ABSTRACT

AN EXAMINATION OF RELATIONSHIPS BETWEEN STUDENT PERSONALITY TYPES AND TWO DIFFERENT HIGH SCHOOL SCHEDULING PRACTICES

By

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The primary purpose of this study was to find out if personality types, as measured by the Myers-Briggs Type Indicator, function differently in the areas of attendance, grade point average, attitude toward school, involvement in extra-curricular activities, and attitude toward subject matter when subjected to scheduling practices of a flexibly or traditionally scheduled school.

The resolution of these objectives was sought by administering and scoring the Myers-Briggs Type Indicator and a Personal Data Questionnaire to 120 students attending a flexibly scheduled high school and 120 students attending a traditionally scheduled high school. Along with these measures, school records consisting of grade point averages and attendance records were obtained for all subjects.

The hypotheses of this study were tested using standard statistical procedures. Means, standard deviations, and intercorrelations for all measures were obtained. Each question was then analyzed by using a two-way analysis of variance. Scheffé and

Bonferroni post-hoc tests were used to isolate differences when significant F-ratios were found.

After the data were collected and analyzed, no significant differences were found in the manner personality types function in the areas of attendance, grade point average, attitude toward school, involvement in extra-curricular activities, and attitude toward subject matter when subjected to scheduling practices of a flexibly or traditionally scheduled school.

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CHAPTER I

INTRODUCTION

An attempt to meet the academic, social, and emotional needs of students in the public schools has gained much attention in the last decade. In years past, society seemed to emphasize the education of the masses rather than the education of individuals. Currently, more time and effort is being spent in the areas of developing individual potential and individual needs. Several ways of meeting individual needs have been devised during the last few years. The addition of school scheduling procedures and philosophy to allow for team teaching, individualized instruction, alternative educational environments, and flexible scheduling are some of the techniques that have been devised to meet individual student needs.

Since ways to meet student needs are continually being examined, an attempt was made in this study to analyze student personality types and their relationship to attendance, grade point average, attitude toward school, involvement in extra-curricular activities, and attitude toward subject matter when subjected to scheduling practices of a flexibly or traditionally scheduled school.

The Problem

Statement of the Problem

Since the development of flexibly scheduled schools, I have often been concerned that some students probably didn't have the personality type to allow them to function in environments where freedoms were allowed in the manner students use their time, space, and resources.

The problem of concern in this study is: Do personality types function differently in areas of attendance, academics, and extra-curricular activities in a flexibly scheduled secondary school as opposed to their functioning in a traditionally scheduled secondary school?

The traditionally scheduled secondary school concept is designed in such a manner that students' schedules and the subject matter to which they are exposed are predetermined by the persons responsible for the functioning of the school in a rigid time frame of class schedules. A flexibly scheduled school is designed to allow students more flexibility and independence in the areas of schedules and subject matter to which they choose to be exposed. According to Alexander and Hines, a flexibly scheduled school is organized with more freedom to allow "students to do independent work, make use of laboratories, resource centers, libraries, study areas and social areas."[1]

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[1]William M. Alexander and Vynce A. Hines, Independent Study in Secondary Schools (New York: Holt, Rinehart and Winston, Inc., 1967), p. 1.

Students not using their time wisely when given the freedoms allowed in a flexibly scheduled school has been a basic concern of adults since the conception of flexibly scheduled schools. Traditionally scheduled students not enrolled in class must spend their time in a scheduled, supervised study room. Attendance is usually taken and rules and regulations are established as to how students must spend their time while in the study area. Flexibly scheduled students have the option of working in open labs, attending unsupervised areas for study purposes, or going to an area designed for socialization purposes rather than those purposes of academics. If too much time is spent in socialization areas, lower grades and lower overall performance in academic work may be a result.

Other students also may be intrinsically motivated to take advantage of the open labs and study areas with a possible result of higher academic performance.

My interest was to examine differences between various personality typed students in a traditionally scheduled school as compared to students in a flexibly scheduled school on academic, attendance, and social measures.

Since the emphasis of this study was focused primarily upon the functioning of personality types, separations were not made according to sex and grade levels of the secondary students sampled.

Purpose of the Study

The primary purpose of this study was to find out if personality types, as measured by the Myers-Briggs Type Indicator,

function differently in the areas of attendance, grade point average, attitude toward school, involvement in extra-curricular activities, and attitude toward subject matter when subjected to scheduling practices of a flexible or traditional school structure. The student sample tested consisted of two groups: one from attendance in a flexibly scheduled school, the other including students attending a traditionally scheduled school.

The main objectives of the study were: first, to determine the personality types of students in both of the groups being sampled; and second, to determine whether there are any relationships between demographic factors as defined by this study.

Research Questions and Hypotheses

In order to realize the purpose of this study, answers to the following questions and hypotheses were sought. The purpose of the questions is to provide a framework upon which this study is based.

Research Question I: What is the personality type distribution between students attending a flexibly scheduled school as opposed to those students attending a traditionally scheduled school?

Research Question II: What differences exist with student personality types in relationship to attendance measures when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 1: There will be no significant difference between student personality types and daily attendance rates when flexibly or traditionally scheduled.

Null Hypothesis 2: There will be no significant difference between student personality types and period absence rates when flexibly or traditionally scheduled.

Research Question III: What differences exist in student personality types in relation to grade point average when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 3: There will be no significant difference between student personality types and grade point average when flexibly or traditionally scheduled.

Research Question IV: What differences exist in student personality types in relation to their attitudes toward attending school when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 4: There will be no significant difference between student personality types and their attitude toward attending school when flexibly or traditionally scheduled.

Research Question V: What differences exist in student personality types in relation to extra-curricular school activities a student is involved in when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 5: There will be no significant difference between student personality types and involvement in extra-curricular activities when flexibly or traditionally scheduled.

Research Question VI: What differences exist in student personality types in relation to their attitude toward school course-work when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 6: There will be no significant difference between student personality types and their attitude toward school course-work when flexibly or traditionally scheduled.

Importance of the Study

Individuals are unique and do not profit equally from the same educational environment. Fred Wilhelms, formerly of the National Association of Secondary School Principals, said: "If we had to pick out one trend underlying a great many of the

developments now occurring in secondary education, it would be the drive to reach the individual student and help him develop."[2]

Most secondary schools seem to be operating in a monolithic manner, either completely traditionally scheduled, or flexibly scheduled. If different learning environments were provided within each secondary facility, student educational and personal needs should be met appropriately.

Information from this study may be provided to show that the manner in which student personality types are scheduled may have an effect on attendance, achievement, and extra-curricular involvement in school.

Limitations of the Study

A limitation of this study was that grade point averages for all subjects involved were used to measure academic achievement. In studying the subjectiveness of grade point average, Ronald Walden said, "It is apparent that grades assigned by teachers are quite subjective. . . . However, a student's grade point average is one of the few quantifiable criterion available for evaluating academic achievement."[3]

Student grade point average measures still serve as a basis for student admission into universities and colleges and often are weighted heavily before one obtains employment.

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[2]Fred Wilhelms, "Helping Teachers in the Art of Teaching," NAASP Spotlight 74 (September-October 1966): 37.

[3]Ronald L. Walden, "Flexible Scheduling: Factors Related to Change in Academic Achievement" (Ph.D. dissertation, Northwestern University, June 1966), p. 16.

A second limitation in this study was the sampling technique used. Because of the restriction placed upon me in the design of this study by the flexibly scheduled school, cluster sampling was used to select students within classrooms to sample. Care was taken to select classes that all students needed in order to complete graduate requirements. However, this sampling technique has not been as reliable as the simple random selection technique.

Another limitation was the variability of individual questionnaire interpretation and errors made in filling out test forms and data sheets. Care was taken to see that all questions were properly answered and only allowable help was given to subjects involved in this study.

Definitions of Terms Used

Flexible scheduling--In a flexibly scheduled school students are still scheduled, but have 40 percent of their time unscheduled during the day to use as they wish. They may study, socialize, use library facilities, or involve themselves in open labs. The student's schedule is not flexible, but the student has open time slots within the schedule and has the freedom of deciding how to use them.

Traditional scheduling--Ronald Walden said, "A traditional schedule is one in which students meet each class for the same length of time five days per week with the same students attending each meeting."[4] In a traditionally scheduled school students are scheduled completely so that no unscheduled time exists.

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[4]Ibid., p. 19.

Academic achievement--In this study academic achievement relates to the grades given to students while attending a traditional or flexibly scheduled secondary school. These grades reflect the cumulative grade point average while in attendance at a particular school.

Extra-curricular activity--In this study extra-curricular activity is defined as any activity students are involved in outside of the school hours, e.g., football, baseball, Boy Scouts, etc.

Organization of the Study

In Chapter I the introduction to and purpose of the investigation, questions to be answered by the study, importance of the study, limitations of the study, term usage, and organization of the study were included.

The Myers-Briggs Type Indicator is reviewed in Chapter II. In addition, literature and research which is relevant to the purpose of this study or has a bearing on this study is reported.

In Chapter III the research design, description of the questionnaire, and description of the analysis process are included.

The setting of the study, sample population, intercorrelation analysis, and statistical tests are reported in Chapter IV.

Presented in Chapter V are the summary, conclusions, and recommendations of the study.

CHAPTER II

LITERATURE REVIEW

This chapter will present a description of the Myers-Briggs Type Indicator and review the pertinent literature significant to the investigation of this study.

For organizational purposes, this chapter is divided into two primary divisions. The first will discuss the development, purpose, and technical aspects of the Myers-Briggs Type Indicator. The second portion of this chapter will cite important studies having some relationships to this investigation and direct relationships with the Myers-Briggs Type Indicator.

Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator was developed in an attempt to study personality types in relation to Carl Jung's theory of Psychological Types. During his career as a psychologist, Carl Jung became aware of different behavior patterns among his clients. He organized these types and categorized them into several distinct personality types. Jung, through his studies and investigations, developed a theory that each person had a preference for either extraversion or introversion.[1] In addition, he believed that each

[1]Carl G. Jung, Psychological Types, trans. H. G. Baynes (New York: Harcourt, Brace & Company, 1953), p. 235.

person had a preference for one of the four mental functions: sensation, intuition, thinking, or feeling. The various combinations of extraversion or introversion when paired with the four functions account for Jung's distinct personality types.

The Myers-Briggs Type Indicator is a 166-item forced-choice questionnaire with each choice being developed to be attractive to the type most likely to choose it (Appendix A). The results of the Myers-Briggs Type Indicator do not give a good-bad or sick-well evaluation, but rather indicate the way an individual prefers to function. McCaulley[2] states that the theory assumes that one pole of each preference has a greater appeal and that a child, unless hindered, will use the preferred way whenever he can, developing it and strengthening it through use.

It is essential to understand the "types" the Myers-Briggs Type Indicator refers to as "preference types." Preference types indicate the way a person chooses to use perception and judgment in his life. Isabel Briggs Myers indicates that:

> Perception is understood to include the process of becoming aware,--of things or people or occurrences or ideas. Judgment is understood to include the process of coming-to-conclusion about what has been perceived. If people differ systematically in what they perceive and the conclusions they come to, they may as a result show corresponding differences in their reactions, in their interests, values, needs and motivations, in what they do best and in what they like to do.[3]

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[2]Mary H. McCaulley, "The Myers-Briggs Type Indicator and the Teaching Learning Process," paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Illinois, April 4, 1974, p. 5.

[3]Isabel Briggs Myers, The Myers-Briggs Type Indicator, Manual (Princeton, New Jersey: Educational Testing Service, April 1963), p. 1.

The Myers-Briggs Type Indicator is scored for four preferences which a person has indicated. In order to obtain preference scores, a formula is applied to the difference between the points for the more-preferred and less-preferred pole. For the indication of personality preference, a letter will designate the direction of preference. Each personality type will include any combination of the letters listed on Table 2.1.

Table 2.1.--Four preferences are scored to arrive at a person's type.

	--Does the person's interest flow mainly to the--		
E	EXTRAVERSION--Outer world of actions, objects and persons	Inner world concepts and ideas INTROVERSION	I
	--Does the person prefer to perceive--		
S	SENSING--The immediate, real solid facts of experience	The possibilities, meanings and relationships of experience INTUITION	N
	--Does the person prefer to make judgments or decisions--		
T	THINKING--Objectively and impersonally, analyzing facts and ordering them in terms of cause and effect	Subjectively and personally, weighing values and the importance of choices for oneself and other people FEELING	F
	--Does the person prefer to live--		
J	JUDGING--In a planned, orderly way, aiming to regulate and control events	In a flexible, spontaneous way, aiming to understand and adapt to events PERCEIVING	P

Source: Mary H. McCaulley and Frank L. Natter, "Psychological Type Differences in Education," in The Governor's Task Force on Disruptive Youth, ed. F. L. Natter and S. A. Rollin (Tallahassee, Florida: Office of the Governor, 1974).

Sixteen combinations of personality preferences are then possible, as shown in Table 2.2. After completion of the Indicator, responses are analyzed, and the person is classified into one of these 16 possible types.

Table 2.2.--Combinations of personality preferences.

ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

Description of the Preferences

The following information will include descriptions of the Myers-Briggs Type Indicator personality types. The descriptions of these types were originally developed by Carl Jung. These definitions will be based on information from Myers' descriptions in the Manual[4] and information adopted from Mary McCaulley and Frank Natter.[5]

In the use of this indicator, the Extroversion-Introversion or E-I index has been developed to measure whether a person is an extrovert or an introvert as defined by Jungian Personality Theory.

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[4]Ibid., pp. 51-59.

[5]Mary H. McCaulley and Frank L. Natter, "Psychological Type Differences in Education," in The Governor's Task Force on Disruptive Youth, ed. F. L. Natter and S. A. Rollin (Tallahassee, Florida: Office of the Governor, 1974).

Myers states that the extrovert is oriented primarily to the outer world, and thus tends to focus his perception and judgment upon people and things.[6] In school, extroverts will tend to prefer working in large groups, to experience broadly and be actively involved in extracurricular activities.

In contrast, the "introvert" is a person oriented primarily to the inner world, and tends to focus his perception and judgment in the areas of concepts and ideas. Schools which meet needs of introverted children will allow them the time needed for thinking through of concepts alone. The school will provide experiences for the child to think about, rather than giving him experiences which are just fun in themselves.

The Sensation-Intuition or S-I index has been developed to distinguish between the two opposite ways in which people choose to make perceptions about their world.

When the Myers-Briggs Type Indicator measures sensation, it is concerned with basically the way a person takes in information using his five senses. A sensing person looks at things with the understanding that they may be touched, smelled, seen, tasted, or heard. In schools, sensing people value reality over imagination and factual information over theory. They have a "concrete-based" intellect and have an interest for what is real.

The intuitive types have a preference for not strictly using their five senses, but going beyond fact and observations

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[6]Myers, The Myers-Briggs Type Indicator, Manual, p. 1.

by formulating possibilities and relationships of things. In schools, intuitors have great ability with symbolic and abstract reasoning. Schools should encourage intuitors to be imaginative and develop alternative possibilities from solid, factual information.

The Thinking, Feeling or T-F index represents the opposite extremes in the way a person may make judgments about information he is processing.

The "thinking" types process information in a very systematic and impersonal right-wrong or true-false manner. In schools, these types work well with equipment, tools, mathematics, and science. They are excellent in dealing with logic or areas requiring a certain amount of exactness.

The "feeling" types, on the other hand, are interested in making decisions not strictly on factual information they have accumulated, but on the way they feel about things. Myers' definition pays close attention to the fact that feelers discriminate between things, ideas, or concepts valued or not valued. In schools, feeling-type students are able to develop sensitivity and interpersonal skills toward people in creating meaningful relationships.

Finally, the Judgment, Perception or J-P index represents the way a person interacts with his outside world. Carlyn indicates that the J-P index was added by Myers and Briggs.[7] This dimension

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[7]Marsha Carlyn, "The Relationship Between the Myers-Briggs Personality Characteristics and Teaching Preferences of Prospective Teachers" (Ph.D. dissertation, Michigan State University, 1976), p. 14.

of personality was apparently implied in the Jungian theory, but judgment and perception were never explicitly defined by Jung as being separate functions.

The judgment type functions in an orderly manner in relation to time schedules and life regulation. In schools, judgmental types prefer long-range planning and orderly approaches to all aspects of the school day.

The perceptive function allows for more flexibility and spontaneity in a person. Perceptive types need more information and experience before being able to make decisions about the orderliness of their lives. Perception allows more time for the understanding of life and the adaption to it. Students preferring perception seem to favor flexibility, change, and spontaneity in school.

Because this study is interested in personality types found in high schools, Table 2.3, developed by Isabel Briggs Myers, has been included. The table not only indicates the 16 personality types, but also includes major characteristics of high school students within each type.

McCaulley states that,

> Although the Myers-Briggs Type Indicator labels people with letters indicating their personality type preference, it should be made clear that the Indicator was not designed to "put people into boxes," but rather to help individuals recognize their own natural preference, styles and capabilities.[8]

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[8]Mary H. McCaulley et al., "Myers-Briggs Type Indicator" Report (Gainsville, Florida: University of Florida Typology Laboratory, 1973), p. 4.

PLEASE NOTE:

Pages 16-17, "Sensing Types"
and pages 91-98, "Myers-Briggs
Type Indicator", copyright 1976
by Katharine C. Briggs and
Isabel Briggs Myers not micro-
filmed at request of author.
Available for consultation at
Michigan State University Library.

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Table 2.3.--Characteristics of the types in high school.

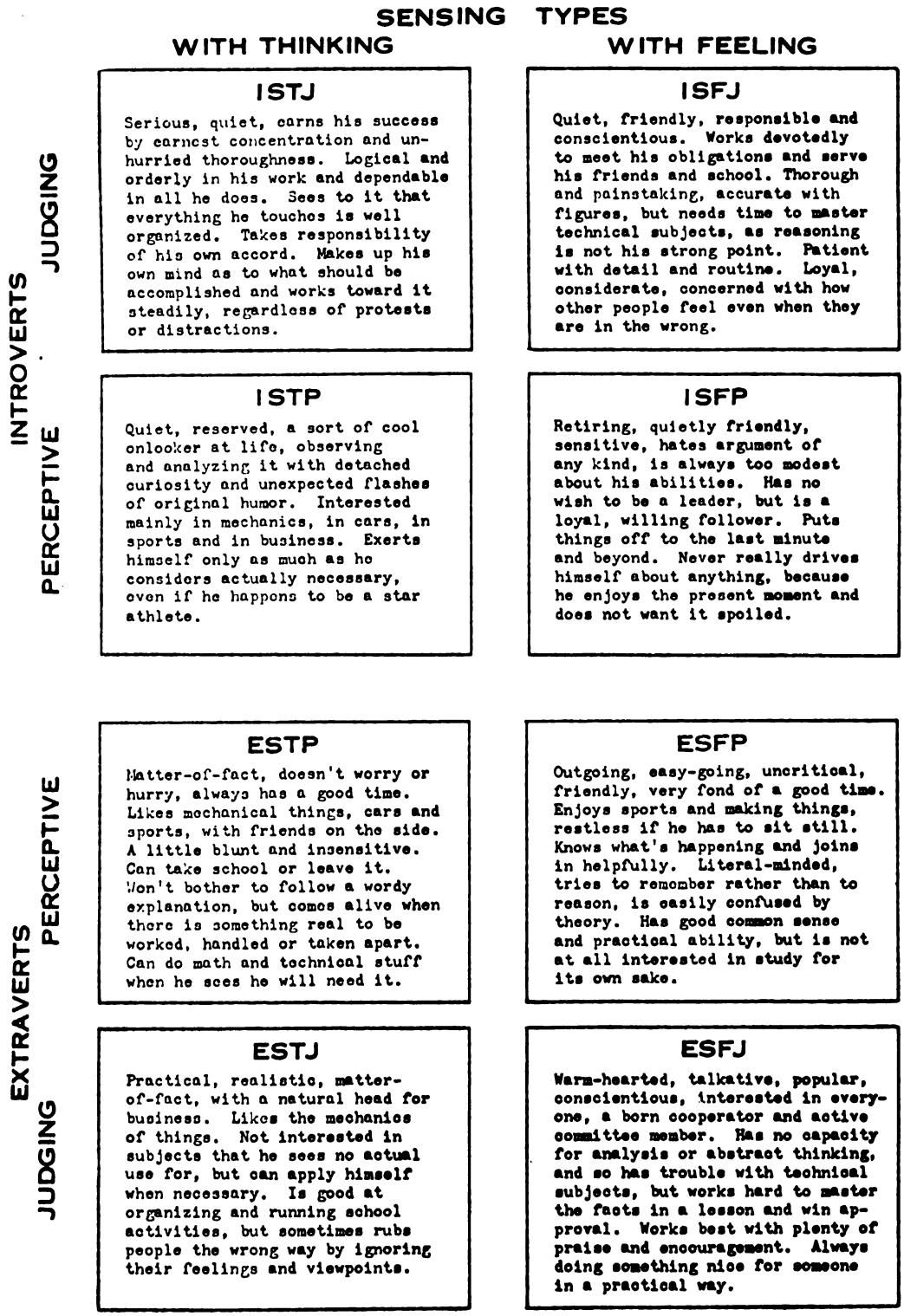

Table 2.3.--Continued.

	INTUITIVES		
	WITH FEELING	WITH THINKING	
INTROVERTS JUDGING	**INFJ** Gifted and original student who succeeds through combination of intelligence, perseverance, and desire to please. Puts his best efforts into his work because he wouldn't think of doing less than his best. Quiet, conscientious, considerate of others, widely respected if not popular, but suffers socially from unwillingness to compromise where a principle or conviction is involved.	**INTJ** Has a very original mind and a great amount of drive which he uses only when it pleases him. In fields which appeal to his imagination he has a fine power to organize a job or piece of work and carry it through with or without the help of others. He is always sceptical, critical and independent, generally determined, and often stubborn. Can never be driven, seldom led.	
INTROVERTS PERCEPTIVE	**INFP** Particularly enthusiastic about books, reads or tells the parts he likes best to his friends. Interested and responsive in class, always attentive and quick to see what the teacher is leading up to. Has a warm, friendly personality but is not sociable just for the sake of sociability and seldom puts his mind on his possessions or physical surroundings.	**INTP** Quiet, reserved, brilliant in exams, especially in theoretical or scientific subjects. Logical to the point of hair-splitting. Has no capacity for small talk and is uncomfortable at parties. Primarily interested in his studies and wouldn't care to be president of his class. Liked by his teachers for his scholarship and by the few fellow-students who get to know him for himself.	
EXTRAVERTS PERCEPTIVE	**ENFP** Warmly enthusiastic, high-spirited, ingenious, imaginative, can do almost anything that interests him. Quick with a solution for any difficulty and very ready to help people with a problem on their hands. Often relies on his spur-of-the-moment ability to improvise instead of preparing his work in advance. Can usually talk his way out of any jam with charm and ease.	**ENTP** Quick, ingenious, gifted in many lines, lively and stimulating company, alert and outspoken, argues for fun on either side of any question. Resourceful in solving new and challenging problems, but tends to neglect routine assignments as a boring waste of time. Turns to one new interest after another. Can always find excellent reasons for whatever he wants.	
EXTRAVERTS JUDGING	**ENFJ** Responsive and responsible. Feels a real concern for what others think and want, and tries always to handle things with due regard for the other fellow's feelings and desires. Can lead a group discussion or present a proposal with ease and tact. Sociable, popular, active in school affairs, but puts time enough on his lessons to do good work.	**ENTJ** Hearty, frank, able in studies and a leader in activities. Particularly good in anything requiring reasoning and intelligent talk, like debating or public speaking. Well-informed and keeps adding to his fund of knowledge. May be a bit too positive in matters where his experience has not yet caught up with his self-confidence.	

It is always possible for a person to "go against the grain" and act in direct opposition to his preferred way to function.

After conducting much research with the Myers-Briggs Type Indicator, Levy, Murphy, and Carlson indicate that studies they have conducted give considerable support for the Myers-Briggs Type Indicator as a psychometrically stable instrument capable of reflecting important group differences.[9] Present findings suggest that the dimensions of this instrument are more stable than indicated by previous research and provide unique data suggesting qualitative-type designations that are also remarkably stable.

The knowledge gained from researchers and the reliability of the instrument have caused much renewed interest in Type Psychology.

According to Myers,[10] the split-half reliabilities for type categories, computed by applying the Spearman-Brown Prophecy Formula to Tetrachoric r, are reported for E-I to range from .74 to .88, for S-N from .77 to .88, for T-F from .66 to .90, and for J-P from .88 to .93.[10] In Myers' research, underachieving samples show lower internal consistency correlations in the thinking-feeling preference.

According to Carlyn, research with the Myers-Briggs Type Indicator has only begun to gain recognition in the literature for specifically three main reasons: (1) the Indicator is a relatively new instrument; (2) many of the studies of the Indicator are

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[9]Nissim Levy, Clennie Murphy, Jr., and Rae Carlson, "Personality Types Among Negro College Students," Educational and Psychological Measurements 32,3 (1962): 652.

[10]Myers, The Myers-Briggs Type Indicator, Manual, p. 206.

relatively inaccessible, being reported in dissertations and not in professional journals; and (3) the "type" approach to personality has been violently attacked and abandoned in the literature for many years.[11] Due to the findings of recent studies conducted during the past years, many researchers are now looking with renewed interest at the Jungian Type Theory.

Personality Type and the Educational Process

Much research has been conducted with the Myers-Briggs Type Indicator and its relationship with the educational process. The following section will cite many of these studies in an attempt to provide an informational base for this study.

Mary McCaulley has conducted much research in the areas of student achievement in relation to personality type as measured by the Myers-Briggs Type Indicator.[12] Preference-type learning styles have been categorized and identified in the following manner:

Extrovert types--Educationally will prefer group learning, and action projects. Their attention span is short, and they will prefer to learn by trial and error methods.

Introvert types--Educationally, concepts will precede experience; they learn best when working alone or on individual library assignments. The attention span of the introvert is long.

Thinking types--Educationally, thinking types score higher in the areas of mathematics and science skills. They have a great sense for detail and logic.

Perceptive types--Educationally score higher on intelligence tests.

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[11] Carlyn, "Relationship Between Myers-Briggs Personality Characteristics and Teaching Preferences," p. 17.

[12] McCaulley et al., "Myers-Briggs Type Indicator" Report, pp. 2-3.

> Judgmental types--Educationally take advantage of orderly attack on problems in school resulting usually in better grades.

Information relating facts about the Sensation and Intuitive modes will be discussed in further studies to follow.

Further studies from McCaulley reported on the Myers-Briggs Type Indicator and results were obtained from boys in college-preparatory courses in 30 Pennsylvania high schools.[13] The results indicate that when all personality types were analyzed, the Introverted-Intuitive-Thinking-Perceivers (INTP's) ranked highest in intelligence and second highest in grades. In further studies in Florida, McCaulley also reports that INTP freshmen entering the University of Florida ranked first in placement scores such as the ACT and SAT tests.

The most consistent findings in Myers' research and in the studies of Conary, May, and McCaulley is that intuitive types average higher on aptitude measures than sensing types.[14] McCaulley states that,

> Intuitive types, with their greatest interest in and developed skills with symbols, score higher on most aptitude tests which are designed (usually by Intuitors) to test

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[13] McCaulley, "The Myers-Briggs Type Indicator and the Teaching Learning Process," p. 4.

[14] F. M. Conary, "An Investigation of the Variability of Behavioral Response of Jungian Psychological Types to Select Educational Variables" (Ph.D. dissertation, Auburn University, 1965); C. May, "An Investigation of the Relationship Between Selected Personality Characteristics of Eighth Grade Students and Their Achievement in Mathematics" (Ph.D. dissertation, University of Florida, 1971); Mary H. McCaulley et al., Final Report of Committee #13: "Myers-Briggs Type Indicator Applications," University of Florida Counseling Study (Gainesville, Florida: University of Florida Typology Laboratory, 1973).

> verbal skills, speed of comprehension, ability to draw references . . . the aspect of intelligence sought by introverted types.[15]

Table 2.4 illustrates the distinctions between sensing and intuitive types more clearly.

Table 2.4.--Sensing and intuitive type responses to aptitude and skill testing.

Type of Test	Sensing Types	Intuitive Types
Intelligence and aptitude measures (ACT, SCAT, SAT, MCAT)	Scored lower than intuitive types	Scored higher than sensitive types
Direct test of skills	Scored same as or higher than intuitive types	Scored same as or lower than sensing types

Source: Mary H. McCaulley, "The Myers-Briggs Type Indicator and the Teaching Learning Process," paper presented at the annual meeting of the American Educational Research Association, Chicago, Illinois, April 4, 1974, pp. 6-7.

Further studies conducted by Myers in studying the frequency of sensing and intuitive types involved in different levels of achievement have resulted in the following distribution of success in scholastic achievement (Table 2.5).

Reynolds and Hope conducted studies attempting to look at typology as a way to predict success in science courses.[16] After

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[15]McCaulley, "The Myers-Briggs Type Indicator and the Teaching Learning Process," p. 5.

[16]Richard J. Reynolds and Amy G. Hope, "Typology as a Moderating Variable in Success in Science," Psychological Reports 26,3 (1970): 715.

using the Myers-Briggs Type Indicator, they came to the conclusion that introverts, in all their samples, had the edge in science achievement criteria over extroverts. Although differences were not statistically significant, they were consistent in indicating a slight advantage for introverts.

Table 2.5.--Frequency of sensing and intuitive types at different levels of scholastic achievement.

Number	Level of Scholastic Achievement	Sensing	Intuitive
671	Finalists for National Merit Scholarships	17%	83%
3,676	Freshmen at Ivy League Colleges	41%	59%
3,503	Academic 11th and 12th graders, P.A. high schools	58%	42%
1,430	Nonacademic 11th and 12th graders, P.A. high schools	85%	15%
500	Adults who did not finish 8th grade	99.6%	0.4%

Source: Isabel Briggs Myers, "Taking Type Into Account in Education," in The Governor's Task Force on Disruptive Youth, ed. F. L. Natter and S. A. Rollin (Tallahassee, Florida: Office of the Governor, 1974), p. 128.

In correlation with the previous study, Reynolds and Hope reported that intuitors demonstrated a major advantage over the sensors, both in science achievement and in the other intellective variables (GPA, IQ).[17] This was significant in general groups, although less significant in advanced groups. Apparently in

[17]Ibid., p. 716.

science achievement, some benefit occurs from being both introverted and intuitive.

Myers has concluded, as a result of many studies with intuitors and sensors, that sensing children seem to have less use for school than intuitive children do, that on the average they make lower grades and score lower on intelligence tests, and that they seem to drop out of school far more frequently than the intuitive student.[18]

The preceding studies have clearly indicated that intuitive students seem to perform better in school than sensing students. It is possible that if schools were organized in such a manner as to allow sensing students to function more concretely, their success rate might improve.

Previous studies have been centered primarily upon standardized measures of achievement, i.e., ACT, SAT, etc. The question of how school personality types achieve in relationship to grade point average, a subjective measure, will be answered in the following studies.

Early studies of the Indicator relevant to school performance have reported correlations of each of the Indicator scales with GPA.[19]

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[18]Isabel Briggs Myers, "Taking Type Into Account in Education," in The Governor's Task Force on Disruptive Youth, ed. F. L. Natter and S. A. Rollin (Tallahassee, Florida: Office of the Governor, 1974), p. 127.

[19]Isabel Briggs Myers, "Inferences as to the Nature of Jung's Types, From the Shape of Regressions of Dependent Variables Upon Myers-Briggs Type Indicator Scores," American Psychologist 17 (1962): 364; R. C. Nichols and J. L. Holland, "Prediction of the First Year College Performance of High Aptitude Students," Psychological Monographs 77,7 (1963); L. J. Strickler and J. Ross, "An Assessment of

The median correlations over 15 high school and college samples (Myers) ranged from .06 for the T-F scale to .12 for the S-N scale. The scale correlations with student's own extracurricular achievement have also been reported (Nichols and Howard). The E-I scales correlated significantly with achievement in leadership activities. Several scales, also including the T-F scale, correlated significantly with literary, musical, and graphic art achievement; none correlated with any significance with scientific achievement.

In addition to the preceding studies, Strickler and Ross conducted an analysis of variance to investigate mean differences in GPA and over-under achievement between personality types with respect to these two criteria.[20] No significant results were found in their studies.

Personality Type and Subject Preference in Schools

Much information has been previously cited to correlate success in school with type and relation to academic and standardized achievement measures. Further information is also available to show personality preference and preference for specific academic courses.

In studies involving student populations in relationship to personality type, Strickler and Ross, after sampling 727 male

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Some Structural Properties of the Jungian Personality Typology," Journal of Abnormal and Social Psychology 68 (1964): 62-71.

[20]L. J. Strickler and J. Ross, "Some Correlates of a Jungian Personality Inventory," Psychological Reports 14 (April 1964): 623-43.

freshmen using the Strong Vocational Interest Blank, found that interest in wanting to be a science teacher was correlated with extroversion and feeling.[21] In studies involving prospective teachers, McCaulley found that students preparing to become physical education teachers were sensing types, whereas students wanting to teach art were more introverted, intuitive, and perceptive than other educational majors.[22]

The more recent studies of Hoffman are indicated in Table 2.6, which was developed by Marcia Carlyn. In this table are indicated subject area and personality preference for the specific area.[23] From the information cited in Table 2.6, we can understand that intuitive students prefer areas of literature and fine arts. Sensing types prefer mathematics and physical education over other subjects.

School Climate

Studies reporting school climate and its relation to the success of students with various personality types were not available in the literature. Some information has been written in speculation of this phenomenon, but research is nonexistent. Studies do exist, however, relating teacher preference with school climate.

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[21] Ibid., p. 631.

[22] McCaulley et al., "Myers-Briggs Type Indicator Applications," pp. 42-45.

[23] Jeffrey L. Hoffman, "Personality Relationships Between Supervising Teachers and Student Teachers as Determined by the Myers-Briggs Type Indicator" (Ph.D. dissertation, University of Florida, 1974), pp. 72-74.

Table 2.6.--Myers-Briggs type preference associated with different subject areas (N=84).

Subject Area	Personality Type
Math/science	-STJ[a]
English/foreign language	-NFP
Social studies	E---
Fine arts	-N-P
Applied arts	--T-
Physical education	-S--

Source: Marcia Carlyn, "The Relationship Between the Myers-Briggs Personality Characteristics and Teaching Preferences of Prospective Teachers" (Ph.D. dissertation, Michigan State University, 1976), p. 32.

[a]Blank indicates no specific preference.

Collins conducted a study to see if teachers with differing personality types preferred different school climates.[24] Two hundred elementary teachers in 12 school districts completed the Myers-Briggs Type Indicator and two questionnaires designed to measure teacher satisfaction and teacher perception of the organizational climate of their schools. Schools with many rules and regulations were characterized as having "closed" climates, and schools with fewer rules and a principal who was actively involved in the educational process were considered to have "open" climates. Collins showed the extroverted intuitors favored "open" climates and had lower

[24]James A. Collins, "Individual Personality and Organizational Climate" (Ph.D. dissertation, Claremont Graduate School, 1965).

satisfaction with "closed" educational climates. Sensing, feeling types appeared quite satisfied in either "open" or "closed" climates. Individual personality was thus shown to be significantly related to performance for specific school climates and job satisfaction.

With the previous information indicating school climate is related to satisfaction levels of personality types, some further research and discussion are available for the improvement and support of programs and climates for persons of different personality types.

Bowling, while studying personality types of pathologists and medical technologists, found that personality types seem to correspond well to being given areas of responsibility that correlate with their preference scores.[25] She concluded that educational programs should be structured that allow for similarities and differences between individuals for optimal education to take place.

Further studies seem to imply that teachers who have used the Indicator as classroom information report that when programs are individualized, students do learn consistently with their types. Type differences have been found in creativity, intelligence, and sociometric reputation in eighth graders;[26] in persistence in

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[25]Cinnie Esterle Bowling, "The Jungian Personality Types of Pathologists and Selected Medical Technologists in the State of Florida" (Ph.D. dissertation, University of Florida, 1973).

[26]E. Barberousse, "An Investigation of Eighth Grade Students' Behavioral Responses on Creativity Criteria Intelligence and Sociometric Choices in Relation to Their Jungian Psychological Types" (Ph.D. dissertation, Auburn University, 1965).

advanced placement programs in high school;[27] and in student-teacher interaction in college skills course work, including reading.[28]

According to Soar, the school climate could be improved for students by the inclusion of two main areas--freedom of movement and the freedom of learning task.[29] He also contends in his studies that students need both "wiggle-room" and structure if they are to learn properly.

One major problem in the development and improvement of school climate is that educators responsible for its development usually develop climates closest to their own style of learning. McCaulley indicates that traditionalists (sensing-thinking-judging) are demanding discipline and the three R's, whereas humanists (intuitor-feeling-perception) are encouraging unstructured school models with "open" classrooms and curriculum.[30] Both approaches

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[27]W. B. Helton, "A Comparative Analysis of Selected Characteristics of Intellectually Superior Male Students Who Persist and Those Who Do Not Persist in an Advanced Placement Program" (Ph.D. dissertation, North Texas State University, 1964); R. P. Norris, "A Comparative Analysis of Selected Characteristics of Intellectually Superior Female Students Who Persisted and Those Who Did Not Persist in an Advanced Placement Program" (Ph.D. dissertation, North Texas State University, 1964).

[28]B. R. Fritz and C. D. Schmidt, "The Effects of Teacher-Student Similarity in an Educational Skills Course," USOE, Cooperative Research Project No. S-217 (Columbus: Ohio State University, 1965).

[29]R. Soar, "Florida Climate and Control (FLACCS)" Manual (Gainesville: Institute for Development of Human Resources, University of Florida, 1971). (Mimeographed.)

[30]Mary H. McCaulley and Frank L. Natter, "Type Development: An Educational Objective," in The Governor's Task Force on Disruptive Youth, ed. F. L. Natter and S. A. Rollin (Tallahassee, Florida: Office of the Governor, 1974), p. 206.

will work in schools, but not with all students being subjected to their structures. McCaulley states that "rather than downplaying qualities of value by the other, both approaches could develop educational experiences to meet the needs of all types of students."[31]

All the previous research reported has dealt with personality type as it relates to the educational process, subject and learning preference in schools, and its relationship to school climate. There was no research reported that would show the effects different types of scheduling procedures have on personality type.

Summary

There have been numerous studies conducted with the Myers-Briggs Type Indicator in relation to the educational process. The studies reported upon did not reflect how different personality types function under different scheduling processes, but a number of findings were reported, and are summarized below.

1. The basic purpose of the Myers-Briggs Type Indicator is to implement the Jungian theory of personality type. The Indicator was developed to distinguish the way in which a person prefers to use the processes of perception and judgment. Preference types are listed in Table 2.1.

2. There is some evidence to indicate that each preference type has a preferred learning style.

3. There is some evidence to indicate that intuitive types achieve more success in school than sensing types.

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[31] Ibid.

4. There is some evidence that personality types are attracted to specific subject areas. Findings indicate that (a) extroverts prefer to work in areas of social studies; (b) sensors prefer mathematics, science, and physical education; (c) intuitors prefer language arts and fine arts; (d) perceivers prefer fine arts; (e) thinkers prefer areas of mathematics, science, and applied arts; and (f) judgers prefer mathematics and science.

5. There is some evidence to show that school climate is related to satisfaction level of personality types.

6. There is evidence to show one treatment or educational process may not be adequate for personality type satisfaction and proper educational development.

7. The question of whether scheduling differences will have any significant effect upon personality type has not been determined.

CHAPTER III

DESIGN OF THE STUDY

This chapter contains a description of the methodology and procedures used to carry out this study. The sample, procedure, hypotheses, Myers-Briggs Type Indicator, Personal Data Questionnaire, and statistical analysis used in this study are described in the present chapter.

Sample

The population sampled consisted of 240 students from two neighboring high schools in Colorado Springs, Colorado. One sample of 120 students was selected from a high school that operates under a system of flexible scheduling. The other sample of 120 students was selected from a high school that operates under a system of traditional scheduling. Both high schools, from which the sample was drawn, house approximately 1,200 students in grades 10, 11, and 12. Approximately 10 percent, or 120 students, were selected for study from each of the two high schools.

Sample Selection

The cluster sampling technique was used for selection purposes in this study. The use of the cluster sampling technique was necessary in that the flexibly scheduled school indicated that it would need to control the procedure in accordance with its particular

school and district policies. The flexibly scheduled school selected samples from classes that their students were required to take in order to meet graduation requirements. These classes consisted of three English courses and two social studies courses with student participants ranging from grades 10 through 12. The sample from the traditional school was obtained from the same cluster sampling technique the flexible school used for purposes of making sampling procedures consistent. The students from three English classes and two social studies classes were selected from the traditional school for the study. Because the focus of this study is upon specific personality types and their functioning ability, within two public school settings, divisions will not be made separating sex and grade levels of students sampled.

Research Questions and Hypotheses

For the purpose of this study, six questions were designed and answered. The research questions are as follows:

Research Question I: What is the personality type distribution between students attending a flexibly scheduled school as opposed to those students attending a traditionally scheduled school?

Research Question II: What differences exist with student personality types in relationship to attendance measures when flexibly scheduled as opposed to being traditinally scheduled?

Null Hypothesis 1: There will be no significant difference between student personality types and daily attendance rates when flexibly or traditionally scheduled.

Null Hypothesis 2: There will be no significant difference between student personality types and period absence rates when flexibly or traditionally scheduled.

Research Question III: What differences exist in student personality types in relation to grade point average when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 3: There will be no significant difference between student personality types and grade point average when flexibly or traditionally scheduled.

Research Question IV: What differences exist in student personality types in relation to their attitudes toward attending school when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 4: There will be no significant difference between student personality types and their attitude toward attending school when flexibly or traditionally scheduled.

Research Question V: What differences exist in student personality types in relation to extracurricular school activities a student is involved in when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 5: There will be no significant difference between student personality types and involvement in extracurricular activities when flexibly or traditionally scheduled.

Research Question VI: What differences exist in student personality types in relation to their attitude toward school course work when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 6: There will be no significant difference between student personality types and their attitude toward school course work when flexibly or traditionally scheduled.

Sources of Data

There were three sources of data used for this study: (1) the Myers-Briggs Type Indicator (see Appendix A), (2) Personal Data Questionnaire (see Appendix B), and (3) student school records.

Instrumentation

The Myers-Briggs Type Indicator is presented in Appendix A. It is a self-report instrument designed to measure the dimensions of personality based on Carl Jung's Theory of Personality. The Indicator consists of 166 items designed to indicate preference in the following areas: (1) Extroversion or Introversion, (2) Sensation or Intuition, (3) Thinking or Feeling, and (4) Judgment or Perception. These indicators were hand scored and the results were transferred to I.B.M. computer cards.

As previously indicated in Chapter II, the split-half reliabilities for type categories, computed by applying the Spearman-Brown Prophecy Formula to Tetrachoric r, are reported for E-I to range from .74 to .88, for S-N from .77 to .88, for T-F from .66 to .90, and for J-P from .88 to .93.[1] In Myers' research, underachieving samples show lower internal consistency correlations in the thinking-feeling preference. A more complete description of the Myers-Briggs Type Indicator is presented in Chapter II.

The Personal Data Questionnaire is a self-report instrument which was constructed for this study. The Questionnaire consists of 10 items designed to measure student attitude toward school, extracurricular involvement, and specific areas of subject interest. The Questionnaire was hand scored and the results were transferred to I.B.M. computer cards. The scoring procedure was arranged so the positive responses were indicated by higher numbers. A "yes"

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[1]Myers, The Myers-Briggs Type Indicator, Manual, p. 206.

response was scored as "1," and a "no" response was scored as a "0."

A pilot study was conducted with the Myers-Briggs Type Indicator and the Personal Data Questionnaire with 31 students. This study revealed that both instruments could be completed in one 50-minute class period. After the instruments were completed by students, discussions indicated that there seemed to be no ambiguous, misleading, or uninterpretive questions. The Personal Data Questionnaire is presented in Appendix B and is assumed to have reasonable content validity.

School Records

Data were received from individual student school records for the entire 1975-1976 school year. Information obtained included the following:

a. grade point average for the student's entire high school experience
b. attendance reports for the number of days a student was absent during the 1975-1976 school year
c. attendance reports for the number of periods a student had been absent, excluding daily absences, during the 1975-1976 school year

Statistical Analysis

The hypotheses of this study were tested using standard statistical procedures. Each subject's scores or responses were placed on I.B.M. computer cards and sent to the University of

Colorado, Colorado Springs extension, where the raw data were analyzed by an I.B.M. 360 computer. Means, standard deviations, and intercorrelations for all measures were obtained. Each research question was then analyzed by using a two-way analysis of variance. Scheffé and Bonferroni post-hoc tests were used to isolate differences when significant F-ratios were found.

Summary

The major problem of this study was to examine if personality types achieve and function differently if flexibly or traditionally scheduled in high schools. The sample, sample selection, research questions, hypotheses, sources of data, and statistical procedures were discussed in this chapter.

The statistical analysis of data gathered will be presented in the following chapter.

CHAPTER IV

ANALYSIS OF THE DATA

The primary purpose of this study was to find out if personality types, as measured by the Myers-Briggs Type Indicator, function differently in the areas of attendance, grade point average, attitude toward school, attitude toward subject matter, and involvement in extracurricular activities when subjected to scheduling practices of a flexible or traditional school structure.

Data were gathered from a flexibly scheduled school and a traditionally scheduled school in the form of personality preference type (measured by the Myers-Briggs Type Indicator), responses from a self-report questionnaire (Personal Data Questionnaire), and student records for the 1975-1976 school year. In addition, six research questions were established to elicit descriptive data and determine whether there were any differences in the way personality types function under different scheduling practices.

In this chapter research questions are evaluated in the order of their presentation in Chapter III. A discussion of the findings appears in Chapter V.

Analysis of Research Question I

Research Question I: What is the personality type distribution between students attending a flexibly scheduled school as opposed to those students attending a traditionally scheduled school?

Upon completion of the Indicator, the writer hand-scored each answer sheet and constructed Tables 4.1 and 4.2. Type Table 4.1 illustrates the 16 possible four-letter profiles and their distribution in the flexibly scheduled school. Table 4.2 illustrates the same profiles as they are distributed in the traditionally scheduled school.

Analysis of Research for Questions II-VI

Analyses of the data for the five null hypotheses derived from Research Questions II-VI follow. Means, standard deviations, and intercorrelations for all measures were obtained. These questions were analyzed by using a factorial analysis of variance.

An intercorrelation matrix was obtained (Table 4.3), in order to determine the degree of relationship among the measures used in the present study.

Significant negative correlations ($p<.01$) were obtained for the Type of School Comparison with number of days absent and number of absent periods. In other words, those students attending the flexibly scheduled school had significantly greater numbers of absent days and periods as compared to those students in the traditionally scheduled program. In addition, a significant positive correlation ($p<.05$) was obtained for the Type of School Comparison with grade point average (GPA). This indicates that the traditional school had a significantly higher GPA than the flexibly scheduled school.

Table 4.1.--Flexibly scheduled school population--120 students in grades 10-12.

SENSING TYPES with THINKING	SENSING TYPES with FEELING	INTUITIVE TYPES with FEELING	INTUITIVE TYPES with THINKING	
ISTJ N= 4 % = 3.3	*ISFJ* N= 8 % = 6.7	*INFJ* N= 3 % = 2.5	*INTJ* N= 3 % = 2.5	JUDGING
ISTP N= 5 % = 4.2	*ISFP* N= 8 % = 6.7	*INFP* N= 10 % = 8.3	*INTP* N= 3 % = 2.5	PERCEPTIVE
ESTP N= 5 % = 4.2	*ESFP* N= 12 % = 10	*ENFP* N= 30 % = 25	*ENTP* N= 7 % = 5.8	PERCEPTIVE
ESTJ N= 6 % = 5	*ESFJ* N= 9 % = 7.5	*ENFJ* N= 4 % = 3.3	*ENTJ* N= 3 % = 2.5	JUDGING

INTROVERTS

EXTRAVERTS

	N	Percent
E	76	63
I	44	37
S	57	48
N	63	52
T	36	30
F	84	70
J	40	33
P	80	67
IJ	18	15
IP	26	22
EP	54	45
EJ	22	18
ST	20	17
SF	37	30
NF	47	40
NT	16	13
SJ	27	23
SP	30	25
NP	50	42
NJ	13	10
TJ	16	13
TP	20	17
FP	60	50
FJ	24	20
IN	19	16
EN	44	37
IS	25	20
ES	32	27

NOTES:

Table 4.2.--Traditionally scheduled school population--120 students in grades 10-12.

SENSING TYPES with THINKING	SENSING TYPES with FEELING	INTUITIVE TYPES with FEELING	INTUITIVE TYPES with THINKING	
ISTJ N= 4 %= 3.3	*ISFJ* N= 5 %= 5	*INFJ* N= 4 %= 3.3	*INTJ* N= 3 %= 2.5	JUDGING
ISTP N= 6 %= 5	*ISFP* N= 9 %= 7.5	*INFP* N= 15 %= 12.5	*INTP* N= 3 %= 2.5	PERCEPTIVE
ESTP N= 2 %= 1.7	*ESFP* N= 9 %= 7.5	*ENFP* N= 31 %= 25.8	*ENTP* N= 7 %= 5.8	PERCEPTIVE
ESTJ N= 7 %= 5.8	*ESFJ* N= 6 %= 5	*ENFJ* N= 5 %= 4.2	*ENTJ* N= 3 %= 2.5	JUDGING

INTROVERTS

EXTRAVERTS

	N	Percent
E	70	58
I	50	42
S	49	41
N	71	59
T	35	29
F	85	71
J	38	32
P	82	68
IJ	17	14
IP	33	28
EP	49	41
EJ	21	17
ST	19	16
SF	30	25
NF	55	46
NT	16	13
SJ	23	19
SP	26	22
NP	56	47
NJ	15	12
TJ	17	14
TP	18	15
FP	64	53
FJ	21	18
IN	25	21
EN	46	38
IS	25	21
ES	24	20

NOTES:

Table 4.3.--Intercorrelation matrix for all measures obtained.

	School	Pers. Type	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	G.P.A.	Days Abst.	Periods Absent
School		-.02	-.18	.10	.06	.13	.21*	.04	.15	.10	-.02	-.12	.24*	-.31**	-.35**
Pers. Type			.05	-.01	.14	.14	.03	.12	.07	.26**	.15	.13	.08	-.01	.00
Q1				.17	.09	-.11	.25**	.15	.13	.08	.09	.15	.17	-.04	-.15
Q2					.22	.10	.18	.19*	.16	-.00	-.06	.14	.23	-.09	-.26**
Q3						.08	-.03	.15	.02	.12	-.06	.06	.16	.06	-.03
Q4							.09	.17	.09	.15	.11	.03	.17	-.00	-.12
Q5								.25**	.22*	-.00	.10	.07	.30**	-.23*	-.29**
Q6									.40**	.25**	.24*	.22*	.21*	-.11	-.22*
Q7										.18	.16	.21*	.08	-.13	-.19*
Q8											.46*	.15	.00	-.12	-.09
Q9												.34**	-.03	-.09	-.08
Q10													.02	-.11	-.12
G.P.A.														-.18	-.53**
Days absent															.41**
Periods absent															

Q = Question number of the Personal Data Questionnaire.

*p < .05; a correlation of .19 or greater for 240 subjects employing a two-tailed test is necessary for significance at the .05 level.

**p < .01; a correlation of .25 or greater for 240 subjects employing a two-tailed test is necessary for significance at the .01 level.

Research Question II: What differences exist with student personality type in relationship to attendance measures when flexibly scheduled as compared to being traditionally scheduled?

Null Hypothesis 1: There will be no significant difference between student personality type and daily attendance rates when flexibly or traditionally scheduled.

After the computation of personality types and the accumulation of school attendance records, means and standard deviations were obtained for the flexibly scheduled school and the traditionally scheduled school, depicted in Table 4.4.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with number of absent days as the dependent measure to determine significant differences among the groups (Table 4.5). A significant main effect was found for the type of school ($p<.01$). The flexibly scheduled students missed a greater number of days ($\overline{X}$ = 9.93 days) as compared to the traditional school students ($\overline{X}$ = 5.77 days).

Table 4.5.--Analysis of variance schools by personality type with number of absent days as the dependent variable.

Source	SS	df	MS	F
A (type of school)	1,041.66	1	1,041.66	25.63
B (personality type)	533.94	15	35.60	0.88
AB	507.86	15	33.86	0.83
Within	8,455.13	208	40.65	
Total	10,538.60	239		
F .99 (1,208) = 6.76		F .95 (15,208) = 1.72		

Table 4.4.--Means and standard deviations for number of absent days.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	9.00	8.49	4	10.75	6.80	8	9.88	7.65
ISFJ	8	10.13	9.58	6	4.67	5.72	14	7.79	7.93
INFJ	3	7.33	4.04	4	4.25	.96	7	5.57	2.28
INTJ	3	2.00	2.00	3	2.67	2.08	6	2.33	2.04
ISTP	5	11.20	5.26	6	7.33	9.29	11	9.09	7.46
ISFP	8	10.63	8.16	9	7.22	5.52	17	8.82	6.76
INFP	10	10.50	9.13	15	5.33	5.56	25	7.40	6.99
INTP	3	11.33	7.37	3	5.33	6.66	6	8.33	7.02
ESTP	5	10.00	1.41	2	7.50	3.54	7	9.29	2.02
ESFP	12	9.83	5.46	9	8.33	10.56	21	9.19	7.65
ENFP	30	9.40	6.46	31	5.68	4.43	61	7.50	5.43
ENTP	7	13.29	7.57	7	4.71	2.21	14	9.00	4.89
ESTJ	6	17.00	10.77	7	3.86	3.63	13	9.92	6.93
ESFJ	9	6.89	5.04	6	4.67	4.76	15	6.00	4.93
ENFJ	4	7.80	4.27	5	3.40	3.21	9	5.33	3.68
ENTJ	3	9.67	5.86	3	6.67	5.51	6	8.17	5.69
Total	120	9.93	6.66	120	5.77	5.18	240	7.85	6.64

A significant main effect for personality type was not obtained ($p>.05$). In addition, a significant interaction between personality type and school was not obtained ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question.

Research Question II: What differences exist with student personality types in relationship to attendance measures when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 2: There will be no significant difference between student personality types and period absence rates when flexibly or traditionally scheduled.

After the accumulation of data relating to personality types and period absence rates, means and standard deviations were obtained for the flexibly scheduled school and the traditionally scheduled school (Table 4.6).

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with period absences as the dependent measure to determine significant differences among the groups (Table 4.7). A significant difference was found for the type of school ($p<.01$). The flexibly scheduled students missed a greater number of periods ($\overline{X}$ = 18.56 periods) as compared to the traditional school students ($\overline{X}$ = 5.23 periods).

A significant main effect for personality type was not obtained ($p>.05$). In addition, a significant interaction between personality type and school was not obtained ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question.

Table 4.6.--Means and standard deviations for number of absent periods.

Personality Type	Flexible School			Traditional School			Total		
	N	X	S.D.	N	X	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	8.50	8.35	4	15.00	15.90	8	11.75	12.13
ISFJ	8	20.12	23.38	6	.50	1.22	14	11.71	13.88
INFJ	3	9.66	1.15	4	4.25	6.56	7	6.57	4.24
INTJ	3	2.66	3.06	3	.66	1.15	6	1.67	2.11
ISTP	5	27.40	13.20	6	1.50	1.76	11	13.27	6.96
ISFP	8	21.25	21.46	9	8.77	13.50	17	14.65	17.25
INFP	10	7.00	8.00	15	9.13	17.12	25	8.28	13.45
INTP	3	46.66	56.90	3	3.00	2.65	6	24.83	29.78
ESTP	5	15.20	20.13	2	4.00	2.83	7	12.00	15.19
ESFP	12	25.66	20.90	9	7.77	13.88	21	18.00	17.90
ENFP	30	21.80	29.00	31	4.23	8.54	61	12.87	18.60
ENTP	7	21.00	14.14	7	4.29	9.18	14	12.64	11.66
ESTJ	6	8.00	5.06	7	.86	1.25	13	4.15	3.00
ESFJ	9	19.77	24.72	6	8.33	14.57	15	15.20	20.66
ENFJ	4	11.25	11.41	5	3.20	6.10	9	6.78	8.46
ENTJ	3	5.66	4.93	3	2.33	2.52	6	4.00	3.72
Total	120	18.56	19.63	120	5.23	9.09	240	11.90	18.77

Table 4.7.--Analysis of variance schools by personality type with absent periods as the dependent variable.

Source	SS	df	MS	F
A (type of school)	10,507.26	1	10,507.26	33.92
B (personality type	4,708.44	15	313.90	1.01
AB	4,638.31	15	309.22	1.00
Within	64,435.58	208	309.79	
Total	84,289.60	239		
F .99 (1,208) = 6.76	F .95 (15,208) = 1.72			

Research Question III: What differences exist in student personality types in relation to grade point average when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 3: There will be no significant difference between student personality types and grade point average when flexibly or traditionally scheduled.

Data were gathered for personality types and grade point averages (GPA's) of students sampled in the flexibly and traditionally scheduled schools. Means and standard deviations for these measures are depicted in Table 4.8.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with grade point average as the dependent measure to determine significant differences among the groups (Table 4.9). A significant main effect was found for the type of school ($p<.01$). The traditionally scheduled students had a higher grade point average ($\overline{X}$ = 3.02 GPA) as compared to the flexibly scheduled students ($\overline{X}$ = 2.68 GPA).

Table 4.8.--Means and standard deviations for grade point average.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	2.88	.77	4	2.79	.93	8	2.83	.85
ISFJ	8	2.57	.76	6	3.38	.37	14	2.92	.59
INFJ	3	1.92	1.27	4	3.07	.31	7	2.58	.72
INTJ	3	3.30	.69	3	3.40	.17	6	3.35	.43
ISTP	5	2.27	.45	6	3.49	.30	11	2.94	.37
ISFP	8	2.59	.54	9	2.32	1.00	17	2.45	.78
INFP	10	3.07	.38	15	2.78	.56	25	2.90	.49
INTP	3	2.38	.54	3	3.33	.48	6	2.86	.51
ESTP	5	2.89	.53	2	2.60	.04	7	2.81	.39
ESFP	12	2.05	.85	9	2.75	.45	21	2.35	.68
ENFP	30	2.27	.77	31	3.13	.50	61	2.93	.63
ENTP	7	2.95	.75	7	3.11	.60	14	3.04	.68
ESTJ	6	2.73	.74	7	3.09	.58	13	2.93	.65
ESFJ	9	2.73	.93	6	2.88	.82	15	2.79	.89
ENFJ	4	3.23	.85	5	3.28	.44	9	3.26	.62
ENTJ	3	3.00	.47	3	3.71	.19	6	3.36	.33
Total	120	2.68	.72	120	3.02	.53	240	2.85	.72

Table 4.9.--Analysis of variance schools by personality type with grade point average as the dependent variable.

Source	SS	df	MS	F
A (type of school)	7.06	1	7.06	16.25
B (personality type)	14.37	15	0.96	2.20
AB	10.35	15	0.69	1.59
Within	90.42	208	0.43	
Total	122.20	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

A significant main effect for personality type was obtained ($p<.05$). Due to this statistical significance, a Scheffé post-hoc comparison reports the differences in ranked mean scores (Table 4.10).

None of these differences was found significant. Therefore the more powerful Bonferroni Test was conducted to determine if differences between cell means and combinations of cell means were significant. Table 4.11 reports the contrasts and their 95 percent confidence intervals.

Of the 12 contrasts selected, 10 were found to be significant at the 95 percent level of confidence. An analysis of the post-hoc analysis indicates that, in most cases, the intuitive-thinking (NT) combination of personality traits achieves more favorably in grade point average tabulation than the sensing-feeling (SF) combination of personality traits. In other cases, intuitive-feeling (NF) achieves more favorably than the sensing-feeling (SF) personality mode. In

Table 4.10.--Scheffé post-hoc comparison of grade point average (GPA) mean differences for personality types.

	$\bar{X}$	ENTJ	INTJ	ENFJ	ENTP	ISTP	ENFP	ESTJ	ISFJ	INFP	INTP	ISTJ	ESTP	ESFJ	INFJ	ISFP	ESFP
ENTJ	3.36	--	.01	.10	.32	.42	.43	.43	.44	.46	.50	.53	.55	.57	.78	.91	1.01
INTJ	3.35		--	.09	.31	.41	.42	.42	.43	.45	.49	.52	.54	.56	.77	.90	1.00
ENFJ	3.26			--	.22	.32	.33	.33	.34	.36	.40	.43	.45	.47	.68	.81	.91
ENTP	3.04				--	.10	.11	.11	.12	.14	.18	.21	.23	.25	.46	.59	.69
ISTP	2.94					--	.01	.01	.02	.04	.08	.11	.13	.15	.36	.49	.59
ENFP	2.93						--	.00	.01	.03	.07	.10	.12	.14	.35	.48	.58
ESTJ	2.93							--	.01	.03	.07	.10	.12	.14	.35	.48	.58
ISFJ	2.92								--	.02	.06	.09	.11	.13	.34	.47	.37
INFP	2.86									--	.04	.07	.09	.11	.32	.45	.55
INTP	2.86										--	.03	.05	.07	.28	.41	.51
ISTJ	2.83											--	.02	.04	.25	.38	.48
ESTP	2.81												--	.02	.23	.36	.46
ESFJ	2.74													--	.21	.34	.44
INFJ	2.58														--	.13	.23
ISFP	2.45															--	.10
ESFP	2.35																--

Table 4.11.--Contrasts on group means using Bonferroni confidence intervals--grade point averages.

Contrast	Difference	95% Confidence Interval	Results
$\overline{ENTJ}$-$\overline{ESFP}$	1.01	.14 to 1.88	Significant
$\overline{ENTJ}$-$\overline{ISFP}$	0.91	.02 to 1.80	Significant
$\overline{ENTJ}$-$\overline{INFJ}$	0.78	-.26 to 1.82	Not significant
$\overline{INTJ}$-$\overline{ESFP}$	1.00	.13 to 1.87	Significant
$\overline{INTJ}$-$\overline{ISFP}$	0.90	.01 to 1.79	Significant
$\overline{ENFJ}$-$\overline{ESFP}$	0.91	.16 to 1.66	Significant
$\overline{ENFJ}$-$\overline{ISFP}$	0.81	.04 to 1.58	Significant
$\overline{ENTP}$-$\overline{ESFP}$	0.69	.04 to 1.34	Significant
$\overline{ISTP}$-$\overline{ESFP}$	0.59	-.11 to 1.29	Not significant
$\overline{ENFP}$-$\overline{ESFP}$	0.58	.11 to 1.05	Significant
$\frac{\overline{INTJ}+\overline{INTP}+\overline{ENTP}+\overline{ENTJ}}{4} - \frac{\overline{ISFJ}+\overline{ISFP}+\overline{ESFP}+\overline{ESFJ}}{4}$	0.53	.11 to .95	Significant
$\frac{\overline{INFJ}+\overline{INFP}+\overline{ENFP}+\overline{ENFJ}}{4} - \frac{\overline{ISFJ}+\overline{ISFP}+\overline{ESFP}+\overline{ESFJ}}{4}$	0.37	.02 to .72	Significant

all cases, the N portion of personality seems to be a factor in grade point achievement.

A significant interaction between school and personality type was not obtained ($p>.05$). Therefore, it was not possible to reject the null hypothesis for this research question.

Research Question IV: What differences exist in student personality types in relation to their attitudes toward attending school when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 4: There will be no significant difference between student personality types and their attitude toward attending school when flexibly or traditionally scheduled.

Respondents were asked to indicate their attitude about attending their school in Question 1 of the Personal Data Questionnaire ("Do you enjoy coming to school most of the time?"). Data were gathered for personality types of students attending the flexibly and traditionally scheduled schools as well as their responses to Question 1. Means and standard deviations for these measures are depicted in Table 4.12.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with attitude toward attending school as the dependent measure to determine significant difference among the groups (Table 4.13). A significant main effect was found for the type of school ($p<.01$). The flexibly scheduled students indicated a more positive attitude toward attending school ($\overline{X}$ = .88 attitude) as compared to the traditionally scheduled students ($\overline{X}$ = .74 attitude).

Table 4.12.--Means and standard deviations for Question 1.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	1.00	.00	4	.50	.58	8	.75	.29
ISFJ	8	1.00	.00	6	1.00	.00	14	1.00	.00
INFJ	3	1.00	.00	4	.75	.50	7	.86	.29
INTJ	3	.67	.58	3	.67	.58	6	.67	.58
ISTP	5	.80	.45	6	.83	1.29	11	.82	.91
ISFP	8	1.00	.00	9	.44	.53	17	.71	.28
INFP	10	.80	.42	15	.60	.51	25	.68	.47
INTP	3	.33	.58	3	1.00	.00	6	.67	.29
ESTP	5	1.00	.00	2	.50	.71	7	.86	.20
ESFP	12	.83	.39	9	.67	.50	21	.76	.44
ENFP	30	.93	.25	31	.84	.37	61	.88	.31
ENTP	7	.71	.49	7	.43	.53	14	.57	.51
ESTJ	6	1.00	.00	7	.86	.38	13	.92	.20
ESFJ	9	.89	.33	6	.83	.41	15	.87	.35
ENFJ	4	.75	.50	5	1.00	.00	9	.89	.22
ENTJ	3	1.00	.00	3	1.00	.00	6	1.00	.00
Total	120	.88	.25	120	.74	.44	240	.81	.39

Table 4.13.--Analysis of variance schools by personality type with Question 1 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	1.20	1	1.20	8.48
B (personality type)	3.10	15	0.21	1.46
AB	2.76	15	0.18	1.30
Within	29.50	208	0.14	
Total	36.56			
F .99 (1,208) = 6.76	F .95 (15,208) = 1.72			

A significant main effect for personality type was not obtained ($p>.05$). In addition, a significant interaction between personality type and school was not obtained ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question.

Research Question V: What differences exist in student personality types in relation to extracurricular school activities a student is involved in when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 5: There will be no significant difference between student personality types and involvement in extracurricular activities when flexibly or traditionally scheduled.

Respondents were asked to indicate their involvement in extracurricular activities by answering Questions 2, 3, and 4 of the Personal Data Questionnaire. Data were gathered for each question as well as personality type of students sampled from the flexibly and traditionally scheduled schools. Mean, standard deviation, and analysis of variance tables follow for Questions 2, 3, and 4 of the Personal Data Questionnaire.

Means and standard deviations for Question 2 of the Personal Data Questionnaire ("Are you involved in extracurricular school activities?") and the respondents' personality types are depicted in Table 4.14.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 2 of the Personal Data Questionnaire as the dependent measure to determine significant difference among the groups (Table 4.15). A significant main effect was not obtained for type of school ($p>.05$).

Table 4.15.--Analysis of variance schools by personality type with Question 2 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	0.60	1	.60	2.44
B (personality type)	3.43	15	.23	0.93
AB	4.88	15	.33	1.33
Within	51.07	208	.25	
Total	59.98	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

A significant main effect was not obtained for personality type ($p>.05$). Also, a significant interaction between personality type and school was not obtained ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question in relation to Question 2 of the Personal Data Questionnaire.

Table 4.14.--Means and standard deviations for Question 2.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	.75	.50	4	.50	.58	8	.63	.54
ISFJ	8	.50	.53	6	.83	.41	14	.64	.48
INFJ	3	1.00	.00	4	.50	.58	7	.71	.33
INTJ	3	.33	.58	3	.67	.58	6	.50	.58
ISTP	5	.20	.45	6	.33	.52	11	.27	.49
ISFP	8	.38	.52	9	.11	.33	17	.24	.42
INFP	10	.60	.52	15	.60	.51	25	.60	.51
INTP	3	.33	.58	3	.33	.58	6	.33	.58
ESTP	5	.80	.45	2	.00	.00	7	.57	.32
ESFP	12	.33	.49	9	.56	.53	21	.43	.51
ENFP	30	.47	.51	31	.68	.48	61	.58	.49
ENTP	7	.29	.49	7	.71	.49	14	.50	.49
ESTJ	6	.50	.55	7	.43	.53	13	.46	.54
ESFJ	9	.44	.53	6	.50	.55	15	.47	.54
ENFJ	4	.50	.58	5	.60	.55	9	.56	.56
ENTJ	3	.00	.00	3	1.00	.00	6	.50	.00
Total	120	.46	.49	120	.56	.48	240	.51	.50

Means and standard deviations for Question 3 of the Personal Data Questionnaire ("When involved in extracurricular activities, do you function in a leadership role?") and the respondents' personality types are depicted in Table 4.16.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 3 of the Personal Data Questionnaire as the dependent measure to determine significant differences among the groups (Table 4.17). A significant main effect was not obtained for type of school ($p>.05$).

Table 4.17.--Analysis of variance schools by personality type with Question 3 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	0.15	1	.15	0.98
B (personality type)	3.08	15	.21	1.33
AB	1.98	15	.13	0.86
Within	31.97	208	.15	
Total	37.18	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

A significant main effect was not obtained for personality type ($p>.05$). Also, a significant interaction between personality type and school was not obtained ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question in relation to Question 3 of the Personal Data Questionnaire.

Table 4.16.--Means and standard deviations for Question 3.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	.25	.50	4	.50	.58	8	.38	.54
ISFJ	8	.00	.00	6	.17	.41	14	.07	.18
INFJ	3	.33	.58	4	.00	.00	7	.14	.25
INTJ	3	.00	.00	3	.00	.00	6	.00	.00
ISTP	5	.00	.00	6	.17	.41	11	.09	.22
ISFP	8	.13	.35	9	.11	.33	17	.12	.34
INFP	10	.00	.00	15	.07	.26	25	.04	.16
INTP	3	.33	.58	3	.33	.58	6	.33	.58
ESTP	5	.20	.45	2	.00	.00	7	.14	.32
ESFP	12	.17	.39	9	.00	.00	21	.10	.22
ENFP	30	.30	.47	31	.29	.46	61	.30	.46
ENTP	7	.00	.00	7	.43	.53	14	.21	.27
ESTJ	6	.00	.00	7	.43	.53	13	.23	.28
ESFJ	9	.22	.44	6	1.70	.41	15	.20	.43
ENFJ	4	.25	.50	5	.20	.45	9	.22	.47
ENTJ	3	.33	.58	3	.67	.58	6	.50	.58
Total	120	.17	.31	120	.22	.37	240	.20	.39

Means and standard deviations for Question 4 of the Personal Data Questionnaire ("Are you actively involved in organized outside activities not related to school?") and the respondents' personality types are depicted in Table 4.18.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 4 of the Personal Data Questionnaire as the dependent measure to determine significant differences among groups (Table 4.19). A significant main effect was obtained for the type of school ($p<.01$). The traditionally scheduled students indicated more involvement in activities outside of school ($\overline{X}$ = .56 outside activities) as compared to the flexibly scheduled students ($\overline{X}$ = .44 outside activities).

Table 4.19.--Analysis of variance schools by personality type with Question 4 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	1.07	1	1.07	4.37
B (personality type)	1.24	15	0.35	1.43
AB	2.86	15	0.19	0.78
Within	50.82	208	0.24	
Total	59.98	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

Table 4.18.--Means and standard deviations for Question 4.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	.25	.50	4	.50	.58	8	.38	.54
ISFJ	8	.13	.35	6	.50	.55	14	.29	.44
INFJ	3	.33	.58	4	1.00	.00	7	.71	.25
INTJ	3	.00	.00	3	.33	.58	6	.17	.29
ISTP	5	.20	.48	6	.50	.55	11	.36	.52
ISFP	8	.50	.53	9	.56	.53	17	.53	.53
INFP	10	.60	.52	15	.40	.51	25	.48	.51
INTP	3	.67	.58	3	.67	.58	6	.67	.58
ESTP	5	.20	.48	2	.50	.71	7	.29	.55
ESFP	12	.42	.51	9	.56	.53	21	.48	.52
ENFP	30	.43	.50	31	.65	.49	61	.54	.49
ENTP	7	.86	.38	7	.86	.38	14	.86	.38
ESTJ	6	.17	.41	7	.57	.53	13	.38	.47
ESFJ	9	.56	.53	6	.50	.55	15	.53	.54
ENFJ	4	.75	.50	5	.40	.55	9	.56	.53
ENTJ	3	1.00	.00	3	.67	.58	6	.83	.29
Total	120	.44	.46	120	.56	.50	240	.50	.50

A significant main effect was not obtained for personality type ($p>.05$). Also, a significant interaction between personality type and school was not obtained ($p>.05$). Thus it was not possible to reject the null hypothesis for this research question in relation to Question 4 of the Personal Data Questionnaire.

Research Question VI: What differences exist in student personality types in relation to their attitude toward school course work when flexibly scheduled as opposed to being traditionally scheduled?

Null Hypothesis 6: There will be no significant difference between student personality types and their attitude toward school course work when flexibly or traditionally scheduled.

Respondents were asked to indicate their attitudes toward specific academic areas by answering Questions 5 through 10 of the Personal Data Questionnaire. Data were gathered relating to personality type and responses to Questions 5 through 10 from both the flexibly scheduled and traditionally scheduled students. Means, standard deviations, and analysis of variance tables follow for Questions 5 through 10 of the Personal Data Questionnaire.

Means and standard deviations for Question 5 of the Personal Data Questionnaire ("How would you feel if you had to take math or science on a regular basis?") and the respondents' personality types are depicted in Table 4.20.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 5 of the Personal Data Questionnaire as the dependent measure to determine significant differences among the groups (Table 4.21). A significant main effect was obtained for the type of school ($p<.01$). The traditionally

Table 4.20.--Means and standard deviations for Question 5.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	4.00	1.41	4	3.50	1.73	8	3.75	1.57
ISFJ	8	2.75	1.39	6	4.00	.63	14	3.29	1.06
INFJ	3	3.67	.58	4	4.50	.58	7	4.14	.58
INTJ	3	4.00	1.73	3	4.33	.58	6	4.17	1.16
ISTP	5	3.20	1.30	6	4.17	.41	11	3.73	.81
ISFP	8	2.38	1.41	9	3.11	1.27	17	2.76	1.34
INFP	10	2.30	1.34	15	3.33	1.45	25	2.92	1.41
INTP	3	2.33	.58	3	4.33	1.15	6	3.33	.87
ESTP	5	2.80	1.10	2	2.00	1.41	7	2.57	1.19
ESFP	12	2.75	1.22	9	2.89	1.36	21	2.81	1.28
ENFP	30	3.27	1.39	31	3.68	1.22	61	3.48	1.30
ENTP	7	2.71	1.50	7	3.57	1.27	14	3.14	1.39
ESTJ	6	3.83	1.17	7	4.43	.53	13	4.15	.83
ESFJ	9	3.78	1.20	6	2.83	1.72	15	3.40	1.41
ENFJ	4	3.50	1.73	5	4.20	.84	9	3.89	1.24
ENTJ	3	2.67	1.53	3	4.67	.58	6	3.67	1.06
Total	120	3.08	1.32	120	3.64	1.13	240	3.36	1.33

scheduled students indicated a more favorable attitude concerning math and science courses ($\overline{X}$ = 3.64 math/science) as compared to the flexibly scheduled students ($\overline{X}$ = 3.08 math/science).

Table 4.21.--Analysis of variance schools by personality type with Question 5 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	19.27	1	19.27	11.93
B (personality type)	45.38	15	3.02	1.87
AB	22.80	15	1.52	.94
Within	335.79	208	1.61	
Total	423.18	239		
F .99 (1,208) = 6.76	F .95 (15,208) = 1.72			

A significant main effect was obtained for personality type ($p<.05$). Due to this statistical significance, a Scheffé post-hoc comparison was computed for paired means (Table 4.22). None of these differences was found significant; therefore, the Bonferroni Test was run to determine if differences between cell means and combinations of cell means were significant. Table 4.23 reports the contrasts and their 95 percent confidence intervals.

Of the 10 contrasts selected, three were found significant at the 95 percent level of confidence. The Extroverted-Sensing-Thinking-Judgers (ESTJ's) seem to prefer to take math and science courses on a regular basis over other personality types.

Table 4.22.--Scheffé post-hoc comparison of differences among means for Question 5 for personality types.

	$\bar{X}$	INTJ	ESTJ	INFJ	ENFJ	ISTJ	ISTP	ENTJ	ENFP	ESFJ	INTP	ISFJ	ENTP	INFP	ESFP	ISFP	ESTP
INTJ	4.17	--	.02	.03	.19	.42	.44	.50	.69	.77	.84	.88	1.03	1.25	1.36	1.41	1.60
ESTJ	4.15		--	.01	.17	.40	.42	.48	.67	.75	.82	.86	1.01	1.23	1.34	1.39	1.58
INFJ	4.14			--	.16	.39	.41	.47	.66	.74	.81	.85	1.00	1.22	1.33	1.38	1.57
ENFJ	3.98				--	.23	.25	.31	.50	.58	.65	.69	.84	1.06	1.17	1.22	1.41
ISTJ	3.75					--	.02	.08	.27	.35	.42	.46	.61	.83	.94	.99	1.18
ISTP	3.73						--	.06	.25	.33	.40	.44	.59	.81	.92	.97	1.16
ENTJ	3.67							--	.19	.27	.34	.38	.53	.75	.86	.91	1.10
ENFP	3.48								--	.08	.15	.19	.34	.56	.67	.72	.91
ESFJ	3.40									--	.07	.11	.26	.48	.59	.64	.83
INTP	3.33										--	.04	.19	.41	.52	.57	.76
ISFJ	3.29											--	.15	.37	.48	.53	.72
ENTP	3.14												--	.22	.33	.38	.57
INFP	2.92													--	.11	.16	.35
ESFP	2.81														--	.05	.24
ISFP	2.76															--	.19
ESTP	2.57																--

Table 4.23.--Contrasts on group means using Bonferroni confidence intervals--Question 5 scores.

Contrast	Difference	95% Confidence Interval	Results
$\overline{INTJ}$-$\overline{ESTP}$	1.60	-.38 to 3.58	Not significant
$\overline{INTJ}$-$\overline{ISFP}$	1.41	-.28 to 3.10	Not significant
$\overline{INTJ}$-$\overline{ESFP}$	1.36	-.29 to 3.01	Not significant
$\overline{INTJ}$-$\overline{INFP}$	1.25	-.37 to 2.87	Not significant
$\overline{ISTJ}$-$\overline{ESTP}$	1.58	-.09 to 3.25	Not significant
$\overline{ESTJ}$-$\overline{ISFP}$	1.39	.08 to 2.70	Significant
$\overline{ESTJ}$-$\overline{ESFP}$	1.34	.08 to 2.60	Significant
$\overline{ESTJ}$-$\overline{INFP}$	1.23	.01 to 2.45	Significant
$\frac{\overline{INTJ}+\overline{INTP}+\overline{ENTP}+\overline{ENTJ}}{4} - \frac{\overline{ISFJ}+\overline{ISFP}+\overline{ESFP}+\overline{ESFJ}}{4}$	.43	-.37 to 1.23	Not significant
$\frac{\overline{ISTJ}+\overline{ISTP}+\overline{ESTP}+\overline{ESTJ}}{4} - \frac{\overline{ISFJ}+\overline{ISFP}+\overline{ESFP}+\overline{ESFJ}}{4}$	.63	-.10 to 1.36	Not significant

A significant interaction between personality type and school was not obtained ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question in relation to Question 5 of the Personal Data Questionnaire.

Means and standard deviations for Question 6 of the Personal Data Questionnaire ("How would you feel if you had to take reading or English on a regular basis?") and the respondents' personality types are depicted in Table 4.24.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 6 of the Personal Data Questionnaire as the dependent measure to determine significant differences among groups (Table 4.25). A significant main effect was not obtained for the type of school ($p>.05$).

Table 4.25.--Analysis of variance schools by personality type with Question 6 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	0.50	1	0.50	0.33
B (personality type)	36.26	15	2.42	1.56
AB	13.83	15	0.92	0.60
Within	318.56	208	1.53	
Total	369.16	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

Table 4.24.--Means and standard deviations for Question 6.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	2.75	1.71	4	2.25	.96	8	2.50	1.34
ISFJ	8	2.50	.93	6	3.67	1.21	14	3.00	1.05
INFJ	3	3.67	1.15	4	3.50	1.29	7	3.57	1.23
INTJ	3	4.33	.58	3	4.33	.58	6	4.33	.58
ISTP	5	3.00	1.41	6	3.67	.52	11	3.36	.92
ISFP	8	3.00	1.41	9	3.00	1.22	17	3.00	1.31
INFP	10	3.50	.97	15	2.87	1.46	25	3.12	1.26
INTP	3	3.00	1.00	3	3.33	1.15	6	3.17	1.08
ESTP	5	3.00	1.41	2	2.50	.71	7	2.86	1.21
ESFP	12	3.25	1.36	9	2.78	1.09	21	3.05	1.24
ENFP	30	3.37	1.35	31	3.52	1.03	61	3.44	1.19
ENTP	7	2.71	1.25	7	3.00	1.41	14	2.86	1.33
ESTJ	6	3.83	1.17	7	3.57	1.51	13	3.69	1.35
ESFJ	9	3.22	1.09	6	3.33	1.63	15	3.27	1.31
ENFJ	4	4.25	1.50	5	4.60	.55	9	4.44	.97
ENTJ	3	2.67	2.08	3	4.00	1.00	6	3.33	1.54
Total	120	3.24	1.27	120	3.33	1.14	240	3.29	1.24

Also, a significant main effect was not obtained for personality type ($p>.05$) or interaction between personality type and school ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question in relation to Question 6 of the Personal Data Questionnaire.

Means and standard deviations for Question 7 of the Personal Data Questionnaire ("How would you feel if you had to take social studies on a regular basis?") and the respondents' personality types are depicted in Table 4.26.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 7 of the Personal Data Questionnaire as the dependent measure to determine significant differences among the groups (Table 4.27). A significant main effect was obtained for type of school ($p<.05$). The traditionally scheduled students indicated a more favorable attitude toward social studies courses ($\overline{X}$ = 3.63 social studies) as compared to the flexibly scheduled students ($\overline{X}$ = 3.27 social studies).

A significant main effect was not obtained for personality type ($p>.05$) or the interaction between personality type and school ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question in relation to Question 7 of the Personal Data Questionnaire.

Table 4.26.--Means and standard deviations for Question 7.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	3.25	.96	4	2.50	1.73	8	2.88	1.34
ISFJ	8	3.00	1.20	6	3.67	1.03	14	3.29	1.13
INFJ	3	3.67	.58	4	4.25	.50	7	4.00	.53
INTJ	3	4.33	.58	3	4.33	.58	6	4.33	.58
ISTP	5	2.60	.89	6	3.00	.63	11	2.82	.75
ISFP	8	3.75	1.28	9	3.11	1.27	17	3.41	1.27
INFP	10	3.00	1.25	15	3.53	1.51	25	3.32	1.40
INTP	3	3.00	1.00	3	4.33	.58	6	3.67	.79
ESTP	5	4.00	1.22	2	3.50	.71	7	3.86	1.07
ESFP	12	3.33	1.50	9	3.78	1.39	21	3.52	1.45
ENFP	30	3.37	1.03	31	3.39	1.23	61	3.38	1.13
ENTP	7	2.43	1.13	7	3.71	.95	14	3.07	1.04
ESTJ	6	3.17	.75	7	4.14	.90	13	3.69	.83
ESFJ	9	2.89	.78	6	4.33	.52	15	3.47	.68
ENFJ	4	4.75	.50	5	4.00	.00	9	4.33	.06
ENTJ	3	2.33	.58	3	4.67	.58	6	3.50	.58
Total	120	3.27	1.04	120	3.63	1.05	240	3.45	1.16

Table 4.27.--Analysis of variance schools by personality type with Question 7 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	7.70	1	7.70	6.16
B (personality type)	26.35	15	1.76	1.41
AB	29.24	15	1.95	1.56
Within	260.00	208	1.25	
Total	323.30	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

Means and standard deviations for Question 8 of the Personal Data Questionnaire ("How would you feel if you had to take fine arts courses on a regular basis?") and the respondents' personality types are depicted in Table 4.28.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 8 of the Personal Data Questionnaire as the dependent measure to determine significant differences among the groups (Table 4.29). A significant main effect was not obtained for the type of school ($p>.05$).

A significant main effect was obtained for personality type ($p<.05$). Due to this statistical significance, a Scheffé post-hoc comparison was computed for paired means (Table 4.30). None of these differences was found significant; therefore, the Bonferroni Test was run to determine if differences between cell means and combinations of cell means were significant. Table 4.31 reports the contrasts and their 95 percent confidence intervals.

Table 4.28.--Means and standard deviations for Question 8.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	3.25	.96	4	3.75	.96	8	3.50	.96
ISFJ	8	2.63	1.41	6	3.50	1.76	14	3.00	1.13
INFJ	3	3.67	1.53	4	4.50	.53	7	4.14	.96
INTJ	3	3.00	1.00	3	3.00	2.00	6	3.00	1.50
ISTP	5	3.40	1.52	6	3.67	1.37	11	3.55	1.44
ISFP	8	3.38	1.30	9	3.56	1.01	17	3.47	1.15
INFP	10	3.70	1.42	15	3.07	1.58	25	3.32	1.52
INTP	3	3.67	.58	3	2.33	.58	6	3.00	.58
ESTP	5	3.80	1.30	2	3.00	1.41	7	3.57	1.33
ESFP	12	3.67	1.23	9	4.22	1.30	21	3.90	1.26
ENFP	32	3.93	1.20	31	4.42	.62	61	4.18	.91
ENTP	7	3.29	1.89	7	3.71	1.38	14	3.50	1.64
ESTJ	6	4.17	1.60	7	4.14	.69	13	4.15	1.11
ESFJ	9	3.67	1.50	6	4.67	.52	15	4.07	1.11
ENFJ	4	4.50	.58	5	5.00	.00	9	4.78	.26
ENTJ	3	4.67	.58	3	3.33	1.15	6	4.00	.87
Total	120	3.67	1.29	120	3.91	.95	240	3.79	1.26

Table 4.29.--Analysis of variance schools by personality type with Question 8 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	3.50	1	3.50	2.37
B (personality type)	48.64	15	3.25	2.19
AB	19.79	15	1.32	0.89
Within	308.19	208	1.48	
Total	380.16	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

Of the 14 contrasts selected, four were found significant at the 95 percent level of confidence. The Extroverted-Intuitors-Feelers (ENF's) seem to feel more favorable about taking classes in fine arts, music, art, and drama than did other types.

A significant interaction between personality type and school was not obtained ($p>.05$). Thus, it was not possible to reject the null hypothesis for this research question in relation to Question 8 of the Personal Data Questionnaire.

Means and standard deviations for Question 9 of the Personal Data Questionnaire ("How would you feel if you had to take applied arts courses on a regular basis?") and the respondents' personality types are depicted in Table 4.32.

A 2 (type of school) x 16 (personality type) analysis of variance was conducted with Question 9 of the Personal Data Questionnaire as the dependent measure to determine significant

Table 4.30.--Scheffé post-hoc comparison of differences among means on Question 8 for personality types.

	$\bar{X}$	ENFJ	ENFP	ESTJ	INFJ	ESFJ	ENTJ	ESFP	ESTP	ISTP	ENTP	ISTJ	ISFP	INFP	INTP	INTJ	ISFJ
ENFJ	4.78	--	.60	.63	.64	.71	.78	.88	1.21	1.23	1.28	1.28	1.31	1.46	1.78	1.78	1.78
ENFP	4.18		--	.03	.04	.11	.18	.28	.61	.63	.68	.68	.71	.86	1.18	1.18	1.18
ESTJ	4.15			--	.01	.08	.15	.25	.58	.60	.65	.65	.68	.83	1.15	1.15	1.15
INFJ	4.14				--	.07	.14	.24	.57	.59	.64	.64	.67	.82	1.14	1.14	1.14
ESFJ	4.07					--	.07	.17	.50	.52	.57	.57	.60	.75	1.07	1.07	1.07
ENTJ	4.00						--	.10	.43	.45	.50	.50	.53	.68	1.00	1.00	1.00
ESFP	3.90							--	.33	.35	.40	.40	.43	.58	.90	.90	.90
ESTP	3.57								--	.02	.07	.07	.10	.25	.57	.57	.57
ISTP	3.55									--	.05	.05	.08	.23	.55	.55	.55
ENTP	3.50										--	.00	.03	.18	.50	.50	.50
ISTJ	3.50											--	.03	.18	.50	.50	.50
ISFP	3.47												--	.15	.47	.47	.47
INFP	3.32													--	.32	.32	.32
INTP	3.00														--	.00	.00
INTJ	3.00															--	.00
ISFJ	3.00																--

Table 4.31.--Contrasts on group means using Bonferroni confidence intervals--Question 8 scores.

Contrast	Difference	95% Confidence Interval	Results
$\overline{ENFJ}$-$\overline{ISFJ}$	1.78	.27 to 3.29	Significant
$\overline{ENFJ}$-$\overline{INTJ}$	1.78	-.09 to 3.65	Not significant
$\overline{ENFJ}$-$\overline{INTP}$	1.78	-.09 to 3.65	Not significant
$\overline{ENFJ}$-$\overline{INFP}$	1.46	.08 to 2.83	Significant
$\overline{ENFJ}$-$\overline{ISFP}$	1.31	-.14 to 2.77	Not significant
$\overline{ENFP}$-$\overline{ISFJ}$	1.18	.13 to 2.23	Significant
$\overline{ENFP}$-$\overline{INTJ}$	1.18	-.33 to 2.61	Not significant
$\overline{ENFP}$-$\overline{INTP}$	1.18	-.33 to 2.61	Not significant
$\overline{ENFP}$-$\overline{INFP}$	0.86	.02 to 1.70	Significant
$\overline{ENFP}$-$\overline{ISFP}$	0.71	-.26 to 1.68	Not significant
$\overline{ESTJ}$-$\overline{ISFJ}$	1.15	-.21 to 2.51	Not significant
$\frac{\overline{INFJ}+\overline{INFP}+\overline{ENFP}+\overline{ENFJ}}{4} - \frac{\overline{INTJ}+\overline{INTP}+\overline{ENTP}+\overline{ENTJ}}{4}$	0.61	-.22 to 1.44	Not significant
$\frac{\overline{ISTJ}+\overline{ISTP}+\overline{ESTP}+\overline{ESTJ}}{4} - \frac{\overline{INTJ}+\overline{INTP}+\overline{ENTP}+\overline{ENTJ}}{4}$	0.33	-.56 to 1.22	Not significant
$\frac{\overline{ISFJ}+\overline{ISFP}+\overline{ESFP}+\overline{ESFJ}}{4} - \frac{\overline{INTJ}+\overline{INTP}+\overline{ENTP}+\overline{ENTJ}}{4}$	0.23	-.57 to 1.03	Not significant

Table 4.32.--Means and standard deviations for Question 9.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	3.75	.96	4	3.25	1.26	8	3.50	1.11
ISFJ	8	3.50	1.41	6	4.33	.82	14	3.86	1.16
INFJ	3	3.33	.58	4	3.75	.96	7	3.57	.80
INTJ	3	2.33	.58	3	2.67	2.08	6	2.50	1.33
ISTP	5	3.40	1.14	6	3.33	.82	11	3.36	.97
ISFP	8	3.75	1.16	9	3.67	1.22	17	3.71	1.19
INFP	10	4.00	1.41	15	3.33	1.35	25	3.60	1.37
INTP	3	3.00	1.00	3	3.33	2.08	6	3.17	1.54
ESTP	5	3.60	1.34	2	4.00	.00	7	3.71	.96
ESFP	12	3.83	1.11	9	3.89	1.17	21	3.86	1.14
ENFP	30	3.73	1.26	31	3.90	.94	61	3.81	1.10
ENTP	7	3.86	1.35	7	3.57	1.13	14	3.71	1.24
ESTJ	6	4.33	1.21	7	3.57	1.27	13	3.92	1.24
ESFJ	9	4.33	.71	6	3.83	.75	15	4.13	.73
ENFJ	4	4.00	.82	5	4.40	.89	9	4.22	.86
ENTJ	3	3.69	1.53	3	4.00	.00	6	3.83	.77
Total	120	3.76	1.16	120	3.72	1.07	240	3.74	1.14

differences among the groups (Table 4.33). A significant main effect was not obtained for the type of school ($p>.05$).

Table 4.33.--Analysis of variance schools by personality type with Question 9 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	0.10	1	0.10	.08
B (personality type)	19.71	15	1.31	.98
AB	10.38	15	.69	.51
Within	278.27	208	1.34	
Total	308.46	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

Furthermore, a significant main effect was not obtained for personality type ($p>.05$) or the interaction of personality type and type of school ($p>.05$). It was not possible to reject the null hypothesis of this research question in relation to Question 9 of the Personal Data Questionnaire.

Means and standard deviations for Question 10 of the Personal Data Questionnaire ("How would you feel if you had to take physical education courses on a regular basis?") and the respondents' personality types are depicted in Table 4.34.

A 2 (type of school) x 16 (personality type) analysis was conducted with Question 10 of the Personal Data Questionnaire as

Table 4.34.--Means and standard deviations for Question 10.

Personality Type	Flexible School			Traditional School			Total		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
ISTJ	4	3.75	1.26	4	3.25	.50	8	3.50	.88
ISFJ	8	3.63	1.50	6	3.50	.84	14	3.57	1.22
INFJ	3	.333	2.08	4	3.75	1.26	7	3.57	1.61
INTJ	3	2.33	1.53	3	2.33	2.31	6	2.33	1.92
ISTP	5	4.80	.45	6	3.83	1.60	11	4.27	1.08
ISFP	8	4.25	.71	9	3.33	1.32	17	3.76	1.03
INFP	10	3.60	1.43	15	2.87	1.60	25	3.16	1.53
INTP	3	2.33	2.31	3	2.67	1.15	6	2.50	1.73
ESTP	5	3.80	1.30	2	3.00	1.41	7	3.57	1.33
ESFP	12	3.92	1.62	9	3.56	1.59	21	3.76	1.61
ENFP	30	3.87	1.33	31	3.65	1.36	61	3.75	1.35
ENTP	7	3.29	1.60	7	4.29	1.11	14	3.79	1.36
ESTJ	6	4.50	.84	7	3.14	2.57	13	3.77	1.77
ESFJ	9	4.11	.78	6	4.00	1.10	15	4.07	.91
ENFJ	4	4.00	.82	5	4.00	1.73	9	4.00	1.33
ENTJ	3	4.33	1.15	3	4.67	.58	6	4.50	.87
Total	120	3.83	1.27	120	3.51	1.42	240	3.67	1.36

the dependent measure to determine significant differences among the groups (Table 4.35). A significant main effect ($p>.05$) was not obtained for the type of school.

Table 4.35.--Analysis of variance schools by personality type with Question 10 as the dependent variable.

Source	SS	df	MS	F
A (type of school)	6.34	1	6.34	3.41
B (personality type)	38.49	15	2.57	1.38
AB	16.01	15	1.07	.58
Within	386.16	208	1.86	
Total	447.00	239		
F .95 (1,208) = 3.89	F .95 (15,208) = 1.72			

Also, a significant main effect was not obtained for personality type ($p>.01$) or the interaction of personality type and type of school ($p>.05$). It was not possible to reject the null hypothesis of this research question in relation to Question 10 of the Personal Data Questionnaire.

Summary of Findings

Research Question I

Students sampled from the flexibly scheduled school and the traditionally scheduled school were given the Myers-Briggs Type Indicator. The tests were hand scored and distributions of personality

types were placed in the Myers-Briggs Type Tables 4.1 and 4.2. All 16 personality types were represented to varying degrees in both schools.

Research Question II

No significant relationship was found between student personality types in relationship to attendance measures when flexibly scheduled as opposed to being traditionally scheduled.

Research Question III

No significant relationship was found between student personality types in relationship to grade point averages when flexibly scheduled as opposed to being traditionally scheduled.

Research Question IV

No significant relationship was found between student personality types and their attitude toward attending school when flexibly scheduled as opposed to being traditionally scheduled.

Research Question V

No significant relationship was found between student personality types and their participation in extracurricular activities when flexibly scheduled as opposed to being traditionally scheduled.

Research Question VI

No significant relationship was found between student personality types and their preference for specific school courses when flexibly scheduled as opposed to being traditionally scheduled.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The primary purpose of this study was to find out if personality types, as measured by the Myers-Briggs Type Indicator, function differently in the areas of attendance, grade point average, attitude toward school, involvement in extracurricular activities, and attitude toward subject matter when subjected to scheduling practices of a flexibly or traditionally scheduled school.

The resolution of these objectives was sought by administering and scoring the Myers-Briggs Type Indicator and a Personal Data Questionnaire to 120 students attending a flexibly scheduled school and 120 students attending a traditionally scheduled school. Along with these measures, school records consisting of student grade point averages and attendance records were obtained for all subjects.

The review of the literature indicates that certain personality types, as identified by the Myers-Briggs Type Indicator, are attracted toward specific subject areas. Also, there is some evidence in the literature which indicates certain personality types achieve more success in standardized achievement tests and success in school than other types.

Literature also supports the idea that school climate is related to the satisfaction level of personality types. There was, however, no literature available that indicated if flexible or traditional school scheduling practices would have any significant effect upon the manner in which student personality types would function in the two school settings.

The design of the present study included the selection of the sample, specific research questions and hypotheses, and the sources from which data were gathered. Once collected, the data were analyzed by obtaining means, standard deviations, and inter-correlations for all measures. Each research question was then analyzed by using a two-way analysis of variance. Scheffé and Bonferroni post-hoc tests were used to isolate mean differences when significant F-ratios were found.

To determine if personality types do function differently depending upon their being flexibly or traditionally scheduled, six research questions were investigated. The major findings regarding the research questions are reported in the following section.

Major Findings

Research Question I

Students sampled from the flexibly scheduled school and the traditionally scheduled school were given the Myers-Briggs Type Indicator. The tests were hand scored and distributions of personality types were placed in the Myers-Briggs Type Tables 4.1 and 4.2

found in the preceding chapter. All 16 personality types were represented to varying degrees in both schools.

Research Question II

No significant relationship was found between student personality types in relationship to attendance measures when flexibly scheduled as opposed to being traditionally scheduled.

Research Question III

No significant relationship was found between student personality types in relationship to grade point averages when flexibly scheduled as opposed to being traditionally scheduled.

Research Question IV

No significant relationship was found between student personality types and their attitude toward attending school when flexibly scheduled as opposed to being traditionally scheduled.

Research Question V

No significant relationship was found between student personality types and their participation in extracurricular activities when flexibly scheduled as opposed to being traditionally scheduled.

Research Question VI

No significant relationship was found between student personality types and their preference for specific school courses when flexibly scheduled as opposed to being traditionally scheduled.

Discussion of the Findings and Supplemental Data

As indicated in the previous research questions, no significance was obtained in this study between the attitudes and functioning of personality types when students are flexibly or traditionally scheduled.

I believe significance was not found in this study because the Myers-Briggs Type Indicator is an instrument that identifies the manner in which people prefer to function as indicated by its personality preference scores. As stated previously in Chapter II, the Indicator was not designed to categorize people in a cement mold in which there is no mobility between personality preference types. It is always possible for personality types to "go against the grain" and act in direct opposition to their preferred manner of functioning. In the public schools the variety of courses, differing teacher approaches, and constraints ensure that students cannot always act according to their preference type. For example, a traditional school with a rigid time schedule does not allow the Perceptive (P) type students the freedom to be completely spontaneous and unstructured about attending class on time. The students must "go against the grain" of their preferred manner of functioning if they are to survive in that particular school. The students must draw from their Judgmental (J) mode, or less developed preferred way of structuring time, to conform to the school's rigid time constraints.

I believe that for students to survive adequately in any school setting they must be adaptable with their personality

preference types in order to meet demands and expectations placed upon them in any school. I believe that most students will adapt to any school structure regardless of their personality type in an attempt to achieve educational success and societal norms.

The following information was also generated from this study in addition to the data directly relating to the research questions and their hypotheses.

There was significance found in the number of days and periods student samples were absent between the two schools. The flexibly scheduled students missed both more days absent and periods absent than the students attending the traditional school. I speculate that the flexibly scheduled students had more absences because the flexible school allows students more freedom to make decisions. Some of their decisions to use unscheduled time may interfere with their attendance in their scheduled classes. Traditional students are not allowed any unscheduled time and, therefore, are less likely to miss classes as frequently as the flexibly scheduled students. The author realizes that a number of factors could influence attendance rates, but feels the ones listed above to be logical.

Further investigation of data reveals that the grade point averages (GPA's) of the traditionally scheduled students were significantly higher than those of the flexibly scheduled students. The intercorrelation matrix indicates that the more days students were absent, the lower their GPA's. I believe the more often one attends class the more he is bombarded with lectures, course work,

and time for studying specific class materials. Students absent frequently from the same class may miss vital class assignments and lectures required for proper understanding of course material.

The results of the statistical analysis also indicated that a certain personality type achieved a better grade point average overall when the flexibly and traditionally scheduled students were combined. The literature has indicated that Intuitive (N) students usually have more success on standardized test measures and achieve more success in school. In correlation with the literature, the Intuitive (N) students, combined, achieved a higher grade point average than Sensing (S) types.

Significance was found in the positive attitude the flexibly scheduled students had in attending school as opposed to the traditionally scheduled students. I speculate that the flexibly scheduled students enjoyed attending school more because the constraints placed upon them are not as demanding as the ones placed upon students attending a traditional school. Students in a flexibly scheduled school have the freedom to determine how to use their unscheduled time, whereas traditionally scheduled students are not allowed unscheduled time to make decisions about.

There were data which indicated that the traditionally scheduled students were more involved in extracurricular activities not related to school. The author can not intelligently speculate the reasons for this significance occurring.

Students attending the traditional school indicated an attitude significantly more positive toward taking math and science courses on a regular basis than did the flexibly scheduled students. The author can again make no intelligent conclusions for this significance occurring. Further investigation would need to be conducted to isolate the differences found in the math and science areas.

When the student personality types of both schools were combined, significance did occur between personality types and attitude toward taking math and science classes. The Sensing (S)-Thinking (T) student preferred math and science courses over other personality preference types. This is possibly true because the S-T modes are highly involved with matter-of-fact, objective operational traits.

Samples in the traditional school also had a more positive attitude toward taking social studies courses than the flexibly scheduled samples. Again, the author can not intelligently speculate for this significance occurring.

When the flexibly and traditionally scheduled students were combined, statistical analyses indicated that a certain student personality type had a more favorable attitude toward taking fine arts classes than did other personality types. After post-hoc tests were conducted, the significance was found in the Intuitive (N)-Feelers (F). As supported by the literature, the N-F types are more interested in the fine arts areas because their traits deal

with abstract thinking and personal interpretations of situations or objects.

The author wishes to state that even though differences were found between schools, the intent of this study was not to evaluate the merits of one school scheduling procedure against another. The sole purpose of this study was to find out if personality types function differently in specific areas when subject to scheduling practices of a flexibly or traditionally scheduled school.

Conclusions and Implications

From the results of this study there seems to be no evidence to support the use of flexible or traditional scheduling practices in an attempt to increase the functioning levels of personality types in the areas of attendance, grade point average, attitude toward school, attitude toward extracurricular activities, and attitude toward subject matter.

The data of this study, along with the literature, support the fact that Intuitive (N) types achieve better grade point averages than do Sensing (S) types. A possible implication may be drawn from this that secondary schools value and stress the intuitive process of abstract thinking more heavily than the sensing process of concrete thinking. Students who have developed their S preference type more proficiently than their N preference type are likely not to achieve as high a GPA as the N type.

As supported by the literature and data obtained in this study, Sensing (S)-Thinking (T) types have a more favorable attitude

toward taking math and science courses than do other types. Intuitive (N)-Feeling (F) types have a more favorable attitude toward taking fine arts courses than do other types. We know scheduling processes have no bearing on the way personality types achieve; however, there is some indication that attitude of personality types relates to areas of subject interest. If personality types were allowed to function primarily in areas within the public schools compatible with their personal preference types, their attitude toward school in general may be improved.

Data from this study seemed to indicate that the traditional school had better attendance rates and grade point averages than did the flexibly scheduled school. Implications must not be drawn from these data that the traditional school is a better educational environment for students than is the flexible school. As stated in the limitations of this research, GPA's are a purely subjective measure comparable only within a specific school, their teachers, and their students. In other words, an "A" in the traditional school could be comparable to a "B" in the flexibly scheduled school or vice versa.

Student attendance was better in the traditional school than in the flexibly scheduled school; however, the flexibly scheduled students had a more positive attitude toward attending their school. Again, implications should not be considered that the more students miss school, the better their attitude. Too many uncontrolled variables affect this assumption, such as faculties, teacher personalities, and student sociability between schools.

In the final analysis, if schools wish to change scheduling procedures from traditional to flexible or vice versa, to affect student personality type performance in areas of attendance, grade point average, attitude toward school, extracurricular activities, and subject matter, this study does not give evidence in favor of supporting that idea.

Recommendations for Future Research

Emerging from this study are a number of possible ideas for future inquiry and research.

1. What would be the educational and attitudinal effects of matching students and teachers together with like personality preference types?
2. What would be the educational and attitudinal effect of allowing teachers and students to function in environments compatible with their personality preference types?
3. What results would be obtainable if larger samples were used along with standardized tests and grade point averages?
4. What results would be obtained if this study were replicated in several different school environments ranging from open to democratic to traditional?
5. What differences would have been found if the sample were divided by sex and grade distinction?

APPENDICES

APPENDIX A

THE MYERS-BRIGGS TYPE INDICATOR--FORM F

MYERS-BRIGGS TYPE INDICATOR

FORM F

by Katharine C. Briggs and Isabel Briggs Myers

DIRECTIONS:

There are no "right" or "wrong" answers to these questions. Your answers will help show how you like to look at things and how you like to go about deciding things. Knowing your own preferences and learning about other people's can help you understand where your special strengths are, what kinds of work you might enjoy and be successful doing, and how people with different preferences can relate to each other and be valuable to society.

Read each question carefully and mark your answer on the separate answer sheet. *Make no marks on the question booklet.* Do not think too long about any question. If you cannot decide on a question, skip it but be careful that the *next* space you mark on the answer sheet has the same number as the question you are then answering.

Read the directions on your answer sheet, fill in your name and any other facts asked for, and work through until you have answered all the questions.

Consulting Psychologists Press, Inc. 577 College Ave., Palo Alto, California 94306.

Which answer comes closest to telling how you usually feel or act?

1. Does following a schedule
   (A) appeal to you, or
   (B) cramp you?

2. Do you usually get along better with
   (A) imaginative people, or
   (B) realistic people?

3. If strangers are staring at you in a crowd, do you
   (A) often become aware of it, or
   (B) seldom notice it?

4. Are you more careful about
   (A) people's feelings, or
   (B) their rights?

5. Are you
   (A) inclined to enjoy deciding things, or
   (B) just as glad to have circumstances decide a matter for you?

6. When you are with a group of people, would you usually rather
   (A) join in the talk of the group, or
   (B) talk individually with people you know well?

7. When you have more knowledge or skill in something than the people around you, is it more satisfying
   (A) to guard your superior knowledge, or
   (B) to share it with those who want to learn?

8. When you have done all you can to remedy a troublesome situation, are you
   (A) able to stop worrying about it, or
   (B) still more or less haunted by it?

9. If you were asked on a Saturday morning what you were going to do that day, would you
   (A) be able to tell pretty well, or
   (B) list twice too many things, or
   (C) have to wait and see?

10. Do you think on the whole that
    (A) children have the best of it, or
    (B) life is more interesting for grown-ups?

11. In doing something that many other people do, does it appeal to you more to
    (A) do it in the accepted way, or
    (B) invent a way of your own?

12. When you were small, did you
    (A) feel sure of your parents' love and devotion to you, or
    (B) feel that they admired and approved of some other child more than they did of you?

13. Do you
    (A) rather prefer to do things at the last minute, or
    (B) find that hard on the nerves?

14. If a breakdown or mix-up halted a job on which you and a lot of others were working, would your impulse be to
    (A) enjoy the breathing spell, or
    (B) look for some part of the work where you could still make progress, or
    (C) join the "trouble-shooters" who were wrestling with the difficulty?

15. Do you usually
    (A) show your feelings freely, or
    (B) keep your feelings to yourself?

16. When you have decided upon a course of action, do you
    (A) reconsider it if unforeseen disadvantages are pointed out to you, or
    (B) usually put it through to a finish, however it may inconvenience yourself and others?

17. In reading for pleasure, do you
    (A) enjoy odd or original ways of saying things, or
    (B) like writers to say exactly what they mean?

18. In any of the ordinary emergencies of everyday life, do you prefer to
    (A) take orders and be helpful, or
    (B) give orders and be responsible?

19. At parties, do you
    (A) sometimes get bored, or
    (B) always have fun?

20. Is it harder for you to adapt to
    (A) routine, or
    (B) constant change?

21. Would you be more willing to take on a heavy load of extra work for the sake of
    (A) extra comforts and luxuries, or
    (B) a chance to achieve something important?

22. Are the things you plan or undertake
    (A) almost always things you can finish, or
    (B) often things that prove too difficult to carry through?

23. Are you more attracted to
    (A) a person with a quick and brilliant mind, or
    (B) a practical person with a lot of common sense?

24. Do you find people in general
    (A) slow to appreciate and accept ideas not their own, or
    (B) reasonably open-minded?

25. When you have to meet strangers, do you find it
    (A) pleasant, or at least easy, or
    (B) something that takes a good deal of effort?

26. Are you inclined to
    (A) value sentiment more than logic, or
    (B) value logic more than sentiment?

27. Do you prefer to
    (A) arrange dates, parties, etc. well in advance, or
    (B) be free to do whatever looks like fun when the time comes?

28. In making plans which concern other people, do you prefer to
    (A) take them into your confidence, or
    (B) keep them in the dark until the last possible moment?

29. Is it a higher compliment to be called
    (A) a person of real feeling, or
    (B) a consistently reasonable person?

30. When you have a decision to make, do you usually
    (A) make it right away, or
    (B) wait as long as you reasonably can before deciding?

31. When you run into an unexpected difficulty in something you are doing, do you feel it to be
    (A) a piece of bad luck, or
    (B) a nuisance, or
    (C) all in the day's work?

32. Do you almost always
    (A) enjoy the present moment and make the most of it, or
    (B) feel that something just ahead is more important?

33. Are you
    (A) easy to get to know, or
    (B) hard to get to know?

34. With most of the people you know, do you
    (A) feel that they mean what they say, or
    (B) feel you must watch for a hidden meaning?

35. When you start a big project that is due in a week, do you
    (A) take time to list the separate things to be done and the order of doing them, or
    (B) plunge in?

36. In solving a personal problem, do you
    (A) feel more confident about it if you have asked other people's advice, or
    (B) feel that nobody else is in as good a position to judge as you are?

37. Do you admire more the people who are
    (A) conventional enough never to make themselves conspicuous, or
    (B) too original and individual to care whether they are conspicuous or not?

38. Which mistake would be more natural for you:
    (A) to drift from one thing to another all your life, or
    (B) to stay in a rut that didn't suit you?

Go on to the next page.

39. When you run across people who are mistaken in their beliefs, do you feel that
    (A) it is your duty to set them right, or
    (B) it is their privilege to be wrong?

40. When an attractive chance for leadership comes to you, do you
    (A) accept it if it is something you can really swing, or
    (B) sometimes let it slip because you are too modest about your own abilities,
    (C) or doesn't leadership ever attract you?

41. Among your friends, are you
    (A) one of the last to hear what is going on, or
    (B) full of news about everybody?

42. Are you at your best
    (A) when dealing with the unexpected, or
    (B) when following a carefully worked-out plan?

43. Does the importance of doing well on a test make it generally
    (A) easier for you to concentrate and do your best, or
    (B) harder for you to concentrate and do yourself justice?

44. In your free hours, do you
    (A) very much enjoy stopping somewhere for refreshments, or
    (B) usually want to use the time and money another way?

45. At the time in your life when things piled up on you the worst, did you find
    (A) that you had gotten into an impossible situation, or
    (B) that by doing only the necessary things you could work your way out?

46. Do most of the people you know
    (A) take their fair share of praise and blame, or
    (B) grab all the credit they can but shift any blame on to someone else?

47. When you are in an embarrassing spot, do you usually
    (A) change the subject, or
    (B) turn it into a joke, or
    (C) days later, think of what you should have said?

48. Are such emotional "ups and downs" as you may feel
    (A) very marked, or
    (B) rather moderate?

49. Do you think that having a daily routine is
    (A) a comfortable way to get things done, or
    (B) painful even when necessary?

50. Are you usually
    (A) a "good mixer", or
    (B) rather quiet and reserved?

51. In your early childhood (at six or eight), did you
    (A) feel your parents were very wise people who should be obeyed, or
    (B) find their authority irksome and escape it when possible?

52. When you have a suggestion that ought to be made at a meeting, do you
    (A) stand up and make it as a matter of course, or
    (B) hesitate to do so?

53. Do you get more annoyed at
    (A) fancy theories, or
    (B) people who don't like theories?

54. When you are helping in a group undertaking, are you more often struck by
    (A) the cooperation, or
    (B) the inefficiency,
    (C) or don't you get involved in group undertakings?

55. When you go somewhere for the day, would you rather
    (A) plan what you will do and when, or
    (B) just go?

56. Are the things you worry about
    (A) often really not worth it, or
    (B) always more or less serious?

57. In deciding something important, do you
    (A) find you can trust your feeling about what is best to do, or
    (B) think you should do the *logical* thing, no matter how you feel about it?

58. Do you tend to have
(A) deep friendships with a very few people, or
(B) broad friendships with many different people?

59. Do you think your friends
(A) feel you are open to suggestions, or
(B) know better than to try to talk you out of anything you've decided to do?

60. Does the idea of making a list of what you should get done over a week-end
(A) appeal to you, or
(B) leave you cold, or
(C) positively depress you?

61. In traveling, would you rather go
(A) with a companion who had made the trip before and "knew the ropes", or
(B) alone or with someone greener at it than yourself?

62. Would you rather have
(A) an opportunity that may lead to bigger things, or
(B) an experience that you are sure to enjoy?

63. Among your personal beliefs, are there
(A) some things that cannot be proved, or
(B) only things than *can* be proved?

64. Would you rather
(A) support the established methods of doing good, or
(B) analyze what is still wrong and attack unsolved problems?

65. Has it been your experience that you
(A) often fall in love with a notion or project that turns out to be a disappointment—so that you "go up like a rocket and come down like the stick", or do you
(B) use enough judgment on your enthusiasms so that they do not let you down?

66. Do you think you get
(A) more enthusiastic about things than the average person, or
(B) less enthusiastic about things than the average person?

67. If you divided all the people you know into those you like, those you dislike, and those toward whom you feel indifferent, would there be more of
(A) those you like, or
(B) those you dislike?

[On this next question *only*, if two answers are true, mark both.]

68. In your daily work, do you
(A) rather enjoy an emergency that makes you work against time, or
(B) hate to work under pressure, or
(C) usually plan your work so you won't *need* to work under pressure?

69. Are you more likely to speak up in
(A) praise, or
(B) blame?

70. Is it higher praise to say someone has
(A) vision, or
(B) common sense?

71. When playing cards, do you enjoy most
(A) the sociability,
(B) the excitement of winning,
(C) the problem of getting the most out of each hand,
(D) the risk of playing for stakes,
(E) or don't you enjoy playing cards?

Go on to the next page.

Which word in each pair appeals to you more?

72.	(A)	firm-minded	warm-hearted	(B)	98.	(A)	sensible	fascinating	(B)
73.	(A)	imaginative	matter-of-fact	(B)	99.	(A)	changing	permanent	(B)
74.	(A)	systematic	spontaneous	(B)	100.	(A)	determined	devoted	(B)
75.	(A)	congenial	effective	(B)	101.	(A)	system	zest	(B)
76.	(A)	theory	certainty	(B)	102.	(A)	facts	ideas	(B)
77.	(A)	party	theater	(B)	103.	(A)	compassion	foresight	(B)
78.	(A)	build	invent	(B)	104.	(A)	concrete	abstract	(B)
79.	(A)	analyze	sympathize	(B)	105.	(A)	justice	mercy	(B)
80.	(A)	popular	intimate	(B)	106.	(A)	calm	lively	(B)
81.	(A)	benefits	blessings	(B)	107.	(A)	make	create	(B)
82.	(A)	casual	correct	(B)	108.	(A)	wary	trustful	(B)
83.	(A)	active	intellectual	(B)	109.	(A)	orderly	easy-going	(B)
84.	(A)	uncritical	critical	(B)	110.	(A)	approve	question	(B)
85.	(A)	scheduled	unplanned	(B)	111.	(A)	gentle	firm	(B)
86.	(A)	convincing	touching	(B)	112.	(A)	foundation	spire	(B)
87.	(A)	reserved	talkative	(B)	113.	(A)	quick	careful	(B)
88.	(A)	statement	concept	(B)	114.	(A)	thinking	feeling	(B)
89.	(A)	soft	hard	(B)	115.	(A)	theory	experience	(B)
90.	(A)	production	design	(B)	116.	(A)	sociable	detached	(B)
91.	(A)	forgive	tolerate	(B)	117.	(A)	sign	symbol	(B)
92.	(A)	hearty	quiet	(B)	118.	(A)	systematic	casual	(B)
93.	(A)	who	what	(B)	119.	(A)	literal	figurative	(B)
94.	(A)	impulse	decision	(B)	120.	(A)	peacemaker	judge	(B)
95.	(A)	speak	write	(B)	121.	(A)	accept	change	(B)
96.	(A)	affection	tenderness	(B)	122.	(A)	agree	discuss	(B)
97.	(A)	punctual	leisurely	(B)	123.	(A)	executive	scholar	(B)

Which answer comes closest to telling how you usually feel or act?

124. Do you find the more routine parts of your day
(A) restful, or
(B) boring?

125. If you think you are not getting a square deal in a club or team to which you belong, is it better to
(A) shut up and take it, or
(B) use the threat of resigning if necessary to get your rights?

126. Can you
(A) talk easily to almost anyone for as long as you have to, or
(B) find a lot to say only to certain people or under certain conditions?

127. When strangers notice you, does it
(A) make you uncomfortable, or
(B) not bother you at all?

128. If you were a teacher, would you rather teach
(A) fact courses, or
(B) courses involving theory?

129. When something starts to be the fashion, are you usually
(A) one of the first to try it, or
(B) not much interested?

130. In solving a difficult personal problem, do you
(A) tend to do more worrying than is useful in reaching a decision, or
(B) feel no more anxiety than the situation requires?

131. If people seem to slight you, do you
(A) tell yourself they didn't mean anything by it, or
(B) distrust their good will and stay on guard with them thereafter?

132. When you have a special job to do, do you like to
(A) organize it carefully before you start, or
(B) find out what is necessary as you go along?

133. Do you feel it is a worse fault
(A) to show too much warmth, or
(B) not to have warmth enough?

134. When you are at a party, do you like to
(A) help get things going, or
(B) let the others have fun in their own way?

135. When a new opportunity comes up, do you
(A) decide about it fairly quickly, or
(B) sometimes miss out through taking too long to make up your mind?

136. In managing your life, do you tend to
(A) undertake too much and get into a tight spot, or
(B) hold yourself down to what you can comfortably handle?

137. When you find yourself definitely in the wrong, would you rather
(A) admit you are wrong, or
(B) not admit it, though everyone knows it,
(C) or don't you ever find yourself in the wrong?

138. Can the new people you meet tell what you are interested in
(A) right away, or
(B) only after they really get to know you?

139. In your home life, when you come to the end of some undertaking, are you
(A) clear as to what comes next and ready to tackle it, or
(B) glad to relax until the next inspiration hits you?

140. Do you think it more important to
(A) be able to see the possibilities in a situation, or
(B) be able to adjust to the facts as they are?

141. Do you feel that the people whom you know personally owe their successes more to
(A) ability and hard work, or
(B) luck, or
(C) bluff, pull and shoving themselves ahead of others?

142. In getting a job done, do you depend upon
(A) starting early, so as to finish with time to spare, or
(B) the extra speed you develop at the last minute?

143. After associating with superstitious people, have you
(A) found yourself slightly affected by their superstitions, or
(B) remained entirely unaffected?

Go on to the next page.

144. When you don't agree with what has just been said, do you usually
(A) let it go, or
(B) put up an argument?

145. Would you rather be considered
(A) a practical person, or
(B) an ingenious person?

146. Out of all the good resolutions you may have made, are there
(A) some you have kept to this day, or
(B) none that have really lasted?

147. Would you rather work under someone who is
(A) always kind, or
(B) always fair?

148. In a large group, do you more often
(A) introduce others, or
(B) get introduced?

149. Would you rather have as a friend someone who
(A) is always coming up with new ideas, or
(B) has both feet on the ground?

150. When you have to do business with strangers, do you feel
(A) confident and at ease, or
(B) a little fussed or afraid that they won't want to bother with you?

151. When it is settled well in advance that you will do a certain thing at a certain time, do you find it
(A) nice to be able to plan accordingly, or
(B) a little unpleasant to be tied down?

152. Do you feel that sarcasm
(A) should never be used where it can hurt people's feelings, or
(B) is too effective a form of speech to be discarded for such a reason?

153. When you think of some little thing you should do or buy, do you
(A) often forget it till much later, or
(B) usually get it down on paper to remind yourself, or
(C) always carry through on it without reminders?

154. Do you more often let
(A) your heart rule your head, or
(B) your head rule your heart?

155. In listening to a new idea, are you more anxious to
(A) find out all about it, or
(B) judge whether it is right or wrong?

156. Are you oppressed by
(A) many different worries, or
(B) comparatively few?

157. When you don't approve of the way a friend is acting, do you
(A) wait and see what happens, or
(B) do or say something about it?

158. Do you feel it is a worse fault to be
(A) unsympathetic, or
(B) unreasonable?

159. When a new situation comes up which conflicts with your plans, do you try first to
(A) change your plans to fit the situation, or
(B) change the situation to fit your plans?

160. Do you think the people close to you know how you feel
(A) about most things, or
(B) only when you have had some special reason to tell them?

161. When you have a serious choice to make, do you
(A) almost always come to a clear-cut decision, or
(B) sometimes find it so hard to decide that you do not wholeheartedly follow up either choice?

162. On most matters, do you
(A) have a pretty definite opinion, or
(B) like to keep an open mind?

163. As you get to know people better, do you more often find that they
(A) let you down or disappoint you in some way, or
(B) improve upon acquaintance?

164. When the truth would not be polite, are you more likely to tell
(A) a polite lie, or
(B) the impolite truth?

165. In your way of living, do you prefer to be
(A) original, or
(B) conventional?

166. Would you have liked to argue the meaning of
(A) a lot of these questions, or
(B) only a few?

APPENDIX B

PERSONAL DATA QUESTIONNAIRE

APPENDIX B

PERSONAL DATA QUESTIONNAIRE

Name_____

Grade_____

Your answers will be STRICTLY CONFIDENTIAL, so please be completely honest and candid.

Circle your response.

YES NO 1. Do you enjoy coming to school most of the time?

YES NO 2. Are you involved in extracurricular school activities?

YES NO 3. When involved in extracurricular activities, do you function in a leadership role? (Ex. captain of football team, class officer, etc.)

YES NO 4. Are you actively involved in organized outside activities not related to school? (Ex. church groups, Boy Scouts, Girl Scouts, J.A., etc.)

(5)	(4)	(3)	(2)	(1)
I'd definitely like it	I'd probably like it	I have no opinion	I'd probably dislike it	I'd definitely dislike it

How would you feel if you had to take the following subjects on a regular basis?

5.	Math or science	(5)	(4)	(3)	(2) (1)
6.	Reading or English	(5)	(4)	(3)	(2) (1)
7.	Social studies	(5)	(4)	(3)	(2) (1)
8.	Fine arts (music, art, drama)	(5)	(4)	(3)	(2) (1)
9.	Applied arts (home ec., ind. arts)	(5)	(4)	(3)	(2) (1)
10.	Physical education	(5)	(4)	(3)	(2) (1)

BIBLIOGRAPHY

BIBLIOGRAPHY

Books

Alexander, William M., and Hines, Vynce A. Independent Study in Secondary Schools. New York: Holt, Rinehart and Winston, Inc., 1967.

Jung, Carl G. Psychological Types. Trans. H. G. Baynes. New York: Harcourt, Brace & Company, 1953.

Journals

Levy, Nissim; Murphy, Clennie; and Carlson, Rae. "Personality Types Among Negro College Students." Educational and Psychological Measurements 32,3 (1962): 652.

Myers, Isabel Briggs. "Inferences as to the Nature of Jung's Types, From the Shape of Regressions of Dependent Variables Upon Myers-Briggs Type Indicator Scores." American Psychologist 17 (1962): 364.

Nichols, R. C., and Holland, J. L. "Prediction of the First Year College Performance of High Aptitude Students." Psychological Monographs 77,7 (1963).

Reynolds, Richard J., and Hope, Amy G. "Typology as a Moderating Variable in Success in Science." Psychological Reports 26,3 (1970): 715.

Strickler, L. J., and Ross, J. "An Assessment of Some Structural Properties of the Jungian Personality Typology." Journal of Abnormal and Social Psychology 68 (1964): 62-71.

_____. "Some Correlates of a Jungian Personality Inventory." Psychological Reports 14 (April 1964): 623-643.

Wilhelms, Fred. "Helping Teachers in the Art of Teaching." NAASP Spotlight 74 (September-October 1966): 37.

Unpublished Dissertations

Barberousse, E. "An Investigation of Eighth Grade Students' Behavioral Responses on Creativity Criteria, Intelligence and Sociometric Choices in Relation to Their Jungian Psychological Types." Ph.D. dissertation, Auburn University, 1965.

Bowling, Cinnie Esterle. "The Jungian Personality Types of Pathologists and Selected Medical Technologists in the State of Florida." Ph.D. dissertation, University of Florida, 1973.

Carlyn, Marsha. "The Relationship Between the Myers-Briggs Personality Characteristics and Teaching Preferences of Prospective Teachers." Ph.D. dissertation, Michigan State University, 1976.

Collins, James A. "Individual Personality and Organizational Climate." Ph.D. dissertation, Claremont Graduate School, 1965.

Conary, F. M. "An Investigation of the Variability of Behavioral Responses of Jungian Psychological Types to Select Educational Variables." Ph.D. dissertation, Auburn University, 1965.

Helton, W. B. "A Comparative Analysis of Selected Characteristics of Intellectually Superior Male Students Who Persist and Those Who Do Not Persist in an Advanced Placement Program." Ph.D. dissertation, North Texas State University, 1964.

Hoffman, Jeffrey L. "Personality Relationships Between Supervising Teachers and Student Teachers as Determined by the Myers-Briggs Type Indicator." Ph.D. dissertation, University of Florida, 1974.

May, C. "An Investigation of the Relationship Between Selected Personality Characteristics of Eighth Grade Students and Their Achievement in Mathematics." Ph.D. dissertation, University of Florida, 1971.

Norris, R. P. "A Comparitive Analysis of Selected Characteristics of Intellectually Superior Female Students Who Persisted and Those Who Did Not Persist in an Advanced Placement Program." Ph.D. dissertation, North Texas State University, 1964.

Walden, Ronald L. "Flexible Scheduling: Factors Related to Change in Academic Achievement." Ph.D. dissertation, Northwestern University, 1966.

Reports

Fritz, B. R., and Schmidt, C. D. "The Effects of Teacher-Student Similarity in an Educational Skills Course." United States Office of Education, Cooperative Research Project No. S-217. Columbus, Ohio: Ohio State University, 1965.

McCaulley, Mary H. "The Myers-Briggs Type Indicator and the Teaching Learning Process." Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, Illinois, April 4, 1974.

_____, et al. "Myers-Briggs Indicator Type Applications." Final report of Committee #13, University of Florida Counselling Study. Gainsville, Florida: University of Florida Typology Laboratory, 1973.

_____. "Myers-Briggs Type Indicator." Report. Gainsville, Florida: University of Florida Typology Laboratory, 1973.

McCaulley, Mary H., and Natter, Frank L. "Psychological Type Differences in Education." In The Governor's Task Force on Disruptive Youth. Edited by F. L. Natter and S. A. Rollin. Tallahassee, Florida: Office of the Governor, 1974.

_____. "Type Development: An Educational Objective." In The Governor's Task Force on Disruptive Youth. Edited by F. L. Natter and S. A. Rollin. Tallahassee, Florida: Office of the Governor, 1974.

Myers, Isabel Briggs. The Myers-Briggs Type Indicator, Manual. Princeton, N.J.: Educational Testing Service, 1963.

_____. "Taking Type Into Account in Education." In The Governor's Task Force on Disruptive Youth. Edited by F. L. Natter and S. A. Rollin. Tallahassee, Florida: Office of the Governor, 1974.

Soar, R. "Florida Climate and Control (FLACCS), Manual." Gainsville: Institute for Development of Human Resources, University of Florida, 1971. (Mimeographed.)