Since all participation is voluntary, you may choose to discontinue participation at any time.

#### Nowicki Strickland-Hand out questionnaires first

Say: This questionnaire asks you for your opinion about different situations you may be faced with in school, at home, and with friends. For this questionnaire, answer yes or no to each question. Please answer every question. **MAKE SURE STUDENTS RESPOND TO EVERY QUESTION. Walk around the room to make sure students are filling out the questionnaires properly.**

#### Stability Questionnaire- Hand out questionnaires first

Say: This questionnaire asks you about what you think is responsible for success or failure in different school situations. Look on your questionnaire. You have to circle 1 through five four each of the four answers. For each question you will circle one through

5 four times. The definition for one through five is at the top of each page. 1=strongly disagree, 2=disagree, 4=Uncertain, 5=Agree, and 6=Strongly Agree. An example is provided for you on the first page to make sure you understand how to respond. **MAKE SURE STUDENTS RESPOND TO EVERY QUESTION. Walk around the room to make sure students are filling out the questionnaires properly.**

**TEACHERS:** Make sure you read the example out loud to the students and explain how to answer the question.

Thanks so much for your help,  
Tasneem Edmonds

Appendix B

Nowicki-Strickland Locus of Control Scale for Children

**Directions: Circle yes or no for each item. Please answer every question.**

1. Do you believe that most problems will solve themselves if you just don't fool with them? YES or NO
2. Do you believe that you can stop yourself from catching a cold? YES or NO
3. Are some kids just born lucky? YES or NO
4. Most of the time do you feel that getting good grades means a great deal to you? YES or NO
5. Are you often blamed for things that just aren't your fault? YES or NO
6. Do you believe that if somebody studies hard enough he or she can pass any subject? YES or NO
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway? YES or NO
8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do? YES or NO
9. Do you feel that most of the time parents listen to what their children have to say? YES or NO
10. Do you believe that wishing can make good things happen? YES or NO
11. When you get punished does it usually seem its for no good reason at all? YES or NO
12. Most of the time do you find it hard to change a friend's (mind) opinion? YES or NO
13. Do you think that cheering more than luck helps a team to win? YES or NO
14. Do you feel that its nearly impossible to change your parent's mind about anything? YES or NO



**WVIS#** \_\_\_\_\_

15. Do you believe that your parents should allow you to make most of your own decisions?  
YES or NO
16. Do you feel that when you do something wrong there's very little you can do to make things right? YES or NO
17. Do you believe that most kids are just born good at sports? YES or NO
18. Are most of the other kids your age stronger than you are? YES or NO
19. Do you think that one of the best ways to handle most problems is just not to think about them? YES or NO
20. Do you feel you have a lot of choice in deciding who your friends are? YES or NO
21. If you find a four leaf clover do you believe that it might bring you good luck?
22. Do you often feel that whether you do your homework has much to do with what kind of grades you get? YES or NO
23. Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her? YES or NO
24. Have you ever had a good luck charm? YES or NO
25. Do you believe that whether or not people like you depends on how you act? YES or NO
26. Will your parents usually help you if you ask them to? YES or NO
27. Have you felt that when people were mean to you it was usually for no reason at all?  
YES or NO
28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today? YES or NO
29. Do you believe that when bad things are going to happen they just are going to happen no matter what you do to try to stop them? YES or NO
30. Do you think that kids can get their own way if they just keep trying? YES or NO

**WVIS#** \_\_\_\_\_

31. Most of the time do you find it useless to try to get your own way at home? YES or NO
32. Do you feel that when good things happen they happen because of hard work? YES or NO
33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters? YES or NO
34. Do you feel that it's easy to get friends to do what you want them to? YES or NO
35. Do you feel that you have little to say about what you get to eat at home? YES or NO
36. Do you feel that when someone doesn't like you there's little you can do about it? YES or NO
37. Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are? YES or NO
38. Are you the kind of person who believes that planning ahead makes things turn out better? YES or NO
39. Most of the time, do you feel that you have little to say about what your family decides to do? YES or NO
40. Do you think that it's better to be smart than to be lucky? YES or NO

## Appendix C

### Stability Questionnaire

For each possible choice below, rate how much you agree it was responsible for the outcome using this scale:

1 = Strongly disagree

2 = Disagree

3 = Uncertain

4 = Agree

5 = Strongly agree

Example: You just received a math test that that you had taken a couple of days ago. This test involved decimals. You failed this test. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

1. For social studies, you were required to take part in a debate about the increased amount of pollution in our environment. You were required to come up with a solution to the pollution crisis and defend your position against another classmate's opposing position. You argued your points extremely well during the debate. Circle what you think is responsible for your success. Respond to every choice.

- a. ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

2. You just completed your first chapter on algebra and were given homework on this new information. You completed the homework and you got all of your problems correct. Circle what you think is responsible for your success. Respond to every choice.

- a. ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

For each possible choice below, rate how much you agree it was responsible for the outcome using this scale:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Uncertain
- 4 = Agree
- 5 = Strongly agree

3. Your science teacher required you to write a research paper on animal cloning. You had to talk about a previous study that has researched cloning and then you had to discuss your position on cloning. You did very well on this assignment. Circle what you think is responsible for your success. Respond to every choice.

- a. ability \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

4. You were required to take a French class as part of the school's effort to increase each student's knowledge of different cultures. Your first test in this class was to correctly pronounce a one-paragraph passage in French. You did well on this assignment. Circle what you think is responsible for your success. Respond to every choice.

- a. ability \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

5. You had a math test that required you to complete twenty-five algebra problems. You got several answers incorrect. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

6. For an english test, you are required to read a passage and identify all of the grammatical errors. You receive a high grade for this assignment. Circle what you think is responsible for your success. Respond to every choice.

- a. ability \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

For each possible choice below, rate how much you agree it was responsible for the outcome using this scale:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Uncertain
- 4 = Agree
- 5 = Strongly agree

7. In physical education class, you have been working on your flexibility. You take a test that requires you to complete a variety of stretches in order to test your flexibility. You do very well on this test. Circle what you think is responsible for your success. Respond to every choice.

- a. ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

8. For health class, you are required to draw a diagram of the food pyramid and make a weekly menu that requires you to go by the guidelines suggested in the food pyramid. You do poorly on this assignment. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

9. You are required to do a series of word problems for math class. You don't do as well as you would have liked on this assignment. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

10. You enter the science fair at your school and decide to do a project on global warming. You win first place. Circle what you think is responsible for your success. Respond to every choice.

- a. ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

For each possible choice below, rate how much you agree it was responsible for the outcome using this scale:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Uncertain
- 4 = Agree
- 5 = Strongly agree

11. You have been asked to develop a poster board that explains the culture of individuals from a foreign country of your choice. You do well on this assignment. Circle what you think is responsible for your success. Respond to every choice.

- a. ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

12. You had to read a chapter explaining the components involved in writing an essay. You were then asked to answer all of the chapter questions and turn it in as part of a graded homework assignment. You do poorly on this assignment. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

13. Your school counselor asks you to go into a fifth grade class and do some activities that explain the dangers of drugs. The kids in the fifth grade class had fun with these activities and you feel they learned a lot about the dangers of drugs. Circle what you think is responsible for your success. Respond to every choice.

- a. ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

14. You watched *The Diary of Anne Frank* and were then asked to write a two-page summary on this film. You wrote a great summary. Circle what you think is responsible for your success. Respond to every choice.

- a. ability    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck    \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

15. A biology professor from a University close to your hometown came to your science class as a guest speaker. You were tested on the information that was presented during this speech. You failed this test. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck              \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

16. You were given a reading assignment that asked you to compare and contrast your hometown newspaper to *The New York Times*. You had to compare and contrast the pros and cons of both newspapers. You made a very high grade on this assignment. Circle what you think is responsible for your success. Respond to every choice.

- a. ability      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

17. In physical education class, you had to do as many sit ups as you possibly could in a five-minute time frame. You came in second place out of all the individuals in your physical education class. Circle what you think is responsible for your success. Respond to every choice.

- a. ability      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. effort      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. ease of the task      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. luck      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

18. You were given a chapter test on adverbs and adjectives. You did very poorly on this exam. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck              \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

19. You were assigned four short poems to read. You were then asked to pick out one of the poems and write a brief paragraph about what you think the poem meant. You didn't do so well on this assignment. Circle what you think is responsible for your failure. Respond to every choice.

- a. lack of ability      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- b. lack of effort      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- c. task difficulty      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_
- d. bad luck              \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

20. Your science teacher gave you an assignment that involved finding four leaves from different trees. You were then asked to identify both the scientific and the common names of the four leaves. You did poorly on this assignment. Circle what you think is responsible for your failure. Respond to every choice.

a. lack of ability      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

b. lack of effort      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

c. task difficulty      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

d. bad luck      \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_