THE RELATIONSHIP BETWEEN ACTIVITY DELAY AND
FRESHMAN ACADEMIC ACHIEVEMENT

by

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of the requirements for the degree

of

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Richard R. Carlson
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ABSTRACT

The Relationship Between Activity Delay and Freshman Academic Achievement

by

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The purpose of this study was to determine if a relationship existed between arrival time in coming to take the ACT test and academic achievement.

The individuals who met the general criteria and were used in this study numbered 129; 46 of these met the additional criteria of arriving early and they composed the early group.

The early and late groups were compared on ACT composite score and cumulative grade point average.

Significant differences between the means could not be found, by analysis of variance, between the early and late groups using either ACT composite score or cumulative grade point average.

(39 pages)
CHAPTER I

INTRODUCTION

Introduction and need for the study

Prediction of college academic achievement is a continuous and ever increasing problem. As Universities and Colleges swell with additional enrollment more proficient and accurate methods are necessary to screen out and identify the prospective problem student. Administrators and counselors must search for clues that will more readily help evaluate academic achievement and potential academic failures. It is possible that through early detection some problem students may be counseled and directed in ways essential to salvaging their college careers. Before this can be achieved we must discover the clues or traits that may possibly predict these problems.

Educational researchers and psychologists have separated academic achievement into a number of areas. Currently, interest is directed toward the non-intellectual predictors and circumstances that foster and develop academic achievement. No longer are grades and test scores given the complete focus of attention.

There is a growing movement to assess the total person: his feelings, personality, family background and relationship, self-concept,
social standing, study habits, skills, maturity, needs, desires and emotions. This must be accomplished if we are to diminish the margin of error in predicting college academic achievement.

Statement of the problem

The purpose of this study is to determine whether or not students who arrive early (up to 15 minutes before test time) for the American College Testing program with completed forms will perform better on the test and during their Freshman year than those who arrive just prior to testing with incom­pleted forms. This research will be an attempt to reveal a possible non-intellectual predictor of academic achievement.

This study will attempt to answer the following questions:

Will students who arrive early to take the ACT receive better grades during their first year than those who arrive just prior to testing or late? Will a significant difference be found between the scores on the ACT of students who come early with completed forms and those who come just prior to testing or late with incom­pleted forms?

The students used in this study are high school graduates who took the ACT test at Utah State University on Saturday February 14, 1965, and who attended U.S.U. the following fall quarter completing a minimum of 10 units of college credit.
Definition and abbreviation of terms

So that one may more fully understand this study and the terms used therein, the following terms have been defined:

ACT: This is the abbreviation of the American College Test. This scholastic achievement test is designed to predict college ability. It is used in screening for admissions, scholarship, guidance and placement. Achievement of the student is measured in four areas, namely:

1) English Usage Test: This part measures the students' ability to use the basic elements of correct and effective writing; punctuation, capitalization, phraseology, diction and organization of ideas.

2) Mathematics Usage Test: This test measures the students' educational development in the use of mathematical principles for solving quantitative problems and in the interpretation of graphs and charts.

3) Social Studies Reading Test: This part measures the students' ability to read materials from the social studies area with critical understanding and to do types
of reasoning and problem solving characteristic of these fields.

(4) Natural Sciences Reading Tests: This test measures the critical reasoning and problem-solving skills required in the natural sciences. Emphasis is placed on the formulation and testing of hypotheses and evaluation of scientific reports.

Composite: This is an average of the four tests and is interpreted as an over-all index of high school achievement or level of preparation for college work.

Activity Delay: A term coined by Brown, Abeles, and Iscoe which describes the behavior of late responding subjects. It includes a lack of decisiveness of action, tendency to procrastinate, and an unwillingness to conform to the academic routine and regulations. This term is used in the title of this study.

Early Group: This is the group of individuals who arrived with completed forms prior to the cut-off time, this time being 15 minutes before the hour the test was to start.

Late Group: This group was comprised of the individuals who either arrived early with incomplete forms or arrived after the designated cut-off time.
GPA: This is the abbreviation for Grade-point average. It is obtained by finding the sum of the grade-points and dividing by the number of credits earned. Utah State University uses the following: $A = 4$, $B = 3$, $C = 2$, $D = 1$, $F = 0$.

Cumulative GPA: This is the individual GPA of all college classes taken. It can change from quarter to quarter if the individuals quarterly GPA changes.
CHAPTER II

REVIEW OF RELATED LITERATURE

This review of literature deals primarily with studies concerning non-intellectual factors of intelligence. Emphasis is in the areas of personality, study skills, attitudes, and motivation. A three-directional approach will be taken. The areas of concentration will include influences of early training with respect to achievement, personality traits that influence academic success, and a summary of non-intellectual factors that affect academic achievement.

One of the first problems that obviously arises is the need for identifying adequate criteria which indicated academic achievement. During the past forty years a shift has been in progress, a shift from placing stress on intellectual predictors extensively to the present day concern with non-intellectual factors.

Childhood achievement patterns and parental attitudes

Academic achievement today, however, is mainly evaluated by academic grades and scores on achievement tests. Excelling in these areas does not come spontaneously; it is something that is cultivated over a long period of time. The developmental process of achievement is an area worthy of much research. Currently it is advantageous to
note that many such studies are now cited in research literature. Barrett (1957) in a study dealing with high IQ children indicated that achievers appeared to have a more rational approach to solving problems, and were persistent in finding solutions. A study by Norman and others (1962) indicated the achievers were more consistent in their performance than non-achievers. These traits seem to be indicative of high achievers for Nichols (1966) in dealing with older students, also found persistence and consistent conscientious performance to be characteristic of high grade students.

In further elaborating upon the developmental predictors of achievement, Drews (1957) indicated that mothers of high achievers were more authoritarian and restrictive in the treatment of their children than the mothers of low-achievers. The parents of the high achievers also seemed to have more punitive attitudes about child-rearing. Payne (1961) also observed similar parental characteristics of authority in his high achieving group.

Middle class values come into play in a study by Rosen and D’andrade (1959); here middle class parents stress self-reliance, autonomy, and achievement in problem situations more than low-class parents. Middle class parents also expect their demands to be met and are definite in reinforcing achievement.

Gowan (1957) found that tension in task demands during childhood helped develop stronger self-control adjustments in adulthood. Cuff
(1957) pointed out some additional traits indicative of high achievers. His research evaluated study habits among students grades 4-12. The results revealed that bright young and superior pupils in every grade have more helpful study habits. It was also pointed out that methods of study crystallized in the elementary grades usually do not improve appreciably thereafter. Brown and Dubois (1963) emphasize study habits as being essential to achievement. The high school achievers are described as being hard working and energetic, able to get to work, having effective study methods, tending toward conformity and setting high aspirations for themselves. Efficient study habits may be useful predictors when, by virtue of limitations of time and work load, efficiency is necessary. Other investigators also reveal how important the desire to achieve is influenced by parental actions. Proper attitude and pattern of development toward academic achievement, study, and self-control are developed at an early age. This pattern usually follows through in later schooling and life.

Non-intellectual factors of personality

A great number of researchers have administered personality measures in hopes of discovering personality traits that influence academic achievement. Centi (1961) stated it is now an accepted belief that the academic performance of the student is another aspect of his total behavior, and, as such is determined and influenced by
the dynamic process of personality. His study was to determine the differences between the highest and lowest ranking students in a large university with respect to their personality and adjustment as indicated by scores on the MMPI and the College Inventory of Academic Adjustment. The results indicated a definite relation between level of achievement and the selected adjustment factors. It supplies further evidence that personality factors and also emotional adjustment are related to level of achievement in college students.

A similar study by Barger and Hall (1964) using the MMPI revealed traits of poor academic achievement were related to non-conformity, rebelliousness and high activity level. Traits definitely were not conducive to high academic achievement.

Other investigators using the MMPI are easily found from the 1950's on. Some noteworthy studies are Dowd (1952), Hoyt (1954), Berger and Sutker (1956), Yeomans and Lundin (1957), Middleton and Gutherie (1959) and Hackett (1960). The underlying theme of these studies indicated a high correlation between good personality adjustment and high academic achievement. One study, Seegars (1962), however, indicated the reverse. Seegars did not find a significant correlation between achievement and the MMPI scores.

Flaherty and Reutzel (1965) revealed information where Gough disagreed with the test methods used. Gough postulated that
previous researchers were using measures devised for use in other prediction problems, often of a clinical or psychiatric nature. He felt they would not measure variables pertinent to academic achievement. The test devised by Gough was taken from the MMPI. He selected a scale of thirty-four items in such a manner as to minimize overt connections with intelligence. His scale revealed the superior achievers as more conventional and conforming, more apprehensive and more self-confident. In 1957 Gough incorporated his findings into a concrete test measure, the CPI (California Psychological Inventory).

Since the creation of the CPI much research has been accomplished in measuring non-intellectual predictors. One of the more recent studies using the CPI was conducted by Nichols (1966). His purpose was to find non-intellectual predictors that will make effective discriminations between students who have already been highly selected on test scores. The results indicated the high grade group are hard workers with well established work habits. The general impression indicated this student to be compulsive and conforming. They are also characterized as being conscientious, dependable, efficient, methodical, resourceful and self-confident. The overall best predictor of college grades was rank in high school class followed by the non-intellectual scales. A study by Flaherty and Reutzel (1965) using the CPI found the following traits to be significantly
higher for the high achievers: dominance, capacity for status, sociability, social presence, self acceptance, responsibility, tolerance, achievement by conformity, achievement by independence and intellectual efficiency.

Holland (1958), another pioneer in developing good test measures, discovered in his study that conformity, responsibility, verbal activities and intellectuality were all significant at the .01 level or beyond. In a later study Holland (1960), using Cattell's 16 Personality Factor Questionnaire (16PF), found male achievers to be dependent, serious, persistent, responsible, submissive, quiet, self sufficient and self-controlled. The female achiever was characterized as being persistent, responsible, submissive and conservative. The over-all result suggests that non-intellectual variables such as super-ego, persistence and deferred gratification are useful also in predicting and in understanding the nature of the academic achiever.

Fishman (1962) feels that personality tests and other non-cognitive measures could conceivably contribute more than they have if they were actually measuring something sufficiently dissimilar to that found in the usual predictors.
Non-intellectual factors of motivation

The last main area of emphasis that is relevant to the functioning of entering college students with respect to arrival time is that of motivation.

One of the first mainly recognized non-intellectual factor related to achievement is motivation. Harris (1940) after an extensive twenty year review covering 475 studies dealing with factors affecting college grades felt motivation was one of the main underlying influences in predicting achievement. He feels the essential factors in student achievement are, in order of importance; (1) Ability (intelligence or scholastic aptitude), (2) Effort (or drive or degree of motivation), and (3) Circumstances (personal, social, economic and academic).

Brown and others (1954) designed a study to measure motivational differences between high and low scholarship college students. It was these investigators who coined the term "activity delay" which was used in the title of this study. Activity delay is defined as a lack of decisiveness of action, a tendency to procrastinate and an unwillingness to conform to the academic routine and regulations. These authors compared 143 second semester freshmen at the University of Texas. The subjects were selected upon their scores on the ACT entrance examination. Although these scores were
similar their academic performance grade-wise was at opposite extremes. Ninety-seven of the students were on the Dean's Honor List for outstanding performance and forty-six were on academic probation. One portion of this study required these students to meet for an hour at an appointed time on any of three days. Virtually all the Dean's Honor List students attended on one of the appointed days with the remaining few responding after one contact. In comparison only half of the probationary students reported during the assigned times. The remainder of these students required additional contacts by mail plus, in some cases, as many as three phone calls and three different meeting times. This study definitely indicates that students who appear promptly after receiving the first letter had significantly a higher grade-point average than those who required additional letters and phone calls. As indicated intelligence is not a reliable factor for identifying high and low scholarship.

It was suggested that "activity delay" goes beyond the classroom. Perhaps it is more important in determining academic success than study habits, tutorial help, or intelligence. The authors suggest further research in this area could be of great value.

Many studies have attempted comparisons between men and women with respect to motivation and conformity. Some are Woods (1938), Summerskill and Darling (1955), Weitz and Colver (1959),
Altus (1961), and Erb (1961). These studies indicate women are more conforming, work more to their capacity, are lower in academic failures and inferior scholarship, have poorer health and participate less in campus affairs than men.

Studies by Woods and Chase (1938), Tiebout (1943), Buschman (1952) and the before mentioned study by Brown and others (1954) all agree that lack of ability does not appear to be the cause of poor performance scholastically and conversely students who possess high abilities do not always perform academically as expected. Stern, Stein and Bloom (1956) feel that in many cases students for whom test results have indicated a high probability of achievement nevertheless failed. They feel more importance should be placed on motivation adjustment, social activities and interests.

Travers (1949) felt counselors tended to underestimate the importance of non-intellectual factors and place excessive reliance upon standard measures of scholastic aptitude.

A consideration of the components of motivation is also worthy to mention. An experimental study of persistence and its relationship to grades was carried out by Howells (1933). He indicated a good correlation existed. Thornton (1941) suggested combining 'aspiration' with grades and measures of ability to best predict academic success. This study received emphasis and support when a similar study was carried out by Grace (1957). As far as university
students were concerned Fullmer (1956) felt the key was "perserverence."

His study dealt with changes in academic majors. This study revealed
students who change majors "perservered" longer than those who did not. Probationary students according to Fullmer also did better academically after they changed majors; he measured this by their grade point.

The concluding area necessary to understand non-intellectual factors of motivation is anxiety and self-concept.

It is felt the control a student has over himself in respect to successfully completing or failing a course has great worth. Gough (1953), Holland (1961) both agree that the high achiever has more self-control. Horral (1957) concludes that the high achiever has less underlying anxiety, more inner tension and more control outwardly than the less academically talented student.

One of the most interesting studies in this area was conducted by Ausubel and others (1953). They defined anxiety as they felt it related to learning. It is an acquired reaction or sensitivity in individuals suffering from distorted self-esteem, to over react with fear to any new situation which may present a threat to their self-esteem. They indicated that anxious individuals revealed more anxiety than non-anxious individuals until the novelty of the new learning situation wore off. As the situation became more familiar
the scores of the anxious and non-anxious groups became more consistent
and equal. Again Gough (1953), Nichols (1966), Holland (1960), Williams
and others (1960) all agree that a good self-concept and self-confidence
are characteristic of high achievers. However, as to research about
high achievers being more or less anxious than low achievers, a
definite conclusion has not been reached. There is research support­
ing both views.

In reviewing the literature for this study only one study is
closely aligned to this study. The study is one by Brown (1964). It
deals specifically with arrival time and tests. Brown studied the
characteristics of students who were late in meeting the universities
admission, testing, and registration requirements. The findings
supported the hypotheses that students who are late in registering
and who procrastinate taking the admissions and testing requirements
do less well academically.

In recapitulating the previous review the following non-
intellectual characteristics are apparent in individuals who obtain
high academic achievement: They are energetic, resourceful, self-
controlled individuals with an efficient, consistent, conscientious and
rational approach to problem solving, who have good personality
adjustment, self-concept, self-reliance, confidence, autonomy
and who are conforming and dependable. They are compulsive,
methodical, submissive, with a good super-ego and with less under­lying anxiety and who defer gratification.

The following underlying theme is also relevant to mention. Training and attitudes toward self, academic pursuits, motivation and study habits can be influenced and directed by parents early in childhood. These patterns have a great tendency to continue through­out later life.
CHAPTER III

PROCEDURES

Selection of subjects and group composition

The individuals used in this study were taken from the total number of students who took the ACT test on Saturday February 14, 1965 at Utah State University (USU).

As the applicants arrived they were divided into two groups. One group was composed of students who arrived early, at least 15 minutes before testing time, with completed forms. This group was assigned to another location to take the ACT. The students who arrived early but had not completed the necessary forms, or who arrived after the selected cut-off time were assigned to another group. The forms referred to contained personal and background information on the individual and had to be completed before the ACT administration.

Of the students who took the test, only those who attended USU during the academic year beginning fall quarter 1965 and who carried ten or more credit hours were included in the sample. Of the 254 students who took the ACT on February 14, only 129 registered fall quarter and completed the minimum number of credit hours.

Of the early arriving group, only 46 attended USU the following year and carried ten or more credit hours. In this group, Group One,
there were 24 males and 22 females. There were 154 students in the late arriving group and only 83 of these attended USU the following year and carried ten or more credit hours. In this group, Group Two, there were 43 males and 40 females.

The ACT composite scores were obtained from the Counseling and Testing Services while the cumulative GPA came from the office of Admissions and Records. If a student did not complete the full academic year his last quarters cumulative GPA was used.

Questions

Information from the above sources was gathered to answer the following questions:

(1) Do students who arrive early to take the ACT test receive better grades during their freshman year than those arriving just prior to testing or late?

(2) Are there significant differences between scores on the ACT of students who come early, with completed forms, and those who come just prior to testing or late with incompleted forms?

Statistical analysis

Using an analysis of variance the composite ACT scores for the early and late arriving groups were compared.

The early and late groups were then separated into high, middle, and low categories based on their composite ACT score.
A standard score of 22 or above was classified as high, 19 or 21 as middle, and 18 and below as low. These categories were arbitrarily selected to classify the subjects in groups approximately equal in size. Using the Utah State University norms 35 percent of the entering freshmen at USU in 1965 scored at or above a standard score of 22, 32 percent scored between 19 and 21 and 33 percent scored at 18 or below.

A two-way analysis of variance was conducted with early and late groups on one dimension and high, middle, and low scoring subjects on the ACT on the other dimension.
CHAPTER IV

DISCUSSION OF DATA

This chapter will be concerned with comparisons of the early and late groups on ACT composite score and cumulative GPA.

Statistical comparisons

The means and standard deviations of the composite ACT scores for the early and late groups are found in Table 1. Inspection of this table indicates that no significant differences were found between the early group with completed forms, and the late group which was comprised of individuals who either arrived early with incomplete forms or arrived after the designated cut-off time.

Table 1. Means and standard deviations of the early and late groups on ACT composite scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>t-test</th>
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<tbody>
<tr>
<td>Early Group</td>
<td>21.0</td>
<td>5.0</td>
<td>0.33</td>
</tr>
<tr>
<td>Late Group</td>
<td>20.8</td>
<td>4.0</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant*
In Table 2, are the means and standard deviations of the early and late groups who were separated into high, middle, and low categories based upon their ACT composite score. Significant differences were not found between the means of the early high and late high; early middle and late middle; and early low and late low groups.

Table 2. Means and standard deviations of early and late sub-categories on cumulative GPA

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early high</td>
<td>3.01</td>
<td>.78</td>
</tr>
<tr>
<td>Early middle</td>
<td>2.17</td>
<td>.64</td>
</tr>
<tr>
<td>Early low</td>
<td>1.94</td>
<td>.81</td>
</tr>
<tr>
<td>Late high</td>
<td>2.84</td>
<td>.81</td>
</tr>
<tr>
<td>Late middle</td>
<td>2.37</td>
<td>.50</td>
</tr>
<tr>
<td>Late low</td>
<td>2.21</td>
<td>.54</td>
</tr>
</tbody>
</table>

To determine if a difference exists between early and late groups on cumulative GPA an analysis of variance was performed. The results are presented in Table 3.

The cumulative grade point averages of the early and late groups were so close that the F ratio between these groups was far below the level of significance. The F ratio on interaction was also non-significant.

This research indicates that the early and late groups function so much alike in the academic setting that arrival time, completed or incomplete forms, and cumulative GPA, have no influence or predictive value in identifying problem students.
Table 3. Analysis of variance on cumulative GPA of early and late groups

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early vs. late</td>
<td>1</td>
<td>0.70</td>
<td>0.70</td>
<td>1.39</td>
</tr>
<tr>
<td>High, middle, low</td>
<td>2</td>
<td>18.34</td>
<td>9.17</td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>1.37</td>
<td>0.68</td>
<td>1.36</td>
</tr>
<tr>
<td>Error</td>
<td>124</td>
<td>62.16</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>129</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*F*, not significant

Summary and discussion

The results obtained from this study do not agree with the findings of a similar study by Brown (1964). In Brown's study the investigator was able to demonstrate differences between academic performance of students registering and taking entrance examinations on time in comparison to students late in complying with these regulations. Brown was concerned with the subjects' attendance or non-attendance for the ACT. This research deals with the individuals early or late arrival time to take the ACT.

The following fact should be taken into consideration:

USU is the ACT test center for a large area of northern Utah and Southern Idaho. Prospective college students may travel as far as 75 miles to take the test.

Inspection of the early group indicated that over half of these students live out of the Logan area and traveled some distance to take the
ACT. Logically these students left early in order to arrive in time for the test. Judging their arrival time would be more difficult than it would be for those who lived in and around Logan.

This group composition could have influenced the results of this study since students who traveled further may not have been particularly motivated or conscientious but traveled with other students who did have these characteristics and therefore arrived early.

Consider also that approximately 50 percent of the individuals who took the ACT on February 14, 1965 were not included in the study because they did not register or attend USU the following year. Excluding these individuals from the sample could have biased the results.

This limitation may have been eliminated if a comparison had been made on ACT scores for students who attended USU and students who did not. Since the scores for those students who did not attend USU were difficult to obtain, this comparison was considered out of the scope of this study.

The results of the current study imply that arrival time by itself is not a selective enough measure.

Since this study did not present any significant evidence in support of its hypotheses, and since it did not agree with other studies, additional explorations appear to be in order. Research should be conducted to determine useful non-intellectual predictors of behavior.
Also necessary are studies duplicating previous research to discover if they are really valid and of worth in predicting behavior.
CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

Need for the study. A situation common to all universities is the problem student. Each year hundreds of students over our nation fail and drop out.

Under investigation are ways to identify the potential problem student. Non-intellectual factors are currently emphasized.

It is felt by some that non-conformity and tardy behavior is related to academic failure, yet only a minimal amount of research in this field is recorded. This study seems warranted to establish more empirical evidence in this area.

Statement of the problem. This study was carried out to discover if a relationship could be found between arrival time for ACT and academic achievement. The question under investigation was: will students who arrive early for ACT testing receive better grades during their freshman year than those who come late or just prior to the testing?

Limitations of the study. In evaluating this research a number of limitations should be mentioned. One of the biggest limitations was the number of subjects
used in the study. The groups were composed of individuals who came from one ACT testing day, thus limiting the size of the sample. A more extensive investigation involving larger groups and other ACT testing days might have been profitable. This applies also to the high, middle and low sub-groups which lacked strength in numbers.

Due to the lack of time questionnaires were not given to evaluate the students' reasons for coming early or late, or to obtain information on the individual's family background, home life, motivation and achievement goals. Such information could have been valuable in obtaining the complete picture of each individual.

Another area of interest that was not explored deals with individuals who took the ACT at USU but attended other colleges. This limitation has been mentioned in the previous chapter. Information on these individuals and their grade point average may have been useful.

This study might be one of the first steps in understanding other non-intellectual factors of intelligence. To actually explore why the relationship is happening is beyond the scope of this study. It is not the investigator's purpose to explain the dynamics or theoretical basis of this study but only to provide empirical evidence that a relationship does or does not exist. It is hoped someone later may follow through with additional research that will explain the underlying mechanics.

**Method.** Factors related to poor academic achievement have brought forth a vast amount of research in non-intellectual areas.
This review deals in three of these areas: Childhood achievement patterns and parental attitudes, Non-intellectual factors of personality and Non-intellectual factors of motivation.

The groups for this study were selected from 254 students taking the ACT test on February 14, 1965. Arrival time was the selecting criteria for group division. Only students that attended USU starting fall quarter 1965 and who carried ten or more credit hours were used. Group one (early arrivers) contained 46 students. In group two (later arrivers) there were 83 students.

The early and late groups were compared on ACT composite scores and cumulative GPA.

**Summary and implications.** The results of the statistical analysis did not reveal any significant differences between the early and late groups in terms of their composite ACT scores. Based on these findings the null hypothesis was not rejected.

The main question, that students coming early for the ACT would do better academically during their freshman year than late arrivers, was also refuted. A statistical significant relationship could not be found.

This study does not agree with the research along similar lines by Brown (1964) as discussed in the previous chapter. Brown deals with the subjects attendance or non-attendance to register or take the ACT. This research deals with early or late arrival time in taking the
ACT on the designated day. Since these studies do not agree further investigation should be encouraged. Research should be conducted to determine useful non-intellectual predictors of behavior. Also necessary are studies duplicating previous research to discover if they are really valid and of worth in predicting behavior.
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VITA

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