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**THE RELATIONSHIP BETWEEN LEARNER RESPONSIBILITY AND
PERFORMANCE OF STUDENTS ENROLLED IN CAREER AND TECHNICAL
EDUCATION CORE CURRICULUM COURSES**

A Research Paper

Presented to the Graduate Faculty

of the Department of Occupational and Technical Studies

at Old Dominion University

In Partial Fulfillment

of the Requirements for

The Master of Science Degree

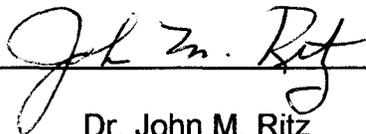
By

Linda B. Mills

May, 2004

SIGNATURE PAGE

This research paper was prepared by Linda B. Mills under the direction of Dr. John M. Ritz in OTED 636, Problems in Occupational and Technical Studies. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the degree Master of Science.

Approval by: 

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5-4-04

Date

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CHAPTER I

INTRODUCTION

The central concept of the theory of locus of control is that individuals differ in the extent to which they attribute reinforcement to their own actions or to external forces. Albert Bandura, professor of psychology at Stanford University, determined that individuals create and develop self-perceptions of capability that become instrumental to the goals they pursue and to the control they are able to exercise over their environments (Aronson, 2002, p. 13). Several studies have predicted that students who feel that performance outcomes are a consequence of their own behavior demonstrate greater initiative and academic success than students having a more external orientation (Ames et al, 1984; Chambers & Abrami, 1991). These authors indicate that academic achievement is the result of their perception of responsibility in learning. To understand a student's perception of responsibility prior to instruction enables the teacher to implement learning strategies tailored to facilitate effective learning.

However, throughout the research (Ames & Ames, 1984) there are inconsistencies with intellectual achievement measures suggesting the relationship between perception of responsibility and performance maybe more complex. For example, the strength of the association may be influenced by student gender, age and perceived value of the course material.

This research investigation, employing a modified version of the Intellectual Achievement Responsibility Scale (IARS)(Crandall, Katkovsky, & Crandall, 1965), attempts to examine the relationship between Marketing Education students' perceived responsibility for their own intellectual-academic successes and failures. To what extent are student's perceptions of responsibility related to their course performance grade? Did gender or grade level influence assumption of responsibility?

STATEMENT OF THE PROBLEM

The problem of this study was to determine the relationship between a Marketing Education student's assumption of responsibility for academic achievement and mid-term performance scores for their chosen Career and Technical Education course.

HYPOTHESES

It was predicted that students who assume relatively little responsibility for successful and unsuccessful performance outcomes would attain lower course performance scores than those that assumed greater responsibility. To guide this study, the following hypotheses were established:

H₁: Students who take responsibility for their academic outcomes will outperform those students who do not in Marketing Education courses.

H₂: Female students will take more responsibility for their academic outcomes and will outscore males in the same Marketing Education courses.

BACKGROUND AND SIGNIFICANCE

It was observed by the researcher that the concept of learner responsibility was inadequately developed in many high school marketing students, resulting in students not taking responsibility for their own learning. Evidence for this problem was gathered from teacher observations, interviews and anecdotal notes.

It has been a belief that the teacher is the locus of control in the classroom and responsible for learner achievement. If we expect students to be responsible, we must provide them with opportunity to learn and practice responsibility (Bacon, 1993). Students that spend more time working in silence at their desks, filling out workbooks, copying notes from the overhead or teacher's lectures may not be learning to take responsibility for their own learning. They are passive learners. These students need to be identified.

Teaching methods and strategies are determined by the student's needs and guided by the course material. There are a number of factors that influence a student's success; several include parental involvement, socio-economic

background and innate intellectual ability (Fried, 2001). A student's acceptance of responsibility for their learning is the most important predictor of academic success. White, Blythe and Gardner (1992) stated the difficulty is that all students do not know they can take responsibility for their learning by drawing on their own strengths and interests and not all students know how.

Teaching students to be responsible needs to be included in the total school curriculum. However, we cannot force a person to be responsible. Teaching a student to be responsible is an important life skill. Teachers can encourage students to take responsibility for learning and performance if they are aware that the student is deficient in this area (Corno, 1992).

LIMITATIONS

The limitations identified for this study were as follows:

- Only those Marketing Education students in a Virginia Beach high school, Virginia Beach, Virginia, were studied.
- This study was limited to use of the mid-term course performance grade for each of the students studied.
- The high school, a suburban school, may or may not be proportionate to demographic student representation.

- The survey was limited to core Marketing Education courses, including Marketing/Marketing Co-op, Advanced Marketing/Advanced Marketing Co-op, Fashion Marketing/Fashion Marketing Co-op and Advanced Fashion Marketing/Advanced Fashion Marketing Co-op.
- Fashion Marketing/Fashion Marketing Co-op and Advanced Fashion Marketing/Advanced Fashion Marketing Co-op results may be inconclusive for gender analysis due to limited enrollment of male students.
- The school district required that the students be volunteers.
- The school district required that no classroom instructional time be spent on the study. The students were required to complete the questionnaire at home.

ASSUMPTIONS

The following assumptions were made in this study:

- The students who participated in this study were representative of the participants in Marketing Education classes throughout Virginia.
- The Intellectual Achievement Responsibility Scale, a modified survey instrument, was a valid predictor of responsible attributes in the students sampled.

- The students' mid-term course performance grades accurately represented the numerical equivalent of their efforts and were not subjectively given by the teacher.

PROCEDURES

This experimental study compared the scores of students taking Marketing Education common core courses with traits identified on the Intellectual Achievement Responsibility Scale instrument (Dr. Virginia C. Crandall Adaptation, May 1974) with their midterm performance grade for the course. This test was adapted from the Intellectual Achievement Responsibility Scale (IARS) by Crandall, Katkovsky, and Crandall (1965). The IARS attempts to assess exclusively the learner's beliefs that they, rather than external forces, are responsible for their intellectual academic successes and failures. Each of the 34 items describes a positive or negative achievement experience followed by two response alternatives: one stating that the learner caused the event to happen and one that the event occurred because of an external behavioral action of someone else in the learner's environment. A score is obtained by adding all positive events for which he/she takes credit and all negative events for which he/she takes blame. The total of these two sub-scores gives the student's "I" score (IARS).

Once all data were collected, the “I” scores and mid-term grades were compared on a per student basis to determine if there was a correlation between a high “I” score and a high mid-term course grade. Additionally, the data were examined for each of the four classes by gender, to determine if there was a significant difference between student responsibility and academic performance across the subsets of the population in order to test the hypothesis that female students will out perform males.

DEFINITION OF TERMS

With regards to this study, the following terms are defined for clarification purposes:

Advanced Fashion Marketing/Advanced Fashion Marketing Co-op - As described in the Virginia Beach Public Schools Curriculum and Instruction, The High School Program (Grades 9-12) Technical and Career Education (2003-2004), “Emphasis in the classroom is placed on the planning and supervisory aspects of fashion occupations. Students take a more concentrated look at fashion terminology and trends, merchandising management, and buying techniques. Advanced Fashion Marketing Co-op students combine classroom instruction with a minimum of 540 hours of continuous, supervised, on-the-job

training in a fashion occupation or business, as well as membership in the DECA Club Chapter.” (p. 6.)

Advanced Marketing/Advanced Marketing Co-op - As described in the Virginia Beach Public Schools Curriculum and Instruction, The High School Program (Grades 9-12) Technical and Career Education (2003-2004), “This course enables students to develop advanced competencies needed for full-time employment in marketing and distribution. Students develop basic competencies in the areas of retail merchandising, market research, management, and business ownership. Advanced Marketing Co-op students combine classroom instruction with a minimum of 540 hours of continuous, supervised, on-the-job training in a marketing or distribution business, as well as membership in the DECA Club Chapter.” (p. 6.)

Common core courses - Classes that are traditionally offer in Career and Technical Education programs in Marketing Education throughout Virginia. These courses include Principles of Marketing, Advanced Marketing, Advanced Marketing Co-op, Principles of Fashion Marketing and Advanced Fashion Marketing Co-op.

Fashion Marketing/Fashion Marketing Co-op - As described in the Virginia Beach Public Schools Curriculum and Instruction, The High School Program (Grades 9-12) Technical and Career Education (2003-2004), “This course is for students with career interests in apparel and accessories marketing. The focus of instruction is on the marketing of men’s and women’s apparel and accessories.

Fashion Marketing Co-op students combine classroom instruction with a minimum of 540 hours of continuous, supervised, on-the-job training in fashion occupations, as well as membership in the DECA Club Chapter.” (p. 6.)

IARS - Intellectual Achievement Responsibility Scale, see definition referenced below.

Intellectual Achievement Responsibility Scale - This instrument was developed by Crandall, Katkovsky, and Crandall and explores learners' sense of responsibility to achievement related outcomes. Dr. Virginia C. Crandall's May 1974 adaptation was used in this study.

I Total – This is the sum of both the positive and negative internal responses for each item on the 34 question Intellectual Achievement Responsibility Questionnaire.

Locus of Control - J. B. Rotter (1954, 1966) defined the construct as:

“When a reinforcement is perceived by the subject as following some action of his/her own but not being entirely contingent upon her/his actions. It is typically perceived as a result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding her/him. When an individual interprets the event in this way, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or her own relatively permanent characteristics, we have termed this a belief in internal control.”

Marketing/Marketing Co-op - As described in the Virginia Beach Public Schools Curriculum and Instruction, The High School Program (Grades 9-12) Technical and Career Education (2003-2004), "Emphasis is placed on retail sales promotion, store operations, human relations, and the free enterprise system." Marketing Co-op students combine classroom instruction with a minimum of 540 hours of continuous, supervised, on-the-job training in a marketing or distribution business, as well as membership in the DECA Club Chapter." (p. 6.)

SUMMARY AND OVERVIEW OF CHAPTERS

This study sought to determine if there is a correlation between IARS scores of students taking Marketing Education common core courses and mid-term course performance grades. Chapter I of the study introduced the reader to the concept of locus of control and its relevance in a school setting as a predictor of student responsibility for academic achievement. Specific terms and abbreviations as they pertain to this study were also defined for clarity.

Chapter II will provide a review of the literature concerning the impact of student assumption of responsibility on the learning outcome and the research supporting this assumption. Chapter III will address the methods and procedures utilized to conduct this study and Chapter IV will present the findings. Chapter V

ill provide a summary and conclusion of the research and recommend effective strategies for developing learner responsibility.

CHAPTER II

REVIEW OF LITERATURE

The goal of the study was to examine the relationship between a learner's assumption of responsibility for intellectual-academic successes and failures and mid-term course performance scores. Prior to collecting specific data from the sample population and analyzing the results, a review of performance factors relating to student achievement outcomes was investigated.

This section of the study introduces research regarding the influences on academic achievement of self-motivating behavior, locus of control, self-regulated and learner responsibility and their value in enhancing student performance. Chapter II concludes with a summary of the role of student responsibility in theory, research and practice.

Taking Responsibility for Learning and Performance

Are students who do well in school better learners than those who do poorly? Not necessarily. Apple polishing and getting help from peers allows some students to circumvent learning difficulties and do well. Other students just seem to get to work when they need to and are rewarded accordingly. They take

responsibility for their own learning and performance. Research indicates they use appropriate tools available to them in their learning environment.

A study by Hansen (1989) illustrates this point. Over the course of a longitudinal study using videotapes, Hansen observed that “confusing” and “boring” assignments elicited different responses from different students. Some experienced mental withdrawal and evaded the work, resulting in poor performance. Others were able to draw on coping skills to focus and concentrate. Appropriate tools included asking direct clarifying questions or simply monitoring what others were doing. Directly or indirectly these students were attempting to make sense of the assignment so that they could successfully complete the work expected of them. Realization that the work is not so hard, coupled with a student’s sense that she or he simplified it, is a positive and powerful way to gain satisfaction and increase performance.

This study exemplifies a growing body of research on the dynamics of student involvement in and responsibility for learning as opposed to teacher, parent or demographic factors that directly impact school achievement. Through careful study of on-and-off camera classroom interaction, the work suggests that even young students can be taught to take responsibility by actively promoting and managing the consequences for their own learning and performance in school.

Self-regulated Learning

In research definitions, self-regulated learning encompasses goal setting, which is motivational, and goal protecting, which is volitional. Most theorists see self-regulated learning as encompassing these two related processes (Zimmerman, 1990). Self-regulating learners adopt appropriate goals and attitudes and take responsibility for completing and evaluating their work. These students become conscious of their learning environments and make those environments work for them.

“For self-regulators there is a moment when it becomes apparent that (1) here is a task I have to work on now; (2) there are several things I would rather do; (3) a certain amount of effort is required for me to do this; and (4) if I try I can probably get this done (Kuhl, 1985, p. 96).” They assume responsibility for school learning with less instructional mediation or engineering by the teacher. These students are exhibiting a sense of locus of control.

Locus of Control

Research has demonstrated that student’s perceptions about amount of control they have over academic successes and failures contribute significantly to school performance (Skinner, Wellborn & Connell, 1990). Students who believe they can produce responses that lead to desired outcomes have been

found to perform better academically than children who do not (Bandura, 1964). Bandura asserted that all learners are responsive to some degree during instruction. However, students who display initiative, intrinsic motivation and personal responsibility achieve particular academic success.

The original construct of locus of control derived out of social learning theory (Rotter, 1954, p.11). Rotter defined the construct as:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his actions, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control.

The construct of Locus of Control, as it applies to learners, has evolved over time. Some people feel personal responsibility for the things that happen to them. These people are labeled "internals". Students with an internally oriented locus of control, i.e., those who attribute their achievement to their own ability or effort, rather than to factors beyond their personal control, have been found more likely to be successful in school than students who attribute their achievement to

factors beyond their personal control, i.e., those who have an externally oriented locus of control, or “externals” (Skinner, Wellborn & Connell, 1990). Students who think they are personally responsible for their successes have been found to spend more time on homework, try longer to solve complex problems, and get higher grades than students who think events are beyond their personal control (Crandall, Katkovsky & Crandall, 1965).

Locus of control has been studied in various educational settings. Students with strong beliefs in internal locus of control have been found more motivated to achieve success by both cooperative and competitive learning strategies, while students with stronger beliefs in control by chance or fate have been found more motivated to avoid success (Lester, 1992). Internal locus of control has been positively correlated with personal responsibility for learning and motivation for academic achievement. It is such an important factor that school achievement has been found to correlate more highly with locus of control than with measures of intelligence (Nowicki & Strickland, 1973).

Gender Differences and Locus of Control

Crandall et al. (1965) also found sex differences with regard to locus of control. Girls were found to significantly increase their internality for negative events (e.g., losing a game, not being passed to the next grade, not doing as well as usual in a subject at school) from the third to fifth grades, and over the broad

span from sixth to twelfth grades. The first change took place chiefly between the third and fourth grades. By sixth grade, girls had assumed a level of responsibility for negative events, which was slightly higher than boys who finally achieved this trait while in the twelfth grade.

It was found that twelve-year-old boys attributed academic success to ability more often than twelve-year-old girls, while girls attributed success more to effort than did boys. However, females used luck as an explanation of their behavior more often than males. Differences in self-esteem and sex role identification that was ingrained in a child may account for these variations.

Student Responsibility

Teachers take a lot of responsibility for students' achievements and failures by monitoring progress, prodding, and offering solutions. Greater success occurs when the students take responsibility for their success, or lack thereof. A responsible learner is one who is actively engaged in the thinking process and takes initiative for daily tasks such as completing assignments, projects and activities. Responsibility is a complex concept involving accountability and control.

Wang et al. (1998) investigated the development of self-responsibility for school learning in second grade students. The students were randomly assigned to either a Self-schedule System or a Block-schedule System class. The Self-

schedule System allowed the students to make their own decisions on when they would do what, with some input from the teacher. A specific time block was designated for working on tasks in each subject area in the Block-schedule System. Measures of self-responsibility were made for each student. Wang et al. (1998) found significant differences between the two groups. The Self-schedule System was the most effective and productive. It developed students' abilities to take increasing responsibility for learning and developed the students' perceptions of self-responsibility for their learning. Additionally, it was found that the Self-schedulers completed significantly more learning tasks in less time than the Block-schedulers. Given the opportunity to be responsible for what they were learning in school increased their performance.

Another underlying cause for students not taking responsibility is the lack of intrinsic motivation. When students are given explicit instructions as to what to do on an assignment, they are more likely to succeed if allowed to pursue their own course of completion within content and time constraints. A study conducted by Bacon in 1993 found that students do not view responsibility as something that is intrinsically motivated but something that others expect from them. Students in this study did not see school as offering them either control or challenge and as a result only did what the teacher specifically asked them to do. When someone else is in control, personal growth diminishes.

Summary

In the past teachers were taught that they were responsible for students' learning. As a result, students were content with minimal effort and the teacher assumed responsibility for poor performance. Researchers have addressed the relationship between learner responsibility and academic success. According to Crandall et al. (1965), individuals have been found to differ in the degree to which they believe that they are usually able to influence the outcome of situations. Their belief impacts their response to the learning situation and determines the performance outcome.

Students who are not self-motivated and exhibit external locus of control characteristics demonstrated poor performance, minimal effort and lack of interest. Students with a strong sense of responsibility for their learning and internalized locus of control complete more learning tasks and achieve higher performance scores. There appears to be a slight gender bias in favor of girls assuming a higher level of responsibility at earlier grade levels than their fellow male students but this approaches equality by the twelfth grade.

Learner responsibility does enhance academic performance. The difficulty is that all students do not know they can take responsibility for their learning by drawing on their own strengths and interests and not all students know how. Developmental curricula and teaching strategies, directed at providing teaching environments appropriate for fostering student responsibility have been

developed as a result of the cumulative body of research done in this area and will be examined in Chapter V, Summary, Conclusions and Recommendations.

The review of literature examined the significant aspects involved in learner assumption of responsibility for academic performance. Chapter III of this study will analyze and discuss the methods and procedures used to determine if there is a relationship between learner responsibility and performance in Career and Technical Education students taking core curriculum Marketing Education courses.

CHAPTER III

METHODS AND PROCEDURES

The third chapter of this study serves to designate the methods and procedures followed to gather pertinent data for this research. The problem of this experimental study was to determine the relationship between a learner's assumption of responsibility for intellectual-academic successes and failures and their mid-term course performance score. This chapter will describe the research methods and statistical procedures used to collect and analyze the data. Included in this chapter are the population, the instrument, data gathering procedures, a statistical analysis, and summary.

POPULATION

The population surveyed for this study was 95 high school students enrolled in core curriculum Career and Technical Education courses. Four Marketing Education classes were studied, and the populations were as follows:

- (1) Marketing: Non Co-op: 29 students, 17 seniors, 12 juniors, 17 males, 12 females; Co-op: 17 students, 11 seniors, six (6) juniors, nine (9) males, eight (8) females.

- (2) Fashion Marketing: Non Co-op: 19 students, 11 juniors, eight (8) seniors; Co-op: five (5) students, five (5) juniors. All Fashion Marketing/ Fashion Marketing Co-op students are females.
- (3) Advanced Marketing: Non Co-op: two (2) students, two (2) seniors, 0 junior, one (1) male, one (1) female; Co-op: seven (7) students, seven (7) seniors, five (5) males, two (2) females.
- (4) Advanced Fashion Marketing: Non Co-op: six (6) students, all seniors and all females; Co-op: 10 students, 10 seniors and 10 females.

The sample was heterogeneous with regard to social class and race, but it reflected a suburban school district with less than 50% of the population qualifying for subsidized breakfast and lunch programs. All students, who served as subjects, had written permission from their parents to participate in the study.

INSTRUMENT USE

The instrument used to collect the data was the Intellectual Achievement Responsibility Questionnaire (IAR), by Crandall, May 1974. This is an adaptation of the IAR Questionnaire version designed by Crandall, Katkovsky and Crandall in 1967. A copy of the IAR Questionnaire is included in Appendix A.

The IAR, consisting of 34 items, is a forced-choice measure, which provides assessments of learner's beliefs that they, rather than others, are responsible for their intellectual and academic successes (1+) and failures (1-). Subscale scores assess internal-external control separately in success and failure situations (See Appendix A). Each item poses one internal and one external alternative. For example, one "success" item asks,

If a teacher passes you to the next grade, would it probably be

- a. because she likes you, or
- b. because of the work you did?

Item "b" would generate a (1+) as an indicator of success. One "failure" item asks,

When you have trouble understanding something in school, is it usually

- a. because the teacher didn't explain it clearly, or
- b. because you didn't listen carefully?

Item "b" would generate a (1+). Separate scores for internality of responsibility for successes (1+) and failures (1-) are thus obtained from the items dealing with positive and negative outcomes respectively. The 1+ and 1- scores can be summed to give a general index of the extent to which the child assumes responsibility for intellectual-academic outcomes.

The instrument used to measure the collected IAR data were the numerical course grades received by each student at mid-term in their respective core course in Marketing Education. Mid-term course grades were considered a

true measure of the knowledge and understanding of the subject matter taught in each course to date.

DATA GATHERING PROCEDURES

A list of students, identified only by a random number assigned by the teacher and unknown to the researcher, guaranteeing student anonymity, was supplied by the three teachers whose classes were participating in the study; including the Career and Technical Education Department Chair, a Fashion Marketing teacher, and a Marketing Education teacher. A "Permission for Child's Participation" form and cover letter explaining the importance of the research was supplied to the three teachers for distribution to the students in the population. The cover letter, parental permission form, and IAR Questionnaire were sent home with the "A" Block students on February 17, 2004 and "B" Block students on February 18, 2004.

Each student was given a copy of the IAR Questionnaire. The students were instructed to choose one response to each question by circling either answer "a" or "b." The students were told that they were to answer every question on their own and that there were no correct or incorrect answers. The students were instructed to answer the questions on the questionnaire at home, place the completed questionnaire in a small envelope provided, which had their pre-assigned number on the front and to seal the envelope. Again, only their

respective teacher knew the student this number represented. The signed parental permission form and the sealed envelope containing the questionnaire were then placed in the larger envelope and returned to their respective teacher. Upon receipt of this package from the student, the teacher listed on the outside of the sealed small envelope the students age, grade level, sex and mid-term grade. A copy of the cover letter and parental permission form are included in Appendix B.

STATISTICAL ANALYSIS

The data collected from the results of the questionnaire were tabulated by standard statistical methods. Upon receiving the data, the score for each student questionnaire was calculated by course, gender and grade level surveyed. The three participating teachers provided the mid-term numerical grades for each student, identified by randomly assigned number, and returned the completed questionnaires. The mean and standard deviations were computed for each course, gender and grade level. Mid-term performance grades were divided into two categories, A – B and C – F. The results were arranged by sub-groups, as well as overall, to determine the tendencies of the data. Pearson's r data analysis was performed to determine if there was a relationship between the two sets of paired numbers. The mid-term grades and questionnaire results were compared for all students by course and gender. A t-test analysis was performed

to compare the sample means of mid-term grades and "I Totals" for both gender sub-groups of students in order to test the hypothesis that female students will out perform males.

SUMMARY

Chapter III described the methods of data collection and the statistical procedures used to compare the IAR Questionnaire and mid-term course grades. This chapter identified the population that was studied and the instrument used to analyze the data. Also included were the protocol procedures and a statistical analysis of the data that were collected. The data were then compared to the hypothesis to determine if there was a significant relationship between learner assumption of responsibility for academic success and mid-term course performance scores. The findings of this statistical analysis will be discussed in Chapter IV.

CHAPTER IV

FINDINGS

The problem of this study was guided by two hypotheses: (1) Students who take responsibility for their academic outcomes will out perform those students who do not in Marketing Education courses and (2) Female students will take more responsibility for their academic outcomes and will outscore males in Marketing Education courses.

The findings shown in this chapter were taken from the results of the Intellectual Achievement Responsibility Questionnaire (IAR), by Crandall, May 1974, and the mid-term grades earned by the students in eight-core curriculum Career and Technical Education courses. The questionnaire contained questions dealing with the learner's beliefs that they, rather than external forces, were responsible for their academic successes and failures.

This chapter presents all the relevant data that were collected. It will provide a statistical analysis comparing the two sets of paired numbers for the sample population (n=95), representing the mid-term course grades in their eight respective core curriculum Career and Technical Education courses and their responses to the IAR questionnaire. It will also provide a statistical analysis comparing the sample means in order to test the hypothesis that female students will out perform males.

DATA

The population included 141 Career and Technical education students, comprised both male and female, junior and senior students, enrolled in eight (8) Marketing Education common core courses, including: Marketing Education - Non Co-op and Co-op, Advanced Marketing – Non Co-op and Co-op, Fashion Marketing – Non Co-op and Co-op and Advanced Fashion Marketing – Non Co-op and Co-op, in a suburban high school. Participation was voluntary. Each student included in the research completed a 34 question IAR Questionnaire at home. There were 95 student questionnaires completed. Appendix C illustrates the numerical coding for the Subject, Course, Grade Level, Sex, Mid-term Grade, “I” Positive and “I” Negative Scores and “I Total” values that were assigned. Appendix D contains the assembled data for the Responding Population (n=95). The Male Mid-Term and I Total Data was provided in Appendix E and the Female Mid-Term and I Total Data was in Appendix F.

The population was 141 students, 95 of whom volunteered for the study. This equaled a response rate of 67.4 percent. Table 1 shows the response rate data in tabular form.

Table 1
Response Data

TOTAL STUDENT POPULATION	141
COMPLETED QUESTIONNAIRES RETURNED	95
EFFECTIVE RESPONSE RATE	67%

RESULTS

The mean mid-term grade for the sample (n=95) was 4.28 on a five-point scale, five (5) is an "A" and one (1) is an "F", with a Standard Deviation of .794. The mean Intellectual Achievement Responsibility Total ("I Total") was 25.16 on a 34-point scale, as shown in Descriptive Statistics Table 2.

Table 2
Mid-term Grade and I Total Score: Population (n=95)

	Mean	Std. Deviation	N
MIDTERM	4.28	.794	95
ITOTAL	25.16	4.003	95

The mean mid-term grade and “I Totals” for the population by gender was:

- Males (n=32) is 4.00 on a five-point scale, with a Standard Deviation of .842. The mean “I Total” was 23.72 on a 34-point scale, and
- Females (n=63) is 4.43 on a five-point scale, with a Standard Deviation of .734. The mean “I Total” was 25.89 on a 34-point scale as shown in Descriptive Statistics Table 3.

Table 3

Mid-term Grade and I Total Score: Gender

Descriptive Statistics

SEX		Mean	Std. Deviation	N
1	MIDTERM	4.00	.842	32
	ITOTAL	23.72	4.312	32
2	MIDTERM	4.43	.734	63
	ITOTAL	25.89	3.659	63

Sex 1 = Males

Sex 2 = Females

The two sets of paired numbers for the sample population (n=95), representing the mid-term course grades in their eight respective core curriculum Career and Technical Education courses and their responses to the IAR questionnaire were collected and calculated using a one-tailed Pearson’s r Product Moment Correlation (Pearson’s r) analysis to determine statistical correlation. The Pearson’s r-value was calculated at .190 with a sample size of

95. With degrees of freedom of 93 at the .05 level of confidence the obtained critical Pearson's r-value was .1729. The results were indicated in Table 4. (See Appendix G for Table of Critical Values for Pearson Correlation and Correlation Results.)

Table 4
Pearson's r Product Moment Correlation
at the .05 Level of Significance
(One-tailed Test)

Correlations

		MIDTERM	ITOTAL
MIDTERM	Pearson Correlation	1	.190*
	Sig. (1-tailed)	.	.033
	N	95	95
ITOTAL	Pearson Correlation	.190*	1
	Sig. (1-tailed)	.033	.
	N	95	95

*. Correlation is significant at the 0.05 level (1-tailed).

The sample means of mid-term grades and "I Totals" were collected and calculated for the two gender subgroups of the population, 32 males and 63 females, using a one-tailed t-test to determine statistical significance. The average mid-term grade for male (M1) students was 4.00, while female (M2) students had a mean of 4.43. With a degree of freedom of 93 at the .01 level of

confidence the critical t-value was 1.29. The t-value was -2.569 with a sample size of 95.

The average "I Total" for male (M1) students was 23.72, while female (M2) students had a mean of 25.89. With a degree of freedom of 93 at the .01 level of confidence the critical t-value was 1.29. The t-value was -2.57 with a sample size of 95 as shown in Table 5.

Table 5

"I Total" t- Test Analysis By Gender

Comparison of Sample Means at the .01 Level of Significance

(One-tailed Test)

	<u>Sample Size</u>	<u>Mean</u>	<u>Critical t-value</u>	<u>t-value</u>
Male "I Total" (M1)	32	23.72	1.29	-2.57
Female "I Total" (M2)	63	25.89		

The average mid-term grade for male (M1) students was 4.00, while female (M2) students had a mean of 4.43. With a degree of freedom of 93 at the

.01 level of confidence the critical t-value was 1.29. The t-value was -2.557 with a sample size of 95 as shown in Table 6.

Table 6
 Mid-Term Grade t- Test Analysis By Gender
 Comparison of Sample Means at the .01 Level of Significance
 (One-tailed Test)

	<u>Sample Size</u>	<u>Mean</u>	<u>Critical t-value</u>	<u>t-value</u>
Male Mid-term Grades (M1)	32	4.00	1.29	-2.557
Female Mid-term Grades (M2)	63	4.43		

SUMMARY

This chapter presented the collected data and calculated results in order to determine if there was a correlation between learner responsibility and

performance and if female students took more responsibility for their academic outcomes and outscored males in Marketing Education courses.

Mid-term grades and student scores on the Intellectual Achievement Responsibility Questionnaire were used to determine if the variables are related for high school students taking Career and Technical Education common core courses and to compare the sample means. The mean mid-term grade and "I Totals" were computed for the population and by gender. The two sets of paired numbers were subjected to Pearson's r testing in order to determine statistical correlation and the sample means were subjected to t-tests in order to determine statistical significance. In Chapter V, conclusions will be given based on statistical analysis of the findings and recommendations for the future will be offered.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The problem of this study was to determine the relationship between a Marketing Education student's assumption of responsibility for academic achievement and mid-term performance scores for their chosen Career and Technical Education course and additionally if female students take more responsibility for their academic outcomes and outscore males in Marketing Education courses. This chapter summarizes the study, draws conclusions based on the findings and offers recommendations for future studies.

SUMMARY

In order to determine if there was a significant correlation between learner responsibility and academic performance, the mid-term grades of 95 high school students, comprised of males and females, juniors and seniors, enrolled in Career and Technical Education core curriculum courses and the results of their Intellectual Achievement Responsibility Questionnaires were collected. The mid-term grades and "I Totals" that were collected were converted into interval data and subjected to Pearson's r testing in order to determine if there was a correlation between the two sets of paired numbers at the 95% level of

confidence. Additionally, the mid-term grades and "I Totals" were collected and subjected to t-testing by gender to determine if there was a significant difference between male and female scores.

CONCLUSIONS

To guide this study, the following hypotheses were established:

H₁: Students who take responsibility for their academic outcomes will outperform those students who do not in Marketing Education courses.

The Pearson's r-value was calculated at .190. This value exceeds the .1729 obtained from the Table of Critical Values at the .05 Level of Significance. Therefore we accept the hypothesis. From the Table of Magnitude $r = .190$, we may say there is a slight correlation (0 - .20) between mid-term grades and acceptance of responsibility for academic performance. Therefore, we can conclude that students who take responsibility for their academic outcomes will outperform those students who do not in Marketing Education courses. The students who had mid-term grades of "B" or above also had "I Totals" above the mean of 23.72.

The second hypothesis, H₂: Female students will take more responsibility for their academic outcomes and will outscore males in Marketing Education courses, was confirmed. The t-value was calculated at 2.557 for the "I Total" analysis. This value exceeds the value of 1.29 obtained from the table of critical

values at the .01 confidence level. As a result of the obtained t-values being greater than the critical values, the predictive hypothesis was accepted. Females did accept more responsibility than males and out scored males in Marketing Education courses.

RECOMMENDATIONS

Most teachers believe student motivation was a significant contributor to school performance. This study validated that belief and was timely and necessary due to the fact that state legislatures have mandated statewide standardized testing in core curriculum subjects that holds teachers accountable for the test results of their students. To date, standardized testing has not included Career and Technical Education curriculum but individual school districts have begun to implement similar assessment measures to insure uniformity throughout district CTE programs. Therefore, it can be said that encouraging students to take responsibility for learning performance will increase the effectiveness and value of the Career and Technical Education experience for these students.

Motivation to accomplish goals, express interest in and effort toward schoolwork, self-confidence in one's ability, and persistence in the face of difficulty were all aspects of motivation that contributed to academic success and all were theoretically important (Ames, 1992). The following is a list of

recommendations to be considered for future studies in the area of increasing students responsibility for their learning in Career and Technical Education studies:

1. Students who are inclined to approach schoolwork from the point of learning and mastering the material tend to differ in work styles from students whose goals are to obtain grades or display competence. Mastery learning is a key element of the CTE philosophy. A follow-up study should be conducted to determine if there is a difference in student acceptance of responsibility in co-op students, who are employed throughout the school year, versus non co-op students, who fulfill course requirements without employment.
2. Cooperative learning in groups is one strategy that has been effective in teaching students the importance of doing their job, a critical CTE objective. Students learn the expectations of the teacher, their responsibilities, and their group's responsibilities. Faculty development and training in strategies that increase student responsibility for their learning should be held on a regular basis with corresponding procedures implemented and outcomes measured to determine effectiveness.
3. Analysis and research of the probable causes of students' lack of responsibility for their own learning indicated that lack of higher

order thinking skills, lack of ability to transfer learning and lack of self-motivation were responsible. An effective method of assessment and evaluation must be established that can target students who have a low sense of student responsibility. Teachers can then provide corresponding learning opportunities and supporting intervention for these students. This information is applicable across the curriculum.

4. It is important to discover the areas in which students are interested. Research indicates that students who are allowed the freedom to choose different ways of completing assignments, according to what interests them as an individual, were more accountable for their academic success. Having students complete an interest inventory can provide the framework for class instruction and corresponding career counseling.

Most importantly, the researcher recommends that teachers must be encouraged to model social skills that encourage students' to assume ownership and responsibility of their learning. A primary goal of Career and Technical Education is to generate the desire in our students to become lifelong learners. This requires shifting from teacher centered to student centered learning. Providing an environment where students feel valued and respected, are motivated to be actively involved with their own learning, learn from and value the

diversity of the group and have an opportunity to discover their unique learning style fosters responsibility in the learner and encourages lifelong learning.

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APPENDIX A

Intellectual Achievement Responsibility Questionnaire

Test: Intellectual Achievement Responsibility Questionnaire. Crandall.

Abstract: A forced-choice measure which provides assessments of children's beliefs that they, rather than others, are responsible for their intellectual and academic successes and failures. Subscales scores assess internal-external control separately in success and failure situations.

Test Materials: Questionnaire

Administration: See Questionnaire and Directions for Administering and Scoring.

Scoring: See Directions for Administering and Scoring.

Interpretation: See Directions for Administering and Scoring.

Technical Information: None provided.

References: See Bibliography

Crandall, V. C., Katkovsky, W., & Crandall, V. J. "Children's Beliefs in their Own Control of Reinforcements in Intellectual – Academic Situations." Child Development, 1965, 36, No. 1, 91-109.

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Intellectual Achievement Responsibility Questionnaire

Administration: For subject 6th grade and older, the examiner reads the instructions to the subjects as they follow along on their own copies. These are headed GENERAL INSTRUCTIONS on the first page of the questionnaire. It is helpful for the examiner to add that some of the questions will seem to be worded in a rather "childish" manner and that this is because the same questionnaire is also used for younger children: they are worded simply so that younger children can understand them.

For subjects 5th grade or younger, the examiner gives these instructions aloud before she (he) administers the scale orally and individually. It is actually preferable to tape record both instructions and items, if possible, to standardize administration. It also helps to add (for subjects of all ages) that sometimes both answers will seem to describe what happens to them, or that neither one exactly describes it. In such a case, they should choose the one, and only one, answer which comes closest, for them. (This is to prevent the subject from circling both or neither answer. This will happen anyhow in occasional rare instances. When so, our practice has been to retain the data if the subject has done that for only one item, and to score that item with a .5. When it happens more than once, we discard that subjects data.) When individual administration is prohibitive, we have administered the scale to small groups of 10 or 12 subjects, using the tape recording and monitoring carefully to make certain all children are responding to the same item they are listening to on the tape.

Scoring: On the keyed questionnaire to follow, the internal response for each item is indicated with a circle around the A or B preceding the alternatives for that item. The scale is scored in the internal direction.

A+ or a- precedes each item stem to denote positive outcome (+) or negative outcome (-) items. The scale is regularly scored in the following ways: I+ (Internality for positive events) is scored by summing the S's INTERNAL responses for items keyed with +. I- (Internality for negative events) is scored by summing the S's INTERNAL responses for items keyed with -. I total is the sum of the I+ and I- sub-scores.

The IAR Questionnaire

DO NOT WRITE YOUR NAME ON THIS SURVEY

Grade: _____ Birth date: _____ Sex: F M

GENERAL INSTRUCTIONS: This questionnaire describes a number of common experiences most of you have in your daily lives. These statements are presented one at a time, and following each are two possible answers. Read the description of the experience carefully, and then look at the two answers. Choose the one that most often describes what happens to you. Put a circle around the "A" or the "B" in front of that answer. Be sure to answer each question according to how you really feel.

Answer every question on your own. There are no correct or incorrect answers.

1. If a teacher passes you to the next grade, would it probably be
 - a. because she liked you, or
 - b. because of the work you did?

2. When you do well on a test at school, is it more likely to be
 - a. because you studied for it, or
 - b. because the test was especially easy?

3. When you have trouble understanding something in school, is it usually
 - a. because the teacher didn't explain it clearly, or
 - b. because you didn't listen carefully?

4. When you read a story and can't remember much of it, is it usually
 - a. because the story wasn't well written, or
 - b. because you weren't interested in the story?

5. Suppose your parents say you are doing well in school. Is this likely to happen
 - a. because your school work is good, or
 - b. because they are in a good mood?

6. Suppose you did better than usual in a subject at school. Would it probably happen
 - a. because you tried harder, or
 - b. because someone helped you?

7. When you lose at a game of cards or a video game, does it usually happen
 - a. Because the other player is good at the game, or
 - b. Because you don't play well?
8. Suppose a person doesn't think you are very bright or clever.
 - a. Can you make him change his mind if you try to, or
 - b. are there some people who will think you're not very bright no matter what you do?
9. If you solve a puzzle quickly, is it
 - a. because it wasn't a very hard puzzle, or
 - b. because you worked on it carefully?
10. If a boy or girl tells you that you are dumb, is it more likely that they say that
 - a. because they are mad at you, or
 - b. because what you did really wasn't very bright?
11. Suppose you study to become a teacher, scientist, or doctor and you fail. Do you think this would happen
 - a. because you didn't work hard enough, or
 - b. because you needed some help, and other people didn't give it to you?
12. When you learn something quickly in school, is it usually
 - a. because you paid close attention, or
 - b. because the teacher explained it clearly?
13. If a teacher says to you, "Your work is fine," is it
 - a. something teachers usually say to encourage pupils, or
 - b. because you did a good job?
14. When you find it hard to work arithmetic or math problems at school, is it
 - a. because you didn't study well enough before you tried them, or
 - b. because the teacher gave problems that were too hard?
15. When you forget something you heard in class, is it
 - a. because the teacher didn't explain it very well, or
 - b. because you didn't try very hard to remember?

16. Suppose you weren't sure about the answer to a question your teacher asked you, but your answer turned out to be right. Is it likely to happen
 - a. because she wasn't as particular as usual, or
 - b. because you gave the best answer you could think of?

17. When you read a story and remember most of it, is it usually
 - a. because you were interested in the story, or
 - b. because the story was well written?

18. If your parents tell you you're acting silly and not thinking clearly, is it more likely to be
 - a. because of something you did, or
 - b. because they happen to feel cranky?

19. When you don't do well at a test at school, is it
 - a. because the test was especially hard, or
 - b. because you didn't study for it?

20. When you win at a game of cards or a video game, does it happen
 - a. because you play real well, or
 - b. because the other person doesn't play well?

21. If people think you are bright or clever, is it
 - a. because they happen to like you, or
 - b. because you usually act that way?

22. If a teacher didn't pass you to the next grade, would it probably be
 - a. because she "had it in for you," or
 - b. because your school work wasn't good enough?

23. Suppose you don't do as well as usual in a subject at school. Would this probably happen
 - a. because you weren't as careful as usual, or
 - b. because somebody bothered you and kept you from working?

24. If a boy or girl tells you that you are bright, is it usually
 - a. because you thought up a good idea, or
 - b. because they like you?

25. Suppose you become a famous teacher, scientist, or doctor. Do you think this would happen
 - a. because other people helped you when you needed it, or
 - b. because you worked very hard?

26. Suppose your parents say you aren't doing very well in your schoolwork. Is this likely to happen more
- because your work isn't very good, or
 - because they are feeling cranky?
27. Suppose you are showing a friend how to play a game and he has trouble with it. Would that happen
- because he wasn't able to understand how to play, or
 - because you couldn't explain it well?
28. When you find it easy to work arithmetic or math problems at school, is it usually
- because the teacher gave you especially easy problems, or
 - because you studied your book well before you tried them?
29. When you remember something you heard in class, is it usually
- because you tried hard to remember, or
 - because the teacher explained it well?
30. If you can't work a puzzle, is it more likely to happen
- because you are not especially good at working puzzles, or
 - because the instructions weren't written clearly enough?
31. If your parents tell you that you are bright or clever, is it more likely
- because they are feeling good, or
 - because of something you did?
32. Suppose you are explaining how to play a game to a friend and he learns quickly. Would that happen more often
- because you explained it well, or
 - because he was able to understand it?
33. Suppose you're not sure about the answer to a question your teacher asks you and the answer you give turns out to be wrong. Is it likely to happen
- because she was more particular than usual, or
 - because you answered too quickly?
34. If a teacher says to you, "Try to do better," would it be
- because this is something she might say to get pupils to try harder, or
 - because your work wasn't as good as usual?

APPENDIX B
Parental Approval Letter and Form

Old Dominion University
Occupational and Technical Studies
Graduate Research Thesis
108 Technology Building
Hampton Blvd.
Norfolk, VA 23529

February 17,

2004

Dear Parents,

We are conducting a study involving students' academic performance and how they can take control of their education. To conduct this study we need the participation of 9th through 12th grade male and female students enrolled in Career and Technical Education classes at First Colonial High School. The attached "Permissions for Child's Participation" form describes the study and asks your permission for your child to participate.

Please carefully read the attached "Permission for Child's Participation" form. It provides important information for you and your child. If you have any questions pertaining to the attached form or to the research study, please feel free to contact Ms. Jeannine Jones, Department Chair, First Colonial High School Career and Technical Studies, or myself, Linda B. Mills, Old Dominion University, Occupational and Technical Studies, Masters of Science candidate, at the numbers below.

After reviewing the attached information, please return a signed copy of the "Permission for Child's Participation" form in the large manila envelope. Place the completed questionnaire in the smaller white envelope, seal it, and place it into the large manila envelope as well. Return the packet to you child's teacher if you are willing to allow your child to participate in the study. Keep the additional copy of the permission form for your records.

We thank you in advance for taking the time to consider your child's participation in this study.

Sincerely,

Jeannine Jones
496-6711

Linda B. Mills
481-7282

PERMISSION FOR CHILD'S PARTICIPATION DOCUMENT

The purposes of this form are to provide information that may affect decisions regarding your child's participation and to record the consent of those who are willing for their child to participate in this study.

TITLE OF RESEARCH: *The Relationship Between Learner Responsibility and Performance*

RESEARCHERS: *Linda B. Mills, Master of Science candidate, Old Dominion University*

DESCRIPTION OF RESEARCH STUDY: A study involving students' academic performance and how they can take control of it.

If you decide to allow your child to participate in this study, your child will be completing The Intellectual Achievement Responsibility Questionnaire, a questionnaire comprising 34 questions. Your child's participation will take approximately 15 minutes to complete the 34 questions.

EXCLUSIONARY CRITERIA: In order for your child to participate in this study, your child must be a student enrolled in a Career and Technical Education course.

RISKS: Participation in this research study does not place the student at risk. All responses and any personally identifiable information will be kept confidential throughout the research and thereafter.

BENEFITS: Based on study results, educational strategies directed at encouraging student control of success and failure and motivation to achieve will be developed. A summary of results will be made available to both teachers and parents.

COSTS AND PAYMENTS: All costs to be incurred by researcher.

NEW INFORMATION: You will be contacted if new information is discovered that would reasonably change your decision about your child's participation in this study

CONFIDENTIALITY: Participants will be randomly assigned an identification number known only to the teacher so that your child's name will not be attached to his or her responses. Again, the researcher will have no knowledge of which child is linked to which number. Only researchers involved in the study or in a professional review of the study will have access to data sheets listed anonymously. All data and participant information will be kept in a locked and secure location.

WITHDRAWAL PRIVILEGE: Your child's participation in this study is completely voluntary. It is all right to refuse your child's participation. Even if you agree now, you may withdraw your child from the study at any time. In addition, your child will be given a chance to withdraw at any time if he/she so chooses.

COMPENSATION FOR ILLNESS AND INJURY: Agreeing to your child's participation does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation. In the event that your child suffers harm as a result of participation in this research project, you may contact Linda B. Mills, at 757/481-7282 or Dr. David Swain, Chair of the Institutional Review Board at (757) 683-6028.

VOLUNTARY CONSENT: By signing this form, you are saying 1) that you have read this form or have had it read to you, and 2) that you are satisfied you understand this form, the research study, and its risks and benefits. The researchers will be happy to answer any questions you have about the research. If you have any questions, please feel free to contact Ms. Jeannine Jones, 496-6711 or Ms. Linda B. Mills, 481-7282.

If at any time you feel pressured to allow your child to participate, or if you have any questions about your rights or this form, please call Dr. David Swain, Chair of the Institutional Review Board Chair (683-6028) or the Old Dominion University Office of Research (683-3460).

Note: By signing below, you are telling the researchers YES, that you will allow your child to participate in this study. Please keep one copy of this form for your records.

Your child's name (please print): _____

Your child's birth date: _____

Your name (please print): _____

Relationship to child (please check one):

Parent: _____

Guardian: _____

Your Signature:

Date:

INVESTIGATOR'S STATEMENT: I certify that this form includes all information concerning the study relevant to the protection of the rights of the participants, including the nature and purpose of this research, benefits, risks, costs, and any experimental procedures.

I have described the rights and protections afforded to human research participants and have done nothing to pressure, coerce, or falsely entice the parent to allowing this child to participate. I am available to answer the parent's questions and have encouraged him/her to ask additional questions at any time during the course of the study.

Experimenter's Signature:

Date:

APPENDIX C

System of Coding Data Values

System of Coding Data Values

Subject	Course and Number	Grade Level	Sex	Mid-term	" " Pos	" " Neg	" " Total
a = Marketing Instructor	Marketing Non Co- op = 1	Junior =1	Male =1	A=5	17 or less	17 or less	34 or less
b = Fashion Instructor	Marketing Co-op = 2	Senior =2	Female =2	B=4			
c = Advanced Marketing Instructor	Advanced Marketing Non Co- op = 3			C=3			
	Advanced Marketing Co-op = 4			D=2			
	Fashion Marketing Non Co- op = 5			F=1			
	Fashion Marketing Co-op = 6						
	Advanced Fashion Marketing Non Co- op = 7						
	Advanced Fashion Marketing Co-op = 8						

APPENDIX D

Total Sample Population Data

	subject	course	gradelev	sex	midterm	ipos	ineg	itotal
1	a24	1	1	1	4	15	11	26
2	a16	1	1	1	3	10	11	21
3	a10	1	1	1	5	13	9	22
4	a11	1	1	1	4	9	7	16
5	a17	1	1	1	4	15	12	27
6	a18	1	2	1	3	11	12	23
7	a5	1	1	1	4	9	12	21
8	a2	1	1	2	5	13	15	28
9	a12	1	1	2	3	11	10	21
10	a13	1	2	1	4	15	12	27
11	a7	1	2	1	4	15	12	27
12	a33	1	2	1	5	14	10	24
13	a21	1	2	2	3	12	11	23
14	a22	1	2	2	4	10	11	21
15	a23	1	2	2	4	15	13	28
16	a34	1	2	2	4	12	14	26
17	a35	1	2	2	4	13	13	26
18	a14	1	2	2	4	10	14	24
19	a9	2	1	1	4	10	8	18
20	a28	2	1	2	4	14	13	27
21	a3	2	2	1	5	13	14	27
22	a15	2	2	1	5	16	14	30
23	a26	2	2	1	4	6	12	18
24	a1	2	2	2	4	12	13	25
25	a30	2	2	2	4	15	9	24
26	c2	3	2	1	5	15	13	28

	subject	course	gradelev	sex	midterm	ipos	ineg	itotal
53	c26	2	2	1	5	15	12	27
54	c37	2	2	1	3	15	13	28
55	c44	2	2	2	3	14	8	22
56	b17	7	2	2	5	13	10	23
57	b16	7	2	2	5	13	15	28
58	b13	7	2	2	5	13	12	25
59	b12	7	2	2	5	10	12	22
60	b11	7	2	2	5	16	11	27
61	b9	7	2	2	5	16	16	32
62	b6	7	2	2	5	10	15	25
63	b5	7	2	2	5	15	6	21
64	b4	7	2	2	4	14	14	28
65	b3	7	2	2	5	9	11	20
66	b2	8	2	2	5	9	7	16
67	b7	8	2	2	4	12	9	21
68	b8	8	2	2	4	14	14	28
69	b14	8	2	2	5	16	11	27
70	b15	8	2	2	3	12	15	27
71	b18	8	2	2	4	17	15	32
72	b52	5	1	2	5	12	12	24
73	b46	5	1	2	5	14	14	28
74	b35	5	1	2	5	17	14	31
75	b25	5	1	2	5	17	15	32
76	b20	5	1	2	5	13	14	27
77	b22	6	1	2	5	15	13	28
78	b31	6	1	2	4	13	12	25

APPENDIX E

Male Mid-term and I Total Data

	subject	sex	midterm	itotal
1	a24	1	4	26
2	a16	1	3	21
3	a10	1	5	22
4	a11	1	4	16
5	a17	1	4	27
6	a18	1	3	23
7	a5	1	4	21
8	a13	1	4	27
9	a7	1	4	27
10	a33	1	5	24
11	a9	1	4	18
12	a3	1	5	27
13	a15	1	5	30
14	a26	1	4	18
15	c2	1	5	28
16	c11	1	5	19
17	c8	1	4	24
18	c5	1	5	16
19	c4	1	3	26
20	c12	1	3	29
21	c41	1	4	28
22	c49	1	4	17
23	c38	1	5	28
24	c29	1	4	25
25	c24	1	3	22
26	c48	1	2	24

APPENDIX F

Female Mid-term and I Total Data

	subject	sex	midterm	itotal
1	a2	2	5	28
2	a12	2	3	21
3	a21	2	3	23
4	a22	2	4	21
5	a23	2	4	28
6	a34	2	4	26
7	a35	2	4	26
8	a14	2	4	24
9	a28	2	4	27
10	a1	2	4	25
11	a30	2	4	24
12	c9	2	5	26
13	c7	2	5	23
14	c6	2	3	24
15	c19	2	3	26
16	c18	2	3	22
17	c20	2	5	28
18	c32	2	4	30
19	c28	2	5	33
20	c13	2	5	22
21	c39	2	5	27
22	c35	2	5	24
23	c44	2	3	22
24	b17	2	5	23
25	b16	2	5	28
26	b13	2	5	25

	subject	sex	midterm	itotal
53	b38	2	4	30
54	b50	2	5	29
55	b19	2	5	24
56	b51	2	5	22
57	b55	2	5	22
58	b47	2	4	27
59	b32	2	4	19
60	b27	2	3	30
61	b45	2	3	22
62	b21	2	5	29
63	b36	2	4	26

APPENDIX G

Pearson's r Product Moment Correlation

And

Table of Critical r Values

PEARSON'S r PRODUCT MOMENT CORRELATION

Descriptive Statistics

	Mean	Std. Deviation	N
MIDTERM	4.28	.794	95
ITOTAL	25.16	4.003	95

Correlations

		MIDTERM	ITOTAL
MIDTERM	Pearson Correlation	1	.190*
	Sig. (1-tailed)	.	.033
	N	95	95
ITOTAL	Pearson Correlation	.190*	1
	Sig. (1-tailed)	.033	.
	N	95	95

*. Correlation is significant at the 0.05 level (1-tailed).

Table of critical values for Pearson correlation

	One Tailed Probabilities			
	0.05	0.025	0.005	0.0005
	Two-Tailed Probabilities			
N	0.1	0.05	0.01	0.001
4	0.900	0.950	0.990	0.999
5	0.805	0.878	0.959	0.991
6	0.729	0.811	0.917	0.974
7	0.669	0.754	0.875	0.951
8	0.621	0.707	0.834	0.925
9	0.582	0.666	0.798	0.898
4	0.549	0.632	0.765	0.872
10	0.549	0.632	0.765	0.872
11	0.521	0.602	0.735	0.847
12	0.497	0.576	0.708	0.823
13	0.476	0.553	0.684	0.801
14	0.458	0.532	0.661	0.780
15	0.441	0.514	0.641	0.760
4	0.412	0.482	0.606	0.725
16	0.426	0.497	0.623	0.742
17	0.412	0.482	0.606	0.725
18	0.400	0.468	0.590	0.708
19	0.389	0.456	0.575	0.693
20	0.378	0.444	0.561	0.679
21	0.369	0.433	0.549	0.665
4	0.344	0.404	0.515	0.629
22	0.360	0.423	0.537	0.652
23	0.352	0.413	0.526	0.640

24	0.344	0.404	0.515	0.629
25	0.337	0.396	0.505	0.618
26	0.330	0.388	0.496	0.607
27	0.323	0.381	0.487	0.597
28	0.317	0.374	0.479	0.588
29	0.311	0.367	0.471	0.579
30	0.306	0.361	0.463	0.570
35	0.283	0.334	0.430	0.532
40	0.264	0.312	0.403	0.501
45	0.248	0.294	0.380	0.474
50	0.235	0.279	0.361	0.451
60	0.214	0.254	0.330	0.414
70	0.198	0.235	0.306	0.385
80	0.185	0.220	0.286	0.361
90	0.174	0.207	0.270	0.341
100	0.165	0.197	0.256	0.324
200	0.117	0.139	0.182	0.231
300	0.095	0.113	0.149	0.189
400	0.082	0.098	0.129	0.164
500	0.074	0.088	0.115	0.147
1000	0.052	0.062	0.081	0.104

Calculated using MS Excel©

APPENDIX H

I Total and Mid-term t-Test Analysis By Gender

And

Table of Critical t Values

Group Statistics

	SEX	N	Mean	Std. Deviation	Std. Error Mean
ITOTAL	1	32	23.72	4.312	.762
	2	63	25.89	3.659	.461

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ITOTAL	Equal variances assumed	2.707	.103	-2.570	93	.012	-2.17	.844	-3.847	-.494
	Equal variances not assumed			-2.436	54.199	.018	-2.17	.891	-3.956	-.384

- Notice: This is a two-tailed significance value, for one-tailed significance value, divide the two-tailed value in half.

"I TOTAL" t- TEST ANALYSIS BY GENDER

Group Statistics

	SEX	N	Mean	Std. Deviation	Std. Error Mean
MIDTERM	1	32	4.00	.842	.149
	2	63	4.43	.734	.093

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MIDTERM	Equal variances assumed	.097	.756	-2.557	93	.012	-.43	.168	-.761	-.096
	Equal variances not assumed			-2.445	55.416	.018	-.43	.175	-.780	-.077

- Notice: This is a two-tailed significance value, for one-tailed significance value, divide the two-tailed value in half.

MID-TERM GRADE t- TEST ANALYSIS BY GENDER

One Tailed Significance									
	0.1	0.05	0.025	0.005	0.0025	0.0005	0.00025	0.00005	
Two Tailed Significance									
	0.2	0.1	0.05	0.01	0.005	0.001	0.0005	0.0001	
2	1.89	2.92	4.30	9.92	14.09	31.60	44.70	100.14	
3	1.64	2.35	3.18	5.84	7.45	12.92	16.33	28.01	
4	1.53	2.13	2.78	4.60	5.60	8.61	10.31	15.53	
5	1.48	2.02	2.57	4.03	4.77	6.87	7.98	11.18	
6	1.44	1.94	2.45	3.71	4.32	5.96	6.79	9.08	
7	1.41	1.89	2.36	3.50	4.03	5.41	6.08	7.89	
8	1.40	1.86	2.31	3.36	3.83	5.04	5.62	7.12	
9	1.38	1.83	2.26	3.25	3.69	4.78	5.29	6.59	
10	1.37	1.81	2.23	3.17	3.58	4.59	5.05	6.21	
11	1.36	1.80	2.20	3.11	3.50	4.44	4.86	5.92	
12	1.36	1.78	2.18	3.05	3.43	4.32	4.72	5.70	
13	1.35	1.77	2.16	3.01	3.37	4.22	4.60	5.51	
14	1.35	1.76	2.14	2.98	3.33	4.14	4.50	5.36	
15	1.34	1.75	2.13	2.95	3.29	4.07	4.42	5.24	
16	1.34	1.75	2.12	2.92	3.25	4.01	4.35	5.13	
17	1.33	1.74	2.11	2.90	3.22	3.97	4.29	5.04	
18	1.33	1.73	2.10	2.88	3.20	3.92	4.23	4.97	
19	1.33	1.73	2.09	2.86	3.17	3.88	4.19	4.90	
20	1.33	1.72	2.09	2.85	3.15	3.85	4.15	4.84	
21	1.32	1.72	2.08	2.83	3.14	3.82	4.11	4.78	
22	1.32	1.72	2.07	2.82	3.12	3.79	4.08	4.74	
23	1.32	1.71	2.07	2.81	3.10	3.77	4.05	4.69	
24	1.32	1.71	2.06	2.80	3.09	3.75	4.02	4.65	
25	1.32	1.71	2.06	2.79	3.08	3.73	4.00	4.62	

26	1.31	1.71	2.06	2.78	3.07	3.71	3.97	4.59
27	1.31	1.70	2.05	2.77	3.06	3.69	3.95	4.56
28	1.31	1.70	2.05	2.76	3.05	3.67	3.93	4.53
29	1.31	1.70	2.05	2.76	3.04	3.66	3.92	4.51
30	1.31	1.70	2.04	2.75	3.03	3.65	3.90	4.48
35	1.31	1.69	2.03	2.72	3.00	3.59	3.84	4.39
40	1.30	1.68	2.02	2.70	2.97	3.55	3.79	4.32
45	1.30	1.68	2.01	2.69	2.95	3.52	3.75	4.27
50	1.30	1.68	2.01	2.68	2.94	3.50	3.72	4.23
55	1.30	1.67	2.00	2.67	2.92	3.48	3.70	4.20
60	1.30	1.67	2.00	2.66	2.91	3.46	3.68	4.17
65	1.29	1.67	2.00	2.65	2.91	3.45	3.66	4.15
70	1.29	1.67	1.99	2.65	2.90	3.43	3.65	4.13
75	1.29	1.67	1.99	2.64	2.89	3.42	3.64	4.11
80	1.29	1.66	1.99	2.64	2.89	3.42	3.63	4.10
85	1.29	1.66	1.99	2.63	2.88	3.41	3.62	4.08
90	1.29	1.66	1.99	2.63	2.88	3.40	3.61	4.07
95	1.29	1.66	1.99	2.63	2.87	3.40	3.60	4.06
100	1.29	1.66	1.98	2.63	2.87	3.39	3.60	4.05
200	1.29	1.65	1.97	2.60	2.84	3.34	3.54	3.97
500	1.28	1.65	1.96	2.59	2.82	3.31	3.50	3.92
1000	1.28	1.65	1.96	2.58	2.81	3.30	3.49	3.91
Infinity	1.28	1.64	1.96	2.58	2.81	3.29	3.48	3.89