

The Effects of Teaching Using Personality Grouping and Traditional Grouping on Students' Perception of
the Classroom Environment

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Certificate of Completion

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Abstract

The purpose of this research was to determine the effects of teaching using personality trait grouping and traditional grouping on students' perceptions of the classroom environment. The sample consisted of 16 fifth grade students from an elementary school in Elizabethton, Tennessee. Ten of the students were girls and 6 were boys. Fifteen of the students were Caucasian and one student was Biracial. Of the sample of the sixteen students, 7 were identified as having predominantly introverted personality traits and were the focus of the study. Data were collected using an International Personality Item Pool assessment, a Likert survey, and scores collected from assessments during personality trait and traditional groupings. Data were analyzed using paired samples t-tests. The results indicated no significant difference between the mean scores when students were taught using personality grouping and when taught using mixed grouping. Similarly, there was no significant difference in perceptions of the classroom environment when students were taught using personality trait grouping and traditional grouping. The results suggest further research is needed on this topic.

Chapter I

Introduction

Two well-known researchers, Cattell and Eysenck (as cited by Schmeck & Lockhart, 1983) identified introversion-extroversion as reliable personality dimensions. Particularly widely accepted is Eysenck's theory that there are inherited differences in personality which are controlled by the nervous system (Eysenck & Claridge, 1962). It takes less stimulation for introverts to perceive a stimulus and more for extroverts. This factor often causes the extrovert to seek out environments that provide high amounts of stimulation whereas introverts tend to seek out lower levels of stimulation.

Lewis Goldberg has refined the model that was originally established by Fiske in 1949 of personality domains (as cited by Young, 2014). He developed the "Big Five" structure of personality domains. He asserts that these domains are broad and encompass many traits associated with personality (Goldberg, 1993). The five domains that he has refined are openness, conscientiousness, agreeableness, neuroticism and extroversion. Extroversion is defined as outgoing/energetic vs. solitary/reserved. One of the practical applications of the Big Five model is within the employment arena. Research strongly suggests that job performance can be connected to the personality dimensions (Goldberg, 1993).

Current research turns our attention to the way in which personality domains may affect academic achievement in the classroom among school-aged children. Teachers have no control over the personality of students. Research suggests that there are differences in the ways in which introverted and extroverted students interact in the classroom setting. Introverts tend to develop close bonds with just a few friends. They have a deep sensitivity towards others and are compassionate. Although

introverts may enjoy interacting in the whole group, they most often prefer to work alone or in small groups and may require more time to respond to questions or probes. The typical activity in a classroom often proves overstimulating for introverted students. During break times such as lunch or recess, they may choose to seek out alone time in which they can recharge and relax. Extroverts, on the other hand, tend to feel dissatisfied if they are not surrounded by a group of friends. They tend to be less introspective about the needs of other students around them. The tendency of extroverts in the classroom is to seek out collaboration and new experiences. They most often enjoy conversation and responding to questions and presenting themselves before the group. Studies show that one third to one half of Americans are introverts. The collaborative, fast paced, and highly stimulating environment of the modern classroom, may not meet the needs of the students who seek out less stimulation and who tend to be more reflective. In fact, collaboration can sometimes inhibit creativity (Cain, 2012).

As proposed by Young (2014), introverted students may not have the ability to reveal their true understanding during work time. These students may need additional think time and may appear unable to react quickly to questioning. Extroverts may tend to seek out groups to work with and tend to welcome high stimulation which helps them to think. However, introverted students have the tendency to perform better when they have additional time to reflect and work in isolation (Cain, 2014). By examining the perceptions that students have about their learning environments, classroom practices can be informed.

Introverted children have the tendency towards fear and anxiety when they encounter new people and tend to be embarrassed and self-conscious when they perceive themselves as being evaluated by others (Rubin, Coplan, & Bowker, 2009). Introverted students tend to be more reserved and quiet while extroverted students tend to be assertive and talkative. It is very likely that a relationship exists between personality and learning styles. Research suggests that when learning styles

are matched to teaching methods, academic achievement will increase (Sternberg & Zang, 2001). Due to the convincing amount of research that exists of a connection between personality and academic achievement, and the significant role that the teachers play in academic success, an awareness of student perception of the classroom environment may serve as a useful tool in increasing academic performance.

Statement of the Problem

Current research in education seeks to provide students with collaborative, quick paced, and highly verbal learning environments (Cain, 2012). Some educators have overlooked the substantial amount of research that suggests a link between personality and academic performance. Since personality has such a strong connection to heredity, teachers may find it useful to familiarize themselves with student perception of the environment rather than attempting to alter personalities. Therefore the problem of this study was to determine what the effects of personality traits grouping and traditional grouping upon introverts' perception of the classroom environment.

Purpose of the Study

The purpose of this study was to examine the effects of teaching using personality traits groupings and traditional groupings upon students' perception of the classroom environment.

Significance of the Study

This study will provide evidence that the amount of interaction in the classroom varies dependent upon the perceptions that introverts and extroverts have of the classroom environment. Academic achievement may negatively impacted if a student does not have a positive perception of the classroom environment.

Limitations

The following limitation was encountered in this study:

1. The study was conducted in one classroom of one grade level which inhibits generalization of the results.

Definition of Terms

For the purposes of this study, the following terms were used:

Classroom environment: the circumstances, objects, or conditions in a classroom that surround a student.

Perception: The way a student thinks about his/her learning surroundings.

Introvert: One who seeks out low stimulation, is mostly timid, and not very talkative with a tendency towards reflectiveness.

Extrovert: One who seeks out high stimulation, is talkative and has a tendency towards low Conscientiousness.

Big Five Personality Model: Includes a model of five broad personality dimensions- openness, conscientiousness (efficient/organized v. easy going/careless) extroversion, agreeableness, and neuroticism (sensitive/nervous v. secure/confident).

Overview

This study consists of five chapters. Chapter one presents an introduction of the study, statement of the problem, statement of its purpose, significance, limitations, definition of terms and an overview of the study. Chapter two includes a critical review of the literature relevant to the study. Chapter three includes the research question and methodology of how information was obtained. The findings of the study are presented in chapter four. Chapter five contains a review of the study including the purpose, research questions and methods, a summary of the findings, conclusions drawn from the findings and discussion as well as recommendations for future study.

Chapter 2

Literature Review

Introduction

Current researchers turn our attention to the manner in which personality domains may affect academic achievement in the classroom among school-aged children. Teachers have no control over the personality of students. Research suggests that introverts make up at least 1/3 of the population and perhaps as much as 50%. The collaborative, fast paced, and highly stimulating environment of the modern classroom may not meet the needs of students who seek out less stimulation (Cain, 2012). Research indicates that when learning styles are matched to teaching methods, academic achievement will increase (Sternberg & Zhang, 2001). As cited by Tucker and Stronge, 2005, Dr. Bill Sanders, formerly at the University of Tennessee's Research and Assessment Center, and his colleagues conducted research which documents that the most important factor influencing student learning is the teacher. Due to the significant amount of research that exists of a connection between personality and academic achievement and the role that teachers play in academic success, an awareness of student perception of the classroom environment may serve as a useful tool in increasing academic performance. Early researchers such as C.G. Jung, Hans Eysenck, and Raymond Cattell laid the foundation for the definition of personality types. Each of these psychologists made contributions to the evolution of personality dimensions which are still used by researchers and psychologists.

Researchers often consider the interaction between nature and nurture as they define and categorize personality dimensions. Some theorists such as Gordon Allport (as cited by McCleod, 2014) defined personality as the organization of psychophysical systems within an individual which determine behaviors and thoughts. Similarly, Weinberg and Gould (as cited by McCleod, 2014) defined personality as the blend of characteristics that make a person unique. These views highlight the possibility of traits

that may only be possessed by one individual. When adopting this view of personality, case studies tend to be the primary source of data. An opposing view of personality is one that sees traits as having identical psychological meaning for everyone. Comparability among individuals is possible. Self-report personality questionnaires and factor analysis are the main sources for gathering information (McCleod, 2014).

Although introversion and extroversion are most often thought of as social preferences, MRI studies conducted by Kagan reveal that the differences between the two temperaments is actually highly measurable and have distinct brain differences. Extroverts tend to seek out stimuli whereas introverts have a tendency towards stimulus avoidance (INTJ, 2011). The research suggests that there are differences in the ways in which introverted and extroverted students may react in the classroom. Students may benefit from teachers who view their temperaments as different learning styles. The effectiveness of teaching may increase as educators consider personality traits and students' perceptions of the classroom environment (Cain, 2012).

Psychological Research

Jung's Work

C.G. Jung published *Psychological Types* in 1921. In his book, he defined and explained the thought processes, feelings and behaviors of introverts and extroverts. The current use of these terms has a different intent than Jung originally planned. He stated that there are two basic ways in which people react to circumstances and view life. Rather than focusing on interpersonal behavior, Jung thought of introversion and extroversion more as attitude types. Although no one lives as strictly one type or the other, these types appear very early in life (Myers, 2011). Jung's theory of personality distinguishes extroversion and introversion by the way in which each uses energy. When the types operate outside of

their dominant or preferred role, Jung proposed that individuals could experience fatigue and energy depletion. The dominant function guides personality (Myers, 2011). He observed that the two attitude types always worked in conjunction with either a perceiving or judging function. The four functions—sensing, intuition, thinking, and feeling combined with extroversion and introversion formed eight mental functions which individuals use to adapt to the world (Myers, 2011). It is important to note that these eight functions are in a typological hierarchy. The dominant function at the top of the hierarchy provides the overall direction of the personality and guides the manner in which an individual most comfortably adapts to the world (Myers, 2011).

Jung (as cited by Sharp, 1987) stated that external factors are the predominant motivating force for extroverts upon feelings, judgements and perceptions. Extroverts tend to behave in a candid and accommodating manner. They tend to quickly form attachments and move into new ventures without hesitation. The extrovert's energy tends to move to the outer world of people, places and things (as cited by Archie, 2013). Those who predominantly have a tendency towards extroversion are energized by being around people.

In contrast, the introvert has a tendency towards reflection and giving much less attention to their relationship with the world (Archie, 2013). They most often form deep and long lasting relationships. Introverts have vivid imaginations and are often inclined toward creativity. Although these types can enjoy spending time interacting with other individuals, they are often hesitant and prefer time spent alone in reflection. The introverted attitude is one that is characterized by an inward flow of energy (in Archie, 2013).

Hans Eysenck's Personality Research

German Psychologist Hans Eysenck (as cited by Benninton-Castro, 2013) theorized that the differences in behaviors of introverts and extroverts went beyond how each was energized. Eysenck

suggested that the differences were due to cortical arousal. Through factor analysis, a process in which large masses of data are collected, his original research revealed two types of temperaments, neuroticism and introversion/extroversion. He hypothesized that people have differences in the way in which their central nervous system reacts. He believed that introversion and extroversion was perhaps a balance between inhibition and excitation. As he continued his research, he realized that his samples excluded some populations. He expanded his work by performing studies in the mental institutions in England. As he analyzed the data, he went on to label additional dimensions of personality. His model known as PEN, includes Psychoticism, Extraversion/Introversion, and Neuroticism. Eysenck demonstrated that each of these dimensions is marked by particular habits and traits (as cited by Reeve, 2010). The extrovert tends to be carefree, dominant and adventuresome. Extroversion is also characterized by talkativeness and sensation seeking. On the opposite end of the continuum is introversion which is marked by traits such as being quiet, withdrawn and having controlled emotions. The introvert tends to spend time alone and is often uncomfortable in large crowds. Neurotics tend to be anxious and worry. They tend to be overly emotional and often have a difficult time calming. The third trait, psychoticism, which Eysenck added later in his research, is characterized by a lack of empathy and often acting in a cruel and aggressive manner (McLeod, 2014). Eysenck's PEN model has held an important place in the history of personality psychology. Many questionnaires have been developed that measure these three "super traits" (Reeve, 2010 p. 430).

Cattell's Contribution

Raymond Cattell was a British and American psychologist. He disagreed that personality could be understood through only a few dimensions of behavior. He believed that it was necessary to look at a much broader number of traits to get a true picture of one's personality. Cattell collected data from three sources. He used life record data such as school grades and absence from work. He also used a questionnaire designed to rate personality. The final source of his data are drawn from objective tests.

By using factor analysis, Cattell identified sixteen personality traits that were common to all people. He made the distinction between source and surface traits. He believed that the source traits, which were less visible to other people, were more important in describing than surface traits. Cattell created a personality test that measured each of his sixteen traits. The test has a total of 160 questions. There are 10 questions that relate to each personality trait (as cited in McLeod, 2014).

Measurement of Personality

Early researchers laid a foundation for not only the manner in which we define personality traits, but also in the manner in which we measure personality. Psychometrics is the psychological theory or technique of mental measurement (Merriam-Webster, 2015). The study is concerned with gathering information about trait characteristics that can be compared to those of other people from similar backgrounds. This process of gathering data is known as normative assessment. Often in describing the way babies behave or feel, people use the term temperament. Babies differ in the way in which they interact and respond to stimuli in the environment. Babies differ in the systematic ways in which they respond emotionally. They are aroused differently and they vary in their approaches, withdrawals, and attendance to various situations. In the field of psychometrics, personality is connected to more permanent characteristics or traits that are based on how individuals adjust to the environment and the differences between the individuals in doing so (Coaley, 2014). Early human temperament is thought to be the source from which personality develops. Starting at about age two or three months, five dimensions of temperaments can be identified: fearfulness, irritability and frustration, positive affect, activity level and concentration level. Psychology researchers have shown links between biology and psychology. For instance, when an individual is hungry or tired, the chances increase that the individual will become ill-tempered. One of the most well-known attempts to make a connection between biology and psychology came from Eysenck. Researchers have also brought to light the influence that socialization, social environment, family and educational differences may have upon personality. The

evidence for the biological connection to personality traits is inconsistent. It is difficult to determine the degree in which particular factors affect personality. However, all of the theories that have been presented have contributed to assessment (Coaley, 2014).

The type approach view of personality puts people into unique categories. The trait view places characteristics on a continuum and describe personality in terms of where people fall on that continuum. For example, with the continuum view, an individual may fall on the low or high end of a measurement of anxiety, however the type view would measure the individual as anxious. Many twentieth- century philosophers believe that psychology should focus on the unique inner experiences which are the only path to truly understanding personality (Coaley, 2014). This approach requires subjectivity and data is often gathered through interviews and case studies. Stephenson's Q-sort, developed in 1953, is one technique that has been developed to measure feelings and attitudes. The Q-sort has cards which contain statements such as, "I worry about what people think of me." Participants are required to sort the statements into piles of most relevant to least relevant (Coaley, 2014). The evaluation is repeated so that changes can be noted with the purpose of attempting to quantify feelings over time.

The Role Construct Reperatory Grid developed by George Kelly is based upon the assumption that everyone views events differently. This grid is a method of gathering self- ratings in relationship to a set of statements. Initially, participants are presented with names of groups of people which are in groups of three. The participant is asked to decide upon how two of the three is similar and how the third is different from the others. The participant will then be asked to sort people into groups of personal relevance. Participants are encouraged to sort those individuals by psychological attributes rather than attributes such as those that are physical descriptions. This process is repeated until a matrix can be built of elements and constructs. The participant can then be asked to rate each element in terms of each construct. When this matrix is examined, dimensions which are important to the participant can be

determined. A wide range of analysis is possible within Kelly's assessment. The method can provide useful information about the way in which "people perceive the world, how they organize attitudes and beliefs, how emotional responses are generated and their influences upon behavior and personality" (Coaley, 2014, p. 246).

Based upon his discovery of 21 personality traits, Eysenck created a number of questionnaires. Building upon Eysenck's work, Cattell set out to determine whether or not patterns of personality could be objectively measured. He developed and refined assessments to measure models of other clinical psychologists. He initially collected 17, 953 trait names used to describe behavior. He combined the data with information from other sources such as observations. He used questionnaires to study the perceptions of individuals. Then, in setting up pre-planned situations, he collected data based off of what people did rather than what they said. All of the data were collated and subjected to correlation and factor analysis techniques. As individuals were rated and more questionnaires were developed and presented, the 16 Personality Factor Inventory was formed. Cattell's original model has gone through many revisions and today there are equivalent models that measure the same factors. Interviews, observations and questionnaires followed by factor analysis were the primary means of measurement in both Eysenck's and Cattell's work. Their assessment materials contained many dimensions. Since their work, researchers have discovered that nearly all areas of personality can be reduced to five components. As cited by Coaley, 2014, through their research, Costa and McCrae (1985; 1992) produced five main factors which make up the modern model of personality. Often, the labels for these traits differ across questionnaires, the ideas are the same. The most common terms, known as the Big Five, are extraversion, emotional stability, agreeableness, conscientiousness and openness to experience.

The psychometric, or trait model of personality, focuses on how individuals adjust to the environment and the differences that exist between individuals. It involves a normative process which places scores on scales and the use of statistics. In order to make that process occur, questionnaires are developed.

These questionnaires are usually self-report. People answer questions about themselves. Questionnaire items are typically created to contain both desirable and undesirable aspects on both ends of the continuum scale. Inventory scales are susceptible to some measurement error. None are 100% accurate. Reliable inventories usually contain carefully researched items. Due to the fact that there is always a margin of error present, mean scores should be viewed as a guide to how individuals may behave in particular circumstances (Coaley, 2014). The validation of the existence of personality traits and the years of research dedicated towards defining and assessing it provides a reference when considering the perceptions of the classroom environment by students when they are taught using personality groupings and the effects that may occur upon their academic achievement.

Personality in the Classroom

Theories implicate that student learning may increase when they are engaged in an environment in which they perceive as being conducive to their personality inclinations (Cain, 2012). Most school systems are designed to meet the needs of the average student. In 1983 Howard Gardner developed the theory of multiple intelligences which highlights various skills and learning styles that individuals may possess (as cited by Smith, 2002, 2008). However, school administrators and teachers often are driven to mold student learning styles into those which they believe are the most efficient. When considering the studies that have been carried out which make the connection between physiological and even genetic link to introversion and extroversion, Many times, those learning styles are connected to personality traits such as introversion and extroversion, which may not be modifiable (Lockhart & Schmeck, 1983). Referring back to one of the most commonly accepted theories for explaining individual differences, Eysenck places a great deal of emphasis upon the variations in neurological functions. He in part defines introverts as having weak neural inhibition which makes it more difficult for sensory stimulation to activate the brain. The brain of an introvert can become easily overstimulated. Jerome Kagan's studies indicated that over arousal may interfere with attention and short term memory (as

cited by Cain, 2012). In a classroom setting when students may need it the most, their attention can become severely impaired. Therefore, environments which offer low levels of stimulation are very appealing. In opposition, extroverts seek out high levels of stimulation due to their requirements of their brains for stronger stimulation. Therefore, students may experience higher levels of learning when they are placed in environments that are well matched to their personality traits. There are dangers in ignoring or trying to change the tendency of introversion or extroversion among students (Dan, & Schmeck, 1983).

Introversion many times is viewed as a second-class personality trait. Particularly in Western society, introversion is often viewed as an illness that needs to be cured (Cain, 2012). In her book, *Quiet: the Power of Introverts in a World that Can't Stop Talking*, Susan Cain addresses the concern between "the man of action" and "the man of contemplation." It focuses on individuals who view themselves as reflective, unassuming, sensitive, calm, solitude seeking, and perhaps, thin-skinned. The "man of action" then has a self-perception of being assertive, sociable, active, excitable, lighthearted and thick-skinned. Jill Burrus and Lisa Kaenzig (as cited by Cain, 2012) conclude that many schools are designed for extroverts. Unfortunately, very little is offered to the introverted student that suits their learning style best. The school environment can be "highly unnatural" (Cain, 2012 p. 253) from the perspective of the introverted student. Often classroom instructional time is dominated by whole class discussions in which teachers prod students to speak up and participate. Even the arrangement of furniture into pods or clusters assumes that every student must be willing, prepared and capable of constantly communicating and learning through collaboration. Due to the fact that very little time is dedicated to creating and reflecting, the energy of the introverted student becomes quickly depleted. Susan Cain urges educators to consider making changes to classroom environments rather than focusing upon trying to change student personality. Extroverts tend to respond to movement, collaborative work and various other forms of stimulation. Introverts prefer to enjoy lectures, work on independent projects and become

energized by downtime. James McCroskey, (as cited by Cain, 2012) is a communication professor. He states that quiet students should not be placed in high-interaction areas in the classroom. Instead of being encouraged to talk more, they may feel threatened and have trouble concentrating. McCroskey's studies have indicated that apprehension will increase and that self-esteem will decrease when highly apprehensive students are forced to present orally. Extroverts will seek out those opportunities to interact with their peers.

They tend to enjoy talking and draw energy from being surrounded with many friends.

Rather than viewing introversion as something that needs to be repaired, Cain urges teachers to "enjoy the participatory students" without forgetting to "cultivate the shy, gentle, and autonomous child." (Cain, 2012 p.

265) Introverts relate to others in their own way. Introverts often are highly sensitive to the needs of others. This high concern that they tend to have for the well-being of others may easily cause them to feel overwhelmed. These students, even as they approach upper grades, may need help sorting through solutions for problems that may arise through social encounters. However, whenever these individuals make connections, they tend to be extremely loyal friends. It is important for teachers to remember that introverts will not only have the tendency to react to new people, but also to new places and events. Just as parents have a key role in recognizing their children's hesitancy in approaching new situations by respecting their child's limitations and exposing them to novelty gradually, students will also benefit from similar considerations within the classroom. In our society, the word "shy" is negative. The more and more that children hear others calling them "shy", the higher the likelihood that they will take on the belief that shyness is a fixed trait and the fear that they feel at one point in time will never go away rather than believing that they are capable of controlling the fears that may be attached to interacting with people and new situations (Cain, 2012).

Cain reported that one third to one half of people of the world are introverts. This means that every classroom is likely to house not only one but many introverted students. Teachers should think of these students as having a different learning style. In order to produce maximum learning situations for these students, a balance of teaching methods and strategies should be used which will serve all students in the classroom. A mix should exist between collaboration and independent work. Balance fast paced and interaction lessons with time for creativity. Introverts will often excel when they are given new information. When placing students in small groups, introverts will tend to react most favorably when they are sure of their roles within the groups. In order to avoid the assumption that quiet students lack motivation, they should be given the opportunity to demonstrate their learning in environments that are suited to their individual learning styles.

Conclusion

In conclusion, significant amounts of research exist linking personality and academic achievement and the role that teachers play in academic success. Research conducted by C.G. Jung, Hans Eysenck, and Raymond Cattell provide a foundation upon which personality dimensions can be defined. When considering the various types of personalities that can possibly be present in a classroom, educators can become informed as to the various perceptions of the classroom environment that students may hold. Cain pushes us to consider avoiding the practice of exalting one personality type over another. Instead, she encourages educators to view differences between introverts and extroverts as different learning styles and strive to accommodate both of their needs. Through study of the effects of teaching using personality traits grouping and traditional grouping on student perception of classroom environment, the field of education may become more informed as to what types of environments should be provided in order to maximize student academic achievement.

Chapter 3

Methodology and Procedures

The purpose of this study was to examine the effects of teaching using personality traits grouping and traditional grouping on students' perception of the classroom environment. After personality type was determined, students were provided instruction while participating in personality trait groupings and in traditional groupings. Students were given assessments after participating in both grouping types. Performance was compared between the two types of groupings in order to determine if there was a difference in student academic outcomes. Similarly, students' perceptions were also compared during groupings.

Population

This research study took place in a rural public elementary school in Southeast Tennessee. The school serves 407 students. 64% of the students were eligible for free or reduced lunch. The demographics were as follows, 94% were white, 3% were Hispanic, 2% were of two or more races, and 1% were black.

Sample

The sample for this study was drawn from one 5th grade class of 16 students. The class was made up of 10 and 11 year old students. There were 9 girls and 7 boys. Students were not randomly selected; they were all in a class that was composed at the beginning of the year.

Data Collection Instruments

Data for this study were collected using teacher made tests and Mini International Personality Item pool tests (IPIP). The students were administered the IPIP to determine their personalities. IPIP measures the Big Five personality test domains. This personality measure included four items per trait. The model had consistent acceptable internal consistencies across five studies α at or well above .60 (Baird, Donnellan, Lucas, 2006). The Mini IPIP scales showed a comparable pattern of discriminant and criterion-related validity with other Big Five measures (Baird, Donnellan, Lucas, 2006).

After identifying introverts in the class, mathematics morning work was selected for the study. The introverted students' scores were collected from assessment of the work completed during their time spent in mixed personality trait groupings and in introvert trait grouping. At the end of the study, they were also administered a survey to determine their perception of the classroom environment. The scores and perceptions were compared.

Procedures

Before the study began, permission was gained from the school principal, and the Institutional Review Board. Permission forms were then sent home to the parents of the students who would be participating in the study. Upon receiving appropriate permission, the study was carried out during mathematics instruction for a duration of 10 days.

The sample consisted of one fifth grade class that was made up of 16 students, ages 10-11. All students were given a self-report IPIP assessment. All vocabulary used on the personality IPIP was reviewed orally with the entire group. After examining the data, 7 students were identified as introverted personalities were using the scales on the Big Five model and the study was implemented.

The first half of the study was conducted as the identified introverted group completed their morning work assignments with mixed personalities represented in the sample. Students worked independently and were allowed to talk over any of the tasks with other students at their table area. Scores were collected daily. During the second half of the study, students identified as introverted were grouped together as they completed their morning work assignments. Students worked independently and were allowed to talk over any of the tasks with other student in the personality trait grouping. Scores were collected daily.

Students were observed as they worked in traditional mixed personality grouping and when they worked with the personality trait grouping. At the end of the second half of the study, the students were administered a survey of perceptions of the classroom environment. The scores and perceptions were compared.

Research Questions

Research Question 1: Is there a difference between introverted students' scores when they are taught using mixed personality groupings and introvert groups?

Research Hypothesis 1: There is a difference between introverted students' scores when they are taught using mixed personality groupings and introvert groups.

Null Hypothesis 1: There is no difference between introverted students' scores when they are taught using mixed personality groupings and introvert groups.

Research Question 2: Is there a difference between introverted students' perceptions of the classroom environment when they are taught using mixed trait groupings and when they are taught using introvert groups?

Research Hypothesis 2: There is a difference between introverted students' perceptions of the classroom environment when they are taught using mixed trait groups and when they are taught using introvert groups.

Null Hypothesis 2: There is no difference between introverted students' perceptions of the classroom environment when they are taught using mixed trait groups and when they are taught using introvert groups.

Chapter 4

Data Analysis

Introduction

The purpose of this study was to examine the effects of teaching using personality trait grouping and traditional grouping on students' perception of the classroom environment. The study was conducted at an elementary school in Elizabethton, Tennessee with 5th grade students. In this study, academic achievement was measured with scores on morning math tasks. Personality was measured with a self-report International Personality Item Pool (IPIP) assessment and perception of the classroom environment was measured with a Likert survey. This chapter delineates the data organization and analysis.

Collection of Data

The population of this study came from a 5th grade class at an elementary school in Elizabethton Tennessee. At the time that the research was conducted, the school served 407 students. 64% of the students were eligible for free or reduced lunch. Of these students, 94% were Caucasian, 3% Hispanic, 2% were of two or more races, and 1% were Black. The sample for the study consisted of 9 girls and 7 boys from a fifth grade class. The demographics of this sample are displayed in Table 1. Data collection instruments included scores on morning math assignments, a self-report IPIP assessment, and a Likert survey.

Table 1

Demographic Profile of Participants

Gender	Frequency (f)	Percent (%)
Male	7	43.75
Female	<u>9</u>	<u>56.25</u>
<i>Total</i>	16	100
Race		
Caucasian	15	93.75
Hispanic	0	0
Two or More Races	1	6.25
Black	<u>0</u>	<u>0</u>
<i>Total</i>	16	100

Research Questions and Related Hypotheses

To guide the analysis of the data collection for this study, three research questions were considered. Each question was related to a research hypothesis. The 0.05 level of significance was used to analyze all data.

Research Question 1: Is there a difference between introverted students' scores when they are taught using introvert groupings and mixed personality groupings?

In order to answer the research question, scores collected from instruction during introvert grouping were compared to scores collected from instruction during mixed personality grouping. The mean score during introvert grouping instruction was 73.0, and the mean score during mixed personality grouping was 70.2.

Research question one was related to research hypothesis one.

Research Hypothesis 1: There is a difference between introverted students' scores when they are taught using mixed personality groupings and introvert groups.

A paired sample t-test was calculated comparing the mean scores from introvert and mixed group instruction. There was no significant difference found between the means of the two groups ($t(7) = -2.8$, $P = .627$). The mean for introvert group scores group scores ($M = 73.0$, $sd = 17.510$) was not different from mixed group scores ($M = 70.2$, $sd = 10.92$). Therefore the null hypothesis was retained. The Results are displayed in Table 2.

Table 2

Paired samples t-test for Introvert Group Scores and Mixed Group Scores

Condition	M	SD	df	t-value	Sig. (2-tailed)
Introvert grouping scores	73.0	17.51	7	-.568	.627
Mixed grouping scores		70.2	10.92		

Note: $p < .05$

Research Question 2: Is there a difference between introverted students' perceptions of the classroom environment when they are taught using mixed trait groupings and when they are taught using introvert groups?

In response to research question 2, Likert survey composite scores were compared when the students were in mixed groups and introvert groupings. The mean scores were 9.33 for mixed groupings and 13.33 for introvert groupings.

Research question three relates to research hypothesis three.

Research Hypothesis 2: There is a difference between introverted students' perceptions of the classroom environment when they are taught using mixed trait groups and when they are taught using introvert groups.

A paired samples t-test was conducted to compare the scores from Likert survey questions of perceptions during mixed groupings and introvert groupings. There was no significant difference found between the means of the two groups ($t(7)=-1.057$, $P=.401$). The mean for the perceptions during mixed groupings ($M=9.33$, $sd= 2.89$) was no different than in introvert groupings ($M=13.33$, $sd=7.50$).

Therefore, the null hypothesis was retained. The results are displayed in Table 3.

Table 3

Paired samples t-test for Perceptions during Mixed Grouping and Introvert Grouping

Conditions	M	SD	df	t-value	Sig.(2-tailed)
Perceptions during Mixed Grouping	9.33	2.89	7	-1.057	.401
Perceptions during Introvert Grouping	13.33	7.50			

Note: $p < .05$

Chapter 5

Summary

This chapter contains a summary of findings, conclusions, recommendations, and implications for the research conducted to examine the effects of using personality grouping and traditional grouping on students' perceptions of the classroom environment.

Summary of Findings

The summary of findings will give a brief description of the results of each of the research questions. When research question one was asked, is there a difference between introverted students' scores when they are taught using introvert groupings and mixed personality groupings and the results were examined, the results indicated no significant difference ($t(7) = -2.8, P=.627$). These results suggest that there is no significant difference in student's test scores when they are taught in personality trait groupings in comparison to when they are taught in traditional groupings. These results are not consistent with the literature review. Dan and Schmeck (1983) reported that higher levels of learning may be experienced when personality tendencies. According to Cain (2012), students will reach higher academic success when the unique needs of those who are introverted are met. Although there was no significant difference in the student's test scores when they were taught using personality trait groupings and traditional groupings, the mean scores were higher when students worked in introvert trait groupings. The researcher observed that the students seemed more relaxed in the personality trait groupings. They tended to volunteer to answer questions more frequently and were generally more verbal.

In regards to research question two, which asked, is there a difference between introverted students' perceptions of the classroom environment when they are taught using mixed personality trait groupings

and when they are taught using introvert groups, and the results were examined, no significant difference was found ($t(7) = -1.057, P = .401$). These results are not consistent with the literature review. Burrus and Kaenzig (as cited by Cain, 2012) conclude that many schools are not designed for introverts and that very little is offered that suits their learning style. Early researchers such as Eysenck (as cited by Reevy, 2010) describe the introvert as tending to spend time alone and often feeling overwhelmed in a crowd. Although there was no significant difference found in student's perceptions of the classroom environment when they were taught using mixed personality trait groupings and when they were taught using introvert groupings, the mean for perceptions when the students were taught using introvert groupings was higher than when they were taught using mixed personality trait groupings. This suggests that they tend to view classroom environments more favorably when taught in introvert groupings.

Conclusion

The purpose of this study was to examine the effects of teaching using personality trait groupings and traditional groupings upon students' perception of the classroom environment. The results indicated that there were no significant differences in the average scores of students when they were taught using personality trait groupings and traditional groupings. Similarly, there was no significance found in the perceptions of the introverted students when they were taught with students of common personality traits only and during instruction occurring during traditional mixed personality groupings.

Recommendations

1. Further research should be conducted using a true experimental design to determine whether there is a difference in the effects of teaching using personality trait groupings and traditional grouping on students' perception of classroom environment.
2. The study should be conducted using a larger sample size that includes several schools.

3. Future research could use different measurements of academic achievement such as formal summative assessments scores.

Implications

1. Educators should consider personality traits when planning and implementing instruction. Scores were higher when introverted students were taught along with students who had similar traits.
2. Educators should consider administering a personality assessment at the beginning of the school year as well as making regular observational notes on student choices and behaviors and then allow that information to guide instructional strategies.
3. Educators should use a variety of strategies including independent work and extended reflection time in order to increase higher achievement among all personality types.

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