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ANALYSIS OF LOCUS OF CONTROL AND EDUCATIONAL LEVEL UTILIZING THE INTERNAL CONTROL INDEX

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Abstract

This study is a comparison of Locus of Control as measured by the Internal Control Index (ICI) between adult subjects of high school education or less and adult subjects attending graduate school or of graduate school education or above. The study was conducted to determine if the Internal Control Index for the graduate level educated population was significantly different from that of the non-college-educated population. The Internal Control Index (ICI), by Patricia Duttweiler was used as the instrument for this study. A sample of 100 male and female subjects was used from the West Virginia and Ohio areas. Each participant received a questionnaire asking his or her age, gender, and education level. Also, a copy of the Internal Locus of Control index survey was distributed to each participant. There were 50 non college-educated subjects with a high school education or less and 50 graduate-level educated subjects with a graduate level education or higher participating in this study. The survey was self-administered and given on a volunteer basis. The results of this particular study indicated that there was a statistically significant difference in locus of control between subjects of high school education or less and graduate level education or higher.

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AN ANALYSIS of LOCUS of CONTROL and EDUCATION LEVEL

UTILIZING the INTERNAL CONTROL INDEX

The concept of locus of control, although relatively new (Rotter, 1954), has received considerable attention in the study of psychological differences (Lefcourt, 1976; Phares, 1976). Locus of control refers to a person's belief about control over life events (Findley & Cooper, 1983). Some people feel personally responsible for the things that happen to them. These people are labeled internals. Others feel that their outcomes in life are determined by forces beyond their control. These people are labeled externals (Findley & Cooper, 1983). Obviously, most people fall between these two extremes, forming a continuous distribution of locus of control beliefs. Locus of control is thought to be a relatively enduring dispositional characteristic, although certainly modifiable through experience (Findley & Cooper, 1983).

The concept of locus of control concerns the extent to which people believe that what happens to them is dependent upon their own behaviors and therefore controllable, or, alternatively, whether events are the product of non-contingent factors such as luck, fate or powerful others (Elliot, 1997). Arising from the Social Learning Theory of Rotter (1954), the concept of locus of control was articulated in the seminal 1966 paper which has proved to be the most cited article in the psychological and social science literature of the past two decades, with 4,700 citations by the end of the 1980's (Rotter, 1990).

Rotter's definition, which describes internal-external locus of control as a reinforcement that is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived

as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control (Rotter, 1966). If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control (Rotter, 1966).

People might ponder the reasons for the phenomenal interest of locus of control. Rotter (1975,1982) argues that it may reflect the perception of increasing social problems of the complexity of our world, with the attendant feelings of powerlessness and vulnerability. Lefcourt's wide-ranging review (1982) reaches a similar conclusion.

Over nearly four decades, internal vs. external locus of control of reinforcement (Rotter, 1966) has stimulated thousands of studies in Psychology and Education. Grounded in Rotters social learning theory (e.g., Rotter, Chance, & Phares, 1972), IE refers to people's generalized expectations for control over reinforcements. Internals believe that the outcomes in their lives depend at least somewhat on their actions and choices; externals believe that outcomes depend on chance, fate or powerful other people (Rotter, 1972).

Major literature reviews show that internals and externals differ in numerous ways, particularly in terms of their cognitive activity and environmental mastery. Because they are more perceptive of their situations, internals seem to exert more control over their lives in part by their knowledge of their environments (Lefcourt, 1976). Internals more readily acquire and utilize information that is relevant to their goal situation even when it seemingly is not relevant (Phares, 1976)

A positive relation between locus of control beliefs and achievement is logical and intuitively appealing. Logically, if success is positively valued, people who feel more able to control outcomes should exert more effort. Also, internals and externals should (and do) react differently to success and failure. Internals take pride in good outcomes and feel shame in bad outcomes, whereas externals experience less intense emotions (Phares, 1976). This difference should enhance the relative "attractiveness" of the success experience for the internal.

In addition to logical appeal, a number of studies have associated internal locus of control beliefs with behaviors that affect the probability of attaining success (Findley & Cooper, 1983). For instance, Ducette and Wolk (1972) found that externals tend to exhibit less persistence at tasks. Others have found a positive relation between internality and willingness to delay rewards in order to maximize them (Bailer, 1961) and preference to perform in skill rather than in chance situations (Rotter & Mulry, 1965). Each tendency should mean internals have a greater likelihood of achievement.

An individual's belief about locus of control has been frequently studied as an antecedent to important social behaviors and psychological states. One set of behaviors that has received extensive study concerns achievement related activities (Findley & Cooper, 1983).

Although the relation between internality and greater achievement has been studied in many settings, perhaps the most important setting is within education (Findley & Cooper, 1983).

It has often been said that obtaining a good education is the key to being successful in the world (Findley & Cooper, 1983). While many things may contribute to

school achievement, one variable that is overlooked is locus of control (Findley & Cooper, 1983).

Purpose

The purpose of this particular study was to compare the level of internal locus of control in high school level or less educated subjects with graduate level or above educated subjects to examine if there is a significant difference.

The instrument used as reference was the Internal Control Index (Patricia Duttweiler, 1984).

The original study of the Internal Control Index (Duttweiler, 1984), was developed and tested with several samples of junior college, university undergraduate, and continuing education students. The total sample involved 1365 respondents of both sexes. Means were broken down by age, group, sex, race, educational and socioeconomic levels and range from 99.3 to 120.8. Each item was scored on a 5-point Likert scale from A ("rarely") to E ("usually"). Half of the items were worded so that high internally oriented respondents are expected to answer half at the "usually" end of the scale and the other half at the "rarely" end. The "rarely" response is scored as 5 points on items 1, 2, 4, 6, 8, 11, 14, 17, 19, 22, 23, 24, 26, and 27; for the remainder of the items, the response "usually" is scored as 5 points. This produces a possible range of scores from 28 to 140 with higher scores reflecting higher internal locus of control.

In this particular study, fifty subjects were anonymously selected with a high school education or less from the Adult Basic Education facility in Parkersburg, West Virginia. They were asked to fill out a questionnaire and complete the Locus of Control Index by Patricia Duttweiler.

The same questionnaire and Locus of Control Index by Patricia Duttweiler was given to 50 graduate level educated subjects or above from Marshall Graduate College, Charleston, West Virginia campus. Persons of both sexes were asked to participate in this study. The participation was strictly on a voluntary basis.

Method

Subjects

In this study, comparing Locus of Control and educational levels, 50 subjects of high school education or less and 50 subjects of graduate school education or higher were asked to participate.

In the group of high school educated or less subjects, there were 19 males with an average age of 39.11. In that same group, there were 31 females with an average age of 27.45.

In the graduate level or above educated group, there were 22 males with an average age of 28.55. In that same group, there were 22.28 females with an average age of 28.5.

The subjects of high school education or less were obtained from the Adult Basic Education facility in Parkersburg, West Virginia. The subjects of graduate level or higher were obtained through graduate level classes at Marshall Graduate College in Charleston, West Virginia.

First, the subjects were asked to complete a questionnaire asking their age, gender, and education level (highest grade completed). Secondly, they were asked to fill out the Internal Control Index (ICI) by Patricia Duttweiler (1984).

The subjects asked to participate were 18 years of age or older from West Virginia and Ohio. The subjects chosen to participate were male or female and of any socioeconomic status, background, or race.

The survey and questionnaire given to the subjects was on a voluntary basis and were given anonymously to each participant.

Procedure

The subjects were asked to complete the questionnaire and The Internal Control Index (ICI) by Patricia Duttweiler. The questionnaires and surveys were completed individually and were collected upon completion. There was no time frame for completion of this survey procedure. The chairperson of Adult Basic Education submitted a letter of willingness to participate in this research procedure as was necessary for the research approval guidelines and is included as an attachment.

Instruments

The instrument selected and utilized in this study was The Internal Control Index (ICI) by Patricia C. Duttweiler (1984). The Internal Locus of Control Index (ICI) (1984) by Patricia Duttweiler is a 28-item instrument designed to measure where a person looks for, or expects to obtain, reinforcement. An individual with an external locus of control believes that reinforcement is based on luck or chance, while an individual with an internal locus of control believes that reinforcement is based on his or her own behavior. Locus of control is viewed as a personality trait that influences human behavior across a wide range of situations related to learning and achievement. There are two factors contained in the ICI, one that is called self-confidence, and a second that is called autonomous behavior (behavior independent of social pressure) (Duttweiler, 1894.)

The Internal Control Index was developed and tested with several samples of

junior college, university undergraduate, and continuing education students. The total sample involved 1365 respondents of both sexes. Means are available that are broken down by age, group, sex, race, and educational and socioeconomic level and range from 99.3 to 120.8. Each item was scored on a 5-point Likert scale from A ("rarely") to E ("usually"). Half of the items are worded so that high internally oriented respondents are expected to answer half at the "usually" end of the scale and the other half at the "rarely" end of the scale. The "rarely" response is scored as 5 points on items 1, 2, 4, 6, 11, 14, 17, 19, 22, 23, 24, 26, and 27; for the remainder of the items, the response "usually" is scored as 5 points. This produces a possible range of scores from 28 to 140 with higher scores reflecting higher internal locus of control. The ICI has very good internal consistency, with alphas of .84 and .85. No test-retest correlations were reported.

Results

Analysis of Data

This study was intended to determine if there was a significant difference in locus of control levels between high school graduates or less and graduate level subjects or higher.

One hundred subjects were given a copy of The Internal Locus of Control Survey by Patricia Duttweiler (1984) and asked to fill out an informed consent form (Appendix D and E).

The participants in this sample included 19 male subjects with an average age of 39.11 and 31 females with an average age of 27.45 in the high school or less educated population. In contrast, there were 22 male subjects with an average age of 28.55 and 28 female subjects with an average age of 28.5 in the graduate level or higher educated population (Appendix F).

This table also shows that under the column "Sex" on the Subjects Results Appendix, that: 1 = Male and 2 = Female (Appendix F). This Appendix also shows that under the column "Education" on the Subjects Results Appendix, that 1 = High School or Less Educated and 2 = Graduate Level or Higher Educated (Appendix F).

The resulting data were analyzed utilizing SPSS software, version 10. The Levene's Test for Equality of Variances indicated homogeneity of variance between groups. Thus, the independent samples t-test results are valid.

The data were analyzed using a t-test for independent samples with alpha set at .05 with a N of 100 and df = 98.

The results indicated that the mean of students of graduate level or higher was 116.68 with a standard deviation of 12.3262 and standard error of mean of 1.7432. In comparison, the mean of subjects of high school education or less was 99.7 with a standard deviation of 14.7042 and a standard error mean of 2.0795. These results indicate that there is a statistically significant difference between these groups of subjects when alpha was set at .05.

Discussion

The results in the present investigation would appear to indicate that the graduate level and higher educated subjects possess a higher level of internal locus of control compared to those subjects of high school education or less.

Many studies and papers have been completed about how locus of control affects us in different areas of our lives (Lefcourt, 1976; Phares, 1976). However, there still lacks information in the area of whether locus of control is different for those persons with high education levels as compared to those persons with low education levels. This

is why I chose to compare locus of control between these two groups in my thesis research.

Some literature states that internals and externals differ in numerous ways, such as in terms of their cognitive activity and internal mastery (Lefcourt, 1976). Lefcourt feels internals appear to exert more control over their lives due to the knowledge of their environment (Lefcourt, 1976). As master degree candidates, we have to be knowledgeable of our internal thoughts and have the ability to process them coherently. Knowledge of our external environment is imperative in order to ascertain where we might obtain the information and sources necessary to help guide us through the completion of this program. Without these skills, it appears it might be almost impossible to complete the task of achieving this goal.

Internals more readily acquire and utilize information than do externals (Phares, 1976). Apparently, we, as higher educated persons, are possibly able to obtain and use information that helps us reach our goals, whereas those persons with lesser education might not be as focused or as insightful to take advantage of this information in order to help them achieve their goals.

It has been stated that internals take pride in good outcomes and feel shame in bad outcomes, whereas, externals experience less intense emotions either way (Phares, 1976). If success, such as attaining a master's degree or higher education, is positively valued, people who feel more able to control outcomes should exert more effort. It is stressed that internals and externals react differently to success and failure (Phares, 1976). The internal continues to strive forward to achieve their desired goal and more often, the

external gives up much more quickly. Therefore, this would show that internals continue to work toward their higher education goals while externals would give up on achieving higher education much sooner when running into obstacles, minor defeats and roadblocks.

Studies have been completed associating internal locus of control beliefs with behaviors that affect the probability of attaining success (Findley & Cooper, 1983). This in turn might be an indicator of the probability of completing a high school education or continuing your education to higher levels. It has been found that externals exhibit much less persistence at tasks than do internals (Ducette and Wolk, 1972). Therefore, it would seem relevant that the level of internal locus of control for masters level persons versus high school level or less educated might be higher.

There has been found a positive relation between internality and willingness to delay rewards in order to maximize those rewards (Bailer, 1961). Certainly, delaying gradification while putting more time and effort into attaining a masters degree has to be more rewarding in the long run for those persons internally motivated and willing to wait for completion of their goals. While dropping out of school or achieving only a high school education would appear to be very momentarily rewarding for those externally motivated.

Internals would rather rely on skill and perseverance for their outcomes than in chance situations (Rotter & Mulry, 1965). A greater likelihood of achievement would apparently be had by the internally motivated persons as shown by these tendencies.

Greater achievement and internality has been studied in many settings, perhaps the most important has been within this education realm (Findley & Cooper, 1983). It

has been said that a good education is the key to being successful and while many things contribute to school achievement, one variable that has been overlooked to a large degree is locus of control (Findley & Cooper, 1983).

An external locus of control has been found to be related to poor coping with stress and self-defeating personality styles (Schill & Beyler, 1992). While continuing your education to higher levels such as a masters degree or beyond, it certainly appears that a student experiences numerous different stresses in areas such as attainment of funds for tuition, time away from work and family, and dealing with setbacks and challenges throughout the program.

Only with a high level of internal locus of control and the ability to cope with stress would a person be able to complete this degree. Also, that same master's candidate would not be able to have a self-defeating personality style that is said to be had by an external or they would not be able to complete the program. It appears that the successful master's candidate must possess positive skills in coping with stress and would have a self-fulfilling personality style, the exact opposite that is said to be had by the external.

This particular research showed a statistically significant difference in the locus of control between the samples of the high school educated or less subjects and the masters level or higher subjects. At present, we do not know why there was a difference, only that there was a difference. Therefore, we recommend that further research is completed.

In contemplating additional studies, certain limitations of the present study should

be noted. First, this particular study surveyed a relatively few number of subjects to make up the sample for testing. Also, in this particular study we did not control for male/female issues. Also, we did not take into consideration the reading level of those completing the survey at the adult basic education facility. Finally, another limitation might be that the sample was taken only from West Virginia and Southeastern Ohio. These areas are considered rural in terms of education and socioeconomic status.

Some implementations for practice and future research are to use a larger sample base and to take male/female issues into account. Also, it would be advisable to administer a reading test to those taking the survey to address the reading skill level of the participants to determine the possible comprehension of the subjects so that the results would be more valid and less skewed. Also, considerations might be made to give the test in other forms instead of only paper and pencil form. The survey could be given by computer or verbally by interview as alternatives. Finally, it is recommended to use a much more widely geographical diverse location for the sample population.

Other research might be completed in the area of testing students for their locus of control level in the 9th or 10th grade and then re-testing again in six or seven years. This time frame would allow those same students to complete a master's degree. Then a retest would be performed to ascertain if the locus of control for those persons dropping out of high school and those persons that went on to achieve their masters degree remained relatively the same as it was in the 9th or 10th grade at initial testing. If remaining relatively the same, years later, this might indicate that locus of control for those subjects tested several years before would have remained the same no matter how much education they achieved or did not achieve. If the locus of control changed, was it due to

attainment of the education and the experiences that went with that process or was it immanent that it would change anyway?

Further studies could be completed to research if those students with the initial higher internal locus of control were the students to go on and complete their master's degrees and those students with an initial lower internal control to be those students that did not go on in higher pursuit of education.

Also, similar studies might be completed that tested the locus of control in sample populations over an extended period of time. Re-testing would be administered to the subjects at regular intervals while taking into consideration environmental factors and aging related issues. This study would be completed to examine whether the locus of control changed in those persons initially internally motivated and initially externally motivated or if it remained relatively the same over time. Even further studies could be completed to examine if a change occurred, what was the cause of the change.

Appendix A

Literature Review

Literature Review

Dollard and Miller (1950) were among the first to employ the term social learning, while Rotter (1954) is usually credited with the development of the first social learning theory (Phares, 1992). There are now several social learning approaches (including Bandura, 1977a; Mischel, 1973; Rotter, Chance, & Phares, 1972). All of them share the premise that learning takes place in a social context and that it is learning which accounts for human behavior. Social learning theories also share other features such as emphasis is not on instinctual urges, intrapsychic conflicts, or genetics. Instead the focus is on behaviors that can be very discrete events or subtle things such as avoiding certain situations or behaving confidently (Phares, 1992).

As with most learning approaches, the environment is seen as the major force shaping behavior. With proper control of the environment, the learning process will explain both the acquisition and modification of behavior (Phares, 1992). Of course, heredity and biological factors may set limits, but the emphasis is clearly on flexibility that learning allows rather than on limitations that biology or heredity imposes (Phares, 1992).

The American psychologist well known for the Social Learning Theory of Personality and developed the concept of Locus of Control is Julian Rotter (Phares, 1992). His Social Learning Theory focuses on the variables that account for the occurrence of any given behavior (Phares, 1979; Rotter, 1954; Rotter, et al., 1972). He is not so interested in the actual process of learning as in the factors that account for the expression of it once it is in the person's repertoire of behaviors. Rotter suggests that any behavior is determined by two prime variables: expectancy and reinforcement value. An expectancy is a subjectively held probability that a particular reinforcement

will occur as the outcome of a specific behavior. Reinforcement value refers to the degree of preference for one goal over others (Phares, 1992). Two other variables in Rotter's theory are: psychological situations and problem-solving generalized expectancies. With psychological situations, in contrast to psychodynamic approaches, which always seems to focus on internal characteristics at the expense of environmental factors, Rotter states the magnitude of expectancies and reinforcement values is determined in part by the specific situation in which they occur.

The second set of variables is referred to as problem solving generalized expectancies. They are akin to attitudes or sets that we have learned; they are ways we develop of construing problem situation so as to be most likely to overcome them. An example is interpersonal trust - the extent to which one can rely on the word of others (Rotter, 1971a). Another is called internal versus external control of reinforcement. The variable has been the widespread research (Lefcourt, 1982; Phares, 1976; Rotter, 1966, 1990). It refers to the extent to which people attribute the occurrence of reinforcement of their own efforts and personal characteristics (internals) or luck, chance, or powerful other forces (externals) (Phares, 1992).

While at Ohio State, Rotter began work on his Social Learning Theory of Personality, and in 1954, Social Leaning and Clinical Psychology was published. In this book, he laid out the basic tenets of his Social Learning Theory. The main idea of this book is that personality is really the interaction between a person and his or her environment. Personality does not reside within an individual independent of the environment he or she is in (Rotter, 1954).

In 1966, Rotter published a monograph entitled Generalized Expectancies for Interval Versus External Control of Reinforcement (1966), where he explored people's expectancies as to whether they can influence the reinforcements they receive. At one extreme are people who believe that reinforcements are due to luck or fate. They would be said to have an external locus of control. At the other extreme are those who believe that reinforcements are a function of one' s behavior. These individuals have an internal locus of control. The creation of Rotter' s Internal – External Locus of Control Scale (1966) to measure individual differences in this characteristic has been widely used and research on I-E flourished in the 1970' s. The dimension of internal versus external locus of control has come to be seen as a relatively stable dimension of personality.

Rotter has claimed that behavior is determined by two major types of "expectancy ": The expected outcome of a behavior and the value a person places on that outcome. In Applications of a Social Learning Theory of Personality (1972), Rotter in collaboration with June Chance and Jerry Phares, described a general theory of personality with variables based on the ways that different individuals habitually think about their experiences. One of the major variables was I-E, which distinguished "internals," who think of themselves as controlling events, from " externals," who view events as largely outside of their control. Correlations have since been found between I-E orientations and a variety of behaviors, ranging from job performance to attitudes toward one's health (Rotter, et al, 1972).

Rotter also believed that an individual's behaviors are not simple, reflexive responses to an objective environment (Rotter, 1954.) Rather, the environment an individual responds to or acts in, is dependent on that particular individual' s learning

experience and life history. What stimuli people respond to are shaped by their experiences. Two people might experience the same environment in very different ways. To Rotter, personality is a relatively fixed group of dispositions to react to situations in a certain manner. He stressed that most learning takes place in social situations with other people (Rotter, 1954). Rotter' s personality theory was the first to comprehensively integrate cognition, in the form of expectancy, with learning and motivation, in the form of reinforcement (Phares, 1992).

Albert Bandura (1986) now refers to his version of social learning theory as a social cognitive theory . It is decidedly complementary to Rotter's theory. Bandura advocates the principle of reciprocal determinism. This means that the three variables of behavior, person, & situation influences each other. In contrast to many learning theorists, Bandura does not believe that reinforcement is always necessary for learning to take place (Phares, 1992).

Bandura (1982), proposed the concept of self-efficacy as an explanation of behavior and behavior change. People tend to avoid activities they believe exceed their coping abilities and undertake those they consider themselves capable of handling. Efficacy expectations influence the decision to attempt a behavior, the length of time it will be attempted, and the effort that will be involved. Low efficacy expectations in the face of obstacles will result in persons experiencing serious doubts or giving up, while high efficacy expectations will result in greater efforts being extended to achieve desired results (Bandura 1982).

Also, Bandura states that self-efficacy refer to the belief that one can successfully execute a given behavior. Self-efficacy beliefs also influence our patterns of thought and

emotions. One who lacks self-confidence will often dwell upon personal inadequacies and may judge certain tasks to be more difficult than they really are. Such behavior may help ensure failure through misplaced concentration (Bandura, 1989).

Most recently, Walter Mischel, building on the work of both Rotter and Bandura, has framed the determinants of human behavior in particular situations in terms of "person variables ". These include competencies (what we expect will be the outcome of our behavior); subject values (our goals and ideals); and self-regulation and plans (our standards for ourselves and plans for reaching our goals) (Mischel, 1973).

The locus of control element is important to us in areas of education, counseling, motivation, health issues, stress resilience, and with behavior and learning problems in children. Over the years, this has been demonstrated by various studies, tests, and papers.

A few examples in these areas include research concerning stress resilience and locus of control in children of Holocaust victims, (Baron & Eisman, 1996). Research in this abstract indicates stress resilience and coping mechanisms are different between children of escapees and children of survivors. This source also states that an internal locus of control has been found to have a protective function and is associated with stress resilience among children (Murphy & Moriarty, 1976), adolescents (Luther, 1991), and young adults (Werner, 1989), as well as, in adults in the middle to late stages of multiple sclerosis (Brooks & Matson, 1982). Werner (1989) found that " resilient youths" had developed a positive self-concept and internal locus of control by the time of their high school graduation. Gibbs (1989), noted that individuals who believe that they can control events will be less affected by disaster than those who do not believe that they can control outcomes and those who have lost the belief in their ability to prevent disaster. An

external locus of control has been found to be related to poor coping with stress and self-defeating personality styles (Schill & Beyler, 1992). The study states that an internal locus of control may prove beneficial in the " normal" world. A belief one could control one' s environment during the Holocaust would certainly have proved itself false; thus, survivors may have developed an external locus of control. An external locus of control may also have been adopted by the offspring as a result of an intergenerational transfer of their parents' experiences (Sigal, Silver, Rakoff, & Ellin, 1973). If that is so, there may be a significant difference in locus of control between children of Holocaust survivors and children of parents who escaped the Holocaust. The authors believed that children of parents who escaped would likely have greater internal locus of control, as many of their parents became masters of their own fate, managing to leave Europe after Hitler's rise to power and to avoid the direct impact of the Holocaust (Sigal, et al, 1973).

Elliott, (1997) claims that locus of control represents an important focus for the counseling of children with learning and/or behavior difficulties. The psychology of " perceived control" has been widely studied by those who seek ways to assist children with learning (Elliot, 1997). Locus of Control has been particularly explored with children experiencing difficulties in learning, affect or behavior. One popular locus of control scale for children (Nowicki & Strickland, 1973), for example, has been used in over 1,000 studies and published in more than two dozen languages.

Another theory similar and often considered the same as Locus of Control is the Attribution Theory. It is a theory about how people explain things. No matter the cause, we have a strong need to understand and explain what is going on in our world. Because people must explain, it opens up some interesting influence possibilities (Bem, 1972).

When we offer explanations about why things happened, we can give one of two types. One, we can make an external attribution. Two, we can make an internal attribution. An external attribution assigns causality to an outside agent or force. An external attribution claims that some outside thing motivated the event. By contrast, an internal attribution assigns causality to factors within a person. Or as the sinner would say, " I' m guilty, grant me forgiveness." An internal attribution claims that the person was directly responsible for the event (Bem,1972). As you can see, the Attribution Theory and Locus of Control is so closely related that it is often considered to be the same concept.

There are many examples of how the Attribution Theory affects children. The following studies are from published research. The first study was conducted with elementary school children in their classroom and with their teachers. Thus, this study does not have laboratory studies of influence, but rather are of real-world events. This also makes both studies being discussed more useful and somewhat more interesting (Bem, 1972). The first study concerns getting children to clean up the classroom. The second involves improving math performance and self-esteem (Bem, 1972).

A constant battle with younger children is to get them to clean up after themselves. In a classroom with twenty or thirty students, neatness makes a difference. The first example made children neater with Attribution Theory. Researchers set the children up such that the children performed a desired behavior, then were provoked to think about why they did the behavior. And, of course, the situation was set up so that the children would make an internal attribution (" I did it because I'm that kind of kid") (Lepper, M., Green, D., & Nisbett, R., 1973). Here' s what happened. First, the researchers established a baseline for littering. Then researchers visited the 5th grade

class and handed out candies wrapped in plastic just before the children went to recess at the playground. The researchers then counted the wrappers on the floor and those in the waste can and there were many more wrappers on the floor than the waste can, of course. Over the next two weeks people visited this classroom always commenting on how neat it was saying that it was the neatest classroom in the school, etc. After a two-week period of time, the researchers came back and handed out candies wrapped in plastic again and this time they found many more wrappers in the waste can. There was a very large change in the littering and cleaning up behavior of the children (Lepper, et al. 1973).

In summation, the researchers first used candy wrappers before and after as an objective measure of littering. Second, we have a variety of sources observing the classroom and offering explanations (" neat room, neat kids"). The writer states to also remember what is not going on. None of the sources modeled the correct behavior, so the kids were not copying a source with observational learning. None of the sources provided consequences of reinforcement, nor were rewards or punishments given for specific acts of behavior. None of the sources provided "arguments" about why kids should be clean and not litter. All the sources did was provide attributions. The analysis the researchers made is this. When the kids heard, " neat room, neat kids," they had to think about what had happened. In essence, they had to answer the question, " Explain why the room is neat?" Their answer was simple. "The room is neat because we don't litter. We're the kind of people who pick up after ourselves." In other words the children made internal attributions. And if you' re the kind of person who is neat and doesn't litter, what happens when you have a candy wrapper? That' s right, you throw it in the trashcan (Bem, 1972).

The second study (Miller R., Brickman, P., & Bolen, D. (1975), went much deeper to show impact of the Attribution Theory. This study was about math achievement and self-esteem. Other factors came into play such as ability, training with math and family, persistence, peer support with esteem. The study was looking at the question, " Can we change a child's math performance or self-esteem with attribution?" (Miller, R., et al, 1975).

First, the researchers used before and after measures of math achievement and self-esteem with 2nd grade students. Second, the researchers developed simple, little scripts for each of the students. All the teacher had to do was to read the folder provided for each student, then say or write the appropriate statement. Thus, this study was highly automated (Miller, R, et al, 1975). Each teacher simply followed the instructions in a preplanned, scripted way. Third, the researchers had three different kinds of treatment. Children either received the attribution training or they received the " persuasion" training or they received the " reinforcement" training. The study lasted eight days.

After the eight-day period of time all the children had higher self-esteem (on a self-report scale). But children in the attribution groups had the greatest increases in self-esteem (Miller, R., et al, 1975). As for the math scores, the children took two math tests after training. One occurred immediately after the eight training days. The second was given two weeks later. Each test was composed of twenty math problems.

Children that received the attribution training averaged 17.5 on the first test and 17.8 on the second test. (The baseline for everyone was 15). Children receiving persuasion training averaged 15.5 and 15.0. The children receiving reinforcement training averaged 16.0 and 16.0. Thus, the students with attribution training scored one

to two points higher than other groups and maintained that advantage during the two weeks following the training. (The standard deviation was approximately 1.0 so these mean differences are quite large.) The training was very simple. Each teacher followed a script of written or verbal statements. All the teacher did was provide the statement to each child. So, the teacher would tell each child during seatwork, "You are good at math." That's it. That's all that was done. The improvement was considerably higher for the students that received the attributional training statements (Miller, R., et al, 1975).

Not only has Locus of Control and the Attribution Theory had a lot to do with the training of children, it has also made a serious impact in health area. Research has shown, (Rothman, Turvey, & Fishkin, 1993), that women were shown one of two videotapes in an attempt to motivate greater use of mammography (screening test to detect breast cancer). One videotape described what " you" the viewer would learn from the test. The other tape stressed what "the doctor" would learn from the test. After one year the two groups of women were compared to see which group obtained more screening exams. Not surprisingly, the women who were given the internal attribution " (" you") were significantly more likely to have had a mammography in the preceeding year compared to the women who got the external attribution (" your doctor").

The strongest lesson from Attribution Theory seems to be its simplicity. There are two key steps to effective use of Attribution. First, it must be applied in a situation where people are thinking about why things are happening. Second, the explanation must be an internal attribution. Attribution Theory gives credence to the maxim, "Less is more." The less you do, and the more you let the receiver think, then the more change

you can get. You just have to make sure that the little things you do lead to internal attributions. Attribution Theory shows us that people can create new attitudes. In essence, Attribution Theory shows that people can create new attitudes or beliefs or behaviors depending upon the explanations they make. If they make external attributions (“ I threw the candy wrapper in the trashcan because the teacher was watching"), then they are unlikely to change their attitudes about littering. But, if they make an internal attribution (“ I threw the candy wrapper away because I must be a neat person”) then it is likely that they will come to view themselves as a different kind of person (Lepper, M., et al, 1973).

In the context of education, and in the essence of what this current study focused on, is locus of control and the types of attributions we make for our successes or failures in school important in the longevity of the pursuit of our education? If someone believes that his or her successes and failures are due to factors within their own control, such as effort or ability, then that person is said to have an internal locus of control. On the other hand, if someone believes that his or her successes and failures are due to factors outside of their own control, such as fate or luck, then that person is said to have an external locus of control (Findley & Cooper, 1983).

Research has shown that having an internal locus of control is related to higher academic achievement (Findley & Cooper, 1983). Internals earn somewhat better grades and work harder. This includes spending more time on homework as well as studying longer for tests. This makes sense because if you believe working hard will pay off, then you are likely to do so. According to Bender (1995), continued failure in spite of continued attempts at school tasks leads to an external locus of control. Further, a high

external locus of control, in turn, leads to a lack of motivation for study and school in general." If someone has an external locus of control, he or she may feel that working hard is futile because their efforts have only brought disappointment. Ultimately, they may perceive failure as their destiny. Developing an external locus of control also makes it easier to excuse poor performance without hurting the individuals self-esteem (Basgall & Snyder, 1988). By attributing their failure to fate, chance, or to the fault of someone else, they are able to escape the potential damage that may come from attributing it to personal flaws or lack of ability. This allows us to dismiss the belief that we are inadequate, keeping our self-esteem in tact. However, if we consistently use this excuse, we may lose our motivation to improve (Basgall & Snyder, 1988).

Rotter (1966, 1979) and others (e.g., Davis & Davis, 1972; Phares, 1979) extend this concept to suggest that the report of external beliefs serves a defensive function for some individuals. Phares (1979) said that failing and at the same time admitting to a belief in internal control frequently imply personal inadequacy. But failure coupled with an avowal of external beliefs would enable the individual to evade personal responsibility, thereby mitigating some of the unpleasant feelings of failure (Phares, 1979).

The self-protective potential of externality has been addressed more recently by Snyder, Higgins and Stucky (1983). In their presentation of theoretical model of the excuse-making process. A model that draws heavily on the attribution-of-responsibility literature. This model suggests that in order to maintain a positive image for oneself and others and to protect self-esteem, people will seek to reduce their responsibility for negative actions. In support of this position, these theorists noted that attribution studies

have provided evidence that under self-esteem threatening conditions, people tend to make self-serving attributions, taking credit for success and externalizing responsibility for failure (Bradley, 1978; Zuckerman, 1979).

In education, Anderman and Midgley (1997) felt that students who believe that their poor performance is caused by factors out of their control are unlikely to see any reason to hope for improvement. In contrast if students attribute their poor performance to a lack of important skills or to poor study habits, they are more likely to persist in the future. Students with an external locus of control are more likely to respond to failure by giving up hope and not trying harder, whereas those with an internal locus of control are likely to respond to failure with trying harder to improve (Anderman and Midgley (1997). If students are taught to have a more hopeful attitude (develop an internal locus of control), their grades tend to rise (Noel, Forsyth, & Kelley, 1987).

Locus of control also has an impact on responses to success. In one study (Kernis, 1984), subjects were led to make either internal or external attributions for their success at a given task. Those who made internal attributions performed better on the same task than on a different task when tested again, whereas those who made an external attribution performed better on a different task than on the same task. This suggests that internals are more likely to continue working at a task that they have succeeded at, while externals are likely to stop working on the successful task and move on to a different task (Kernis, 1984).

Similarly, locus of control differences dictated response to positive verbal feedback in a study of elementary students (Lonky & Reihman, 1980). After participating in a self-chosen activity (i.e., an intrinsically motivated task), students

received positive verbal feedback. Later, they were given the opportunity to participate in the same task again. Students with an internal locus of control spent more time at the task the second time around, whereas those with an external locus of control spent less time at the task. This suggests that if praise is given to externals for an intrinsically motivated task that their motivation actually declines when the praise stops (Lonky & Reihman, 1980).

Motivation to continue education and to succeed in the educational realm has a great deal to do with the students' locus of control (Carnegie Council on Adolescent Development, 1989). In education, the term " at risk" is used by educators, social service personnel, and others when referring to children who have a high probability to experience failure in school. The relationship between different demographic and social variables associated with failing in school were widely researched. In general usage, the term "at risk" designates a child or adolescent who is "at risk" of failing and/or eventually dropping out of school (Carnegie Council on Adolescent Development, (1989).

The Carnegie Council on Adolescent Development (1989) estimates that one quarter of the adolescent population is at risk of academic failure, with another quarter considered " moderately" at risk. School failure and the almost inevitable unemployment or underemployment that follows are among the most serious of these problems.

The costs to society and to the individual are high. Those who stay in school can avoid the risk of welfare: one added year of schooling means a 35 percent reduction in the chances of receiving welfare payments as an adult (Carnegie Council on Adolescent Development, 1989).

Dropping out of school before high school graduation is a commonly cited indicator of academic failure. Approximately one-fourth of 18 and 19 year olds have not completed high school (National Center for Education Statistics, 1989), while 17 percent of the sophomore class of 1980 dropped out before they graduated (National Center for Education Statistics, 1991). A substantial number of youth who drop out, however, will subsequently complete high school or obtain an equivalency diploma. For the sophomore class of 1980, almost half of those who did not complete high school on time had obtained a high school or equivalent diploma within 6 years (National Center for Education Statistics, 1991). It is believed that if delay of gratification can be achieved and internal control is being utilized then more students will stay in school, go further in school or return to school (Findley & Harris, 1983).

The relationship between locus of control and adult basic education has been investigated as well. Many learners drop out of adult basic education (ABE) prior to gaining necessary reading and writing skills. Drop out rates of 60% over a 6 month period have been reported (Kent, 1973). Since completion of programs would seem to depend on personal commitment, it is possible that locus of control is related to course completion in this area as well. Rotter (1966) states that people vary in the degree to which they recognize a contingent relationship between their own behaviors (action and resulting reinforcements (outcomes). Certain people, externals, generally believe that reinforcements are controlled by forces external to themselves such as fate, chance, luck, or powerful others. Others, internals, tend to believe that their own behaviors are the primary factors in receipt of reinforcements. For them, control rests with the power of

the individual. Rotter, further states that locus of control is a result of the history of reinforcement patterns experienced by an individual.

Because of the type of life experiences of many individuals in ABE programs, it is reasonable to assume that many may see reinforcements as a result of forces external to themselves. It therefore seems possible that completion of ABE programs is directly related to locus of control (Kent, 1973). There have been few studies in this relationship (Kent, 1983).

Rotter (1966) states that people who feel that reinforcements are controlled by forces outside of their control develop an external locus of control, while those who feel their own behaviors determine reinforcements develop an internal locus of control. Findley & Cooper (1983) state that given the types of life experiences that many people who drop out of high school or drop out of ABE classes have had, it is likely many have adopted an external locus of control. They investigated whether this was related to education achievement. It was speculated that the internally oriented people would be more likely to complete their courses and further their education (Findley & Cooper, 1983).

Many studies have been completed to identify if subjects have high internal control or high external control by various locus of control tests, attribution tests or by the Internal Control Index (ICI) that is being used as the instrument for this particular research. The internet is now also a vast source of tests and inventories in the area of locus of control. The Internet News Bureau (2001) states that how we perceive the cause of life events, be they positive or negative, has a lot to do with our capacity to succeed on a personal, professional and social level. Someone with a high internal locus of control

would generally perceive herself or himself as responsible for the outcome (their actions would have a direct bearing on the result), while a person with an external locus of control would most blame (or thank) fate, destiny, luck, society, or some other force beyond her control. Also, QueenDom.com on the internet lists may psychological tests and has just launched a new and improved locus of control test. This test assesses whether the test-taker attributes success and failure to internal or external, stable or unstable forces. The test is followed up with custom-tailored scores and digestible advice. Armed with an assessment and extensive and practical suggestions, the test-taker can proceed to adjust his/her worldview towards attaining maximum success and happiness.

Other examples of such tests include, but are not limited to, Where is your Locus of Control, (Jerabek, 1996). This is an original test and has 40 questions scored on a 5-point Likert scale. The choices for the answers are strongly disagree, disagree, partially disagree/disagree, agree, or strongly agree. Low scores on this inventory indicate external locus of control. The mean on this inventory was 60.61, the median 60, and the standard deviation is 6.29. The maximum value is 100 and minimum value is 0.

This test was revised using a 33-item inventory assessing the locus of control and attribution style. This inventory is the Locus of Control and Attribution Style Inventory – Revised, (Jerabek, 2000). This revised versions low scores indicate external locus of control, and high scores indicate internal locus of control. This test is suitable for adult and adolescent population. The number of items on this test is 33 with the mean being 65.71, the median 65.15, the mode 63.64, and the standard deviation 8.32. The maximum value is 95, the minimum value 20, and the sample size is 9327. The sample used in this

inventory was randomly selected from a pool of nearly twenty thousand participants. It included men and women, aged 10 to 80, who took the test on the internet.

Another scale is the Belief in Personal Control Scale (BPCS) (1987): A measure of God-mediated and exaggerated control by Joy Berrenberg (1987). This scale is a 45-item instrument designed to measure three dimensions of personal control: general external control – assesses the extent to which an individual believes his or her outcomes are self-produced (internality) or produced by fate or others (externality). The exaggerated control dimension measures an extreme and unrealistic belief in personal control. The God –mediated dimension measures the belief that God can be enlisted in the achievement of outcomes (distinguishing between individuals who believe they have no control over their outcomes and those who believe they control outcomes through God).

Julian Rotter (1966) devised a locus of control personality test to assess the extent to which an individual possesses internal or external reinforcement beliefs. Terry Pettijohn has developed a test based on Rotter's original idea. This test is scored on a 5-point Likert scale with total score possibilities ranging from 0 – 100 with the lower scores being very strong external control and the highest scores being very strong internal locus of control.

The Internal Locus of Control Index (ICI) (1984) by Patricia Duttweiler is a 28-item instrument designed to measure where a person looks for, or expects to obtain, reinforcement. An individual with an external locus of control believes that reinforcement is based on luck or chance, while an individual with an internal locus of control believes that reinforcement is based on his or her own behavior. Locus of control

is viewed as a personality trait that influences human behavior across a wide range of situations related to learning and achievement. There are two factors contained in the ICI, one that is called self-confidence, and a second that is called autonomous behavior (behavior independent of social pressure). The Internal Control Index was developed and tested with several samples of junior college, university undergraduate, and continuing education students. The total sample involved 1365 respondents of both sexes. Means are available that are broken down by age, group, sex, race, and educational and socioeconomic level and range from 99.3 to 120.8. Each item was scored on a 5-point Likert scale from A (" rarely") to E (" usually"). Half of the items are worded so that high internally oriented respondents are expected to answer half at the "usually" end of the scale and the other half at the "rarely" end of the scale. The " rarely" response is scored as 5 points on items 1, 2, 4, 6, 11, 14, 17, 19, 22, 23, 24, 26, and 27; for the remainder of the items, the response " usually" is scored as 5 points. This produces a possible range of scores from 28 to 140 with higher scores reflecting higher internal locus of control. The ICI has very good internal consistency, with alphas of .84 and .85. No test-retest correlations were reported.

Copies of the Locus of Control Inventory by Patricia Duttweiler were distributed to the subjects that agreed to participate in this particular study.

Appendix B

Request for Approval

IRB FORM A

July 1, 2002

Trula J. Stanley
IRB Coordinator
Marshall University School of Medicine
1542 Spring Valley Drive
MEB Rm. G-26
Huntington, WV 25704

Dear Ms. Stanley,

Please find enclosed two copies of my thesis proposal for my masters in psychology. You will find an original letter signed by the Adult Basic Education facility where we will distribute 50 of the surveys to students as one of the additions in the proposal. Also, please find the signature of Dr. Tony Goudy on the signature page and on your Request for Approval page as well as principal investigator and chairperson on my thesis committee (see Table of Contents for location).

I have spoken to you in the past concerning these details and hope that I am following your instructions so that I might begin my research as soon as possible. Dr. Goudy assures me that I am doing what is necessary and correct for your approval.

Please do not hesitate to call me at (304) 420-4525 daytime or (304) 863-8747 in the evening hours. Dr. Goudy has also asked that you call him if you have questions concerning this matter. Also he requests you phone him upon your approval of our research.

Thank you so much for your consideration in this matter.

Sincerely,

Valerie L. Smith
MA Candidate

Attachments

Appendix C

Written Letter of Permission

From Facility where Research is to be Completed

July 1, 2002

To Whom It May Concern:

I hereby am willing to distribute the Informed Consent Forms and Internal Control Index Surveys to fifty students participating in the GED program of Adult Basic Education in Parkersburg, WV.

I understand that this consent and the attached survey are to be given voluntarily and anonymously and I will follow these guidelines.

Sincerely,

Dianna Flanagan, Director
Adult Basic Education

Appendix D

Assessment of Locus of Control

Informed Consent Form

Informed Assessment of Locus of Control

Consent Form

Thank you for agreeing to participate in this project. This study is attempting to assess various aspects of a person's locus of control level. This particular study is comparing the Locus of Control between graduate level educated subjects and high school level or less educated subjects. The information gathered will be used towards the completion of my masters thesis.

I want to let you know that:

1) Your participation is entirely voluntary.

2) Your responses will remain anonymous and confidentiality will be maintained.

3) Neither your class standing or grades will be affected by refusing to participate.

Please answer the following questions and fill out the attached assessment as honestly as possible. Thank you again for participating in this survey.

1) Gender (Male of Female)_____

2) Age_____

3) Education Level_____(Highest Grade Completed)

Appendix E

Internal Control Index

Internal Control Index (ICI)

Please read each statement. Where there is a blank, decide what your normal or usual attitude, feeling, or behavior would be:

A = Rarely (less than 10%) of the time)
B = Occasionally (about 30% of the time)
C = Sometimes (about half the time)
D = Frequently (about 70% of the time)
E = Usually (more than 90% of the time)

Of course, there are always unusual situations in which this would not be the case, but think of what you would do or feel in most normal situations.

Write the letter that describes your usual attitude or behavior in the space provided on the response sheet.

1. When faced with a problem I _____ try to forget.

2. I _____ need frequent encouragement from others for me to keep working at a difficult task.

3. I _____ like jobs where I can make decisions and be responsible for my own work.

4. I _____ change my opinion when someone I admire disagrees with me.

5. If I want something I_____ work hard to get it.

6. I _____prefer to learn the facts about something from someone else rather than having to dig them out for myself.

7. I _____will accept jobs that require me to supervise others.

8. I _____have a hard time saying “no” when someone tries to sell me something.

9. I _____ like to have a say in any decisions made by any group I’m in.

10. I _____consider the different sides of an issue before making any decisions.

11. What other people think _____has a great influence on my behavior.

12. Whenever something good happens to me I _____ feel it is because I've earned it.

13. I _____ enjoy being in a position of leadership.

14. I _____ need someone else to praise my work before I am satisfied with what I've done.

15. I _____ am sure enough of my opinions to try and influence others.

16. When something is going to affect me I _____learn as much about it as I can.

17. I _____ decide to do things on the spur of the moment.

18. For me, knowing I've done something well is _____ more important than being praised by some else.

19. I _____ let other peoples' demands keep me from doing things I want to do.

20. I _____ stick to my opinions when someone disagrees with me.

21. I _____ do what I feel like doing not what other people think I ought to do.

22. I _____ get discouraged when doing something that takes a long time to achieve results.

23. When part of a group I _____ prefer to let other people make all the decisions.

24. When I have a problem I _____follow the advice of friends or relatives.

25. I _____ enjoy trying to do difficult tasks more than I enjoy trying to do easy tasks.

26. I _____ prefer situations where I can depend on someone else's ability rather than just my own.

27. Having someone important tell me I did a good job is _____ more important to me than feeling I've done a good job.

28. When I'm involved in something I _____ try to find out all I can about what is going on even when someone else is in charge.

Appendix F

Tables and Statistics

Subjects Results

	Age	Sex	Education	Score
1	39.00	1.00	2.00	122.00
2	25.00	1.00	2.00	130.00
3	25.00	2.00	2.00	102.00
4	26.00	2.00	2.00	126.00
5	25.00	2.00	2.00	120.00
6	25.00	2.00	2.00	118.00
7	31.00	1.00	2.00	117.00
8	38.00	2.00	2.00	111.00
9	39.00	2.00	2.00	126.00
10	42.00	1.00	2.00	133.00
11	24.00	1.00	2.00	96.00
12	26.00	1.00	2.00	112.00
13	27.00	2.00	2.00	125.00
14	27.00	1.00	2.00	122.00
15	25.00	2.00	2.00	128.00
16	29.00	1.00	2.00	122.00
17	31.00	2.00	2.00	114.00
18	30.00	2.00	2.00	113.00
19	30.00	1.00	2.00	88.00
20	26.00	2.00	2.00	130.00
21	26.00	2.00	2.00	134.00
22	28.00	1.00	2.00	111.00
23	25.00	2.00	2.00	120.00
24	24.00	1.00	2.00	125.00
25	33.00	1.00	2.00	118.00
26	31.00	2.00	2.00	100.00
27	25.00	2.00	2.00	101.00
28	25.00	1.00	2.00	122.00
29	27.00	1.00	2.00	116.00
30	29.00	2.00	2.00	128.00
31	24.00	2.00	2.00	116.00
32	26.00	2.00	2.00	131.00
33	26.00	1.00	2.00	128.00
34	30.00	1.00	2.00	130.00
35	47.00	2.00	2.00	132.00

36	34.00	1.00	2.00	100.00
37	24.00	2.00	2.00	97.00
38	25.00	1.00	2.00	101.00
39	24.00	1.00	2.00	111.00
40	24.00	2.00	2.00	122.00
41	26.00	2.00	2.00	109.00
42	25.00	2.00	2.00	126.00
43	26.00	1.00	2.00	124.00
44	28.00	1.00	2.00	129.00
45	29.00	2.00	2.00	105.00
46	28.00	2.00	2.00	101.00
47	27.00	2.00	2.00	97.00
48	27.00	2.00	2.00	105.00
49	25.00	1.00	2.00	101.00
50	38.00	2.00	2.00	139.00
51	37.00	1.00	1.00	86.00
52	44.00	1.00	1.00	87.00
53	43.00	2.00	1.00	108.00
54	35.00	1.00	1.00	127.00
55	19.00	2.00	1.00	75.00
56	55.00	1.00	1.00	101.00
57	37.00	1.00	1.00	92.00
58	48.00	1.00	1.00	108.00
59	21.00	2.00	1.00	102.00
60	35.00	2.00	1.00	98.00
61	37.00	2.00	1.00	81.00
62	40.00	2.00	1.00	98.00
63	19.00	2.00	1.00	85.00
64	47.00	2.00	1.00	104.00
65	32.00	1.00	1.00	117.00
66	30.00	1.00	1.00	108.00
67	46.00	1.00	1.00	92.00
68	58.00	2.00	1.00	111.00
69	35.00	2.00	1.00	89.00
70	29.00	2.00	1.00	67.00
71	58.00	2.00	1.00	119.00
72	23.00	2.00	1.00	94.00
73	24.00	2.00	1.00	90.00
74	57.00	1.00	1.00	112.00
75	23.00	2.00	1.00	66.00
76	40.00	2.00	1.00	127.00
77	50.00	2.00	1.00	129.00

78	35.00	1.00	1.00	111.00
79	19.00	1.00	1.00	97.00
80	27.00	1.00	1.00	95.00
81	40.00	2.00	1.00	111.00
82	62.00	2.00	1.00	118.00
83	16.00	1.00	1.00	82.00
84	19.00	2.00	1.00	87.00
85	24.00	1.00	1.00	111.00
86	44.00	2.00	1.00	96.00
87	45.00	2.00	1.00	111.00
88	51.00	1.00	1.00	86.00
89	18.00	2.00	1.00	88.00
90	22.00	2.00	1.00	100.00
91	57.00	1.00	1.00	114.00
92	26.00	2.00	1.00	95.00
93	42.00	2.00	1.00	103.00
94	18.00	2.00	1.00	86.00
95	18.00	2.00	1.00	96.00
96	46.00	1.00	1.00	115.00
97	45.00	1.00	1.00	98.00
98	52.00	2.00	1.00	93.00
99	40.00	2.00	1.00	123.00
100	45.00	2.00	1.00	95.00

Group Statistics

	Education	N	Mean	Standard Deviation	Std. Error Mean
Score	1.00	50	99.7000	14.7042	2.0795
	2.00	50	116.6800	12.3262	1.7432

Levene's Test for
Equality of Variances

		F	Sig.
Score	Equal Variances Assumed	.958	.330
	Equal Variances Not Assumed		

t-test for Equality of Means

		t	df	Sig. (2-tailed)	Mean Difference
Score	Equal Variances Assumed	-6.258	98	.000	-16.9800
	Equal Variances Not Assumed	-6.258	95.101	.000	-16.9800

t-test for Equality of Means

			95% Confidence Interval of the Difference	
		Std. Error Difference	Lower	Upper
Score	Equal Variances Assumed	2.7135	-22.3648	-11.5952
	Equal Variances Not Assumed	2.7135	-22.3669	-11.5931

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