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**A correlation study of physical education graduates as a
predictor of college success**

Chesterman, Richard Paul, D.A.

Middle Tennessee State University, 1993

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**A Correlation Study of Physical Education Graduates
as a Predictor of College Success**

Richard Paul Chesterman

**A dissertation presented to the
Graduate Faculty of Middle Tennessee State University
in partial fulfillment of the requirements
for the degree Doctor of Arts
in Physical Education**

May 1993

A Correlation Study of Physical Education Graduates
as a Predictor of College Success

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ABSTRACT

A Correlation Study of Physical Education Graduates as a Predictor of College Success

Richard Paul Chesterman

This study proposed to determine if a relationship existed between high school and college indicators of success. Gender, final high school grade point average, and entering American College Test (ACT) scores were compared to final college grade point averages of physical education teacher education college graduates.

An investigation within and among the variables and the graduating classes was the method to determine relationships. Pearson product moment correlation, the dependent t-test, analysis of variance (ANOVA), and multiple regression were utilized for statistical analyses. All relationships were tested at the .05 level of significance. In order to confirm these statistical data, other procedures used were Scheffe', backtracking, and cross-validation.

Major findings were:

1. There was a significant relationship between high school and college grade point averages.
2. There was a significant relationship between entering ACT scores and college grade point average.

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3. There was no significant difference in the variance of scores between males and females from high school to college.

4. There was no significant difference within or between groups as determined by gender, grade point averages, or ACT scores.

The writer concluded general objective data as tested could be used as an indicator of college success by advisors of prospective physical education teacher education majors. Further study identifying specific courses, tests, skills, and sub-groups was suggested as a means to improve advising, as well as for remedial purposes.

ACKNOWLEDGMENTS

The writer gratefully acknowledges the time, patience, and technical assistance of Dr. A. H. Solomon and Dr. Charles W. Babb.

DEDICATION

This dissertation is dedicated to the two people who have been the most influential in my professional life, Dr. William M. Rigel and Dr. Glen P. Reeder.

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CHAPTER 1

Introduction

The need to produce quality physical educators for the public and private sector is an obvious goal for colleges. Past and present economic conditions place physical education programs at risk (Morrisey, 1992). Reduced funding for educational programs necessitates the review of present offerings. Accountability becomes the byword defined by cost-effectiveness versus academic impact. The literature indicates the importance between what is expected in the classroom and students' development (Greenwood, Delquadri, & Hall, 1989).

Physical educators at the college level are being mandated to assess student outcomes in terms of what competencies the student possesses at the end of the college experience. Accountability assumes that desirable competencies can be identified, measured, and accurately interpreted to assess departmental and institutional effectiveness. State and regional accrediting associations use a variety of methods to ascertain the relationship between the department's stated objectives, the delivery system designed to achieve those objectives, and the resulting competencies that validate the process. College syllabi attempt to incorporate the cognitive and affective domains within the goals and objectives of the course.

Physical educators must also measure academic success in the psychomotor domain. College syllabi become the written contract that links teacher with student.

Grade point average is the accepted standard of measurement of academic success in college. Physical educators responsible for teacher preparation programs recognize the complexity and interrelationship of factors that determine academic success in college. The collection and interpretation of specific historical data may indicate a relationship that could contribute to defining entrance requirements and advisement into physical education teacher education programs.

Statement of the Problem

This study proposed to determine if there was a relationship between high school (final grade point average and American College Test [ACT] scores) and college (final grade point average and bachelor degree recipients) indicators of academic success. Physical education teacher education graduates from two Tennessee regionally accredited institutions during a four-year period were investigated.

Delimitations of the Study

The delimitations of this study were:

1. The research was limited to but included all physical education graduates in the teacher education programs.

2. The research was limited to a four-year period at two Tennessee regionally accredited universities.

3. The investigation was restricted to gender, final high school grade point average, entering ACT scores, and final college grade point average.

Basic Assumptions

Several assumptions were made concerning this study:

1. The subjects of this study were representative of the diverse composition of physical education graduates.

2. All of the subjects were graduates and chosen without bias to extraneous variables.

3. Extraneous variables (transfer students, time taken to complete degree, gender, age, race, etc.) were not a factor in the research design of the study.

4. The writer recognized there was a range in the level of difficulty in high schools and colleges. Grade point averages were calculated on a 4.0 scale and were statistically considered as such. For the purpose of this study the research data should not be skewed because the variables were categorical.

Significance of the Study

Physical education teacher preparation programs can justify selective entrance requirements when objective data indicate academic success. As teacher preparation programs are redesigned to ensure a relationship between the student's college academic success and future teaching

success, it will become more important to obtain specific objective data to be utilized in the selection process (Schalock, 1979). Although academic success is not the sole predictor of future teaching success, it is necessary to attain a degree. Also, given the diverse competencies to be met on college syllabi in a teacher education program, the need to attract and select brighter students becomes necessary (Clark, Johnson, Kessler, & Schultz, 1984).

Objective indicators of academic success can be used in several areas regarding admissions and advisement. Prospective students could be more accurately advised of potential success. Stronck (1979) suggested that interviews not be a part of the admissions process because charisma may take precedence over objective data. This focuses the need for advisors to have data specific to physical education teacher education programs.

Retention rates are higher among academically successful students at colleges with open admissions (Cash & Bissell, 1985). Physical education preparation programs become more cost-effective as a result of higher retention due to higher enrollment in upper division classes. Objective data identifying academic success would be beneficial to faculty advisors as a means of remediating competency deficiencies.

Schedule and Data-Gathering Procedures

The computer services department and the records office of two Tennessee state universities were requested to access data on physical education graduates over a recent four-year period. This information was confidential. Gender, final high school grade point average, ACT scores, and final college grade point average were specifically requested.

Definition of Terms

Specific to this study, the following definitions were used:

Academic success--the achievement of something planned, desired, or attempted pertaining to a scholarly organization; for the purpose of this study the achievement was graduating from the physical education teacher education program (American Heritage Dictionary, 1985).

Categorical variable(s)--a classification variable which is analyzed; in this study gender, final high school grade point average, entering ACT scores, graduating class (Thomas & Nelson, 1985).

Extraneous variable(s)--a factor outside the bounds of the experiment that is uncontrolled (Thomas & Nelson, 1985).

Graduating class--considered, for the purpose of this study, an academic school year ending in August (i.e., December 1989, May 1990, and August 1990 graduating classes were considered as one school year's graduating class).

Objective data--information organized for analysis uninfluenced by prejudice and presented factually (American Heritage Dictionary, 1985).

Teaching success--the achievement of the process of imparting knowledge, skill, experience, or instruction (American Heritage Dictionary, 1985); in this study teaching success was used in reference to the teacher education preparation student.

Hypotheses

Upon analyses of the gathered data, the following null hypotheses of physical education teacher education graduates were tested:

Hypothesis 1: There will be no significant relationship between final high school grade point average and final college grade point average.

Hypothesis 2: There will be no significant relationship between entering ACT scores and final college grade point average.

Hypothesis 3: There will be no significant difference between male final high school grade point averages and final college grade point averages and female final high school grade point averages and final college grade point averages.

Hypothesis 4: There will be no significant difference between male entering ACT scores and final college grade

point averages and female entering ACT scores and final college grade point averages.

Hypothesis 5: There will be no significant difference in final college grade point averages of the four graduating classes.

CHAPTER 2

Review of Literature

The assessment of quality is a necessary and essential part of the evaluation process. It is necessary because local and state boards of education should be accountable for delivering the greatest educational impact per dollar of revenue. It is essential in the field of teaching-learning in order to ensure quality as evidenced by measurable student outcomes (Nichols, 1991).

Reduced funding creates competition within the education community. The low priority of physical education is documented in The Shape of the Nation: A Survey of State Physical Education Requirements (American Alliance for Health, Physical Education, Recreation and Dance [AAHPERD], 1987). The result is that physical education programs at all levels are at risk (Hultstrand, 1990; Morrisey, 1992). The ability to maintain an adequate program due to limited funding was cited by Stark (1982) as an assault on quality. The problems of public school funding have a concomitant effect on teacher preparation programs. Jones (1983) claims the steady decline in teacher education enrollment is due to cutbacks in federal spending, a lower public school enrollment, and inadequate teacher salaries. This trend continues into the nineties as state and local authorities respond to the continuing recession.

The steady reduction of bright students attracted to teacher education as evidenced by lower entering college scores undermines quality (Vance & Schlechty, 1982).

A. Shanker (1986) of the American Federation of Teachers advocates a national professional examination as a means to professional recognition and higher teacher quality. At present, each state has unique requirements for the certification of teachers.

Many states require a passing score on the National Teachers Examination (NTE). A passing score is determined by each state and can include the core battery tests, specialty area tests, or a combination of both. The Educational Testing Service (ETS) will not publish an official survey of states' qualifying scores on the NTE because states are continually changing requirements (Gilli & Gilli, 1988). State certification requirements change due to a number of critical factors.

Teacher shortages in specific content areas, elected or appointed state directors' responses to low public school achievement scores, and a budget crisis are but three factors that make solving the equation complex. Wilson (1986) cites "the paradoxical relationship of the [NTE] tests to teacher education curricula" (p. 10). States say the tests are necessary due to inadequate teacher education training programs, but continue to support them despite the content being based upon mastery of college curricula.

Reliance on the NTE as the primary evaluative tool for hiring prospective teachers was questioned when no correlation was found between NTE core battery scores and teacher-effectiveness scores (Brown & Wells, 1988).

Fisher and Feldmann (1985) observe the reaction of institutions to criticisms of personnel quality has been to adjust entrance and exit requirements. College grade point average was most often cited as an admission requirement to teacher education. Fisher and Feldmann's study concluded that there is a complexity of screening procedures and that quality can be found in the diversity of each institution.

The body of research indicates that there is no one standard of quality, learning, teacher effectiveness, or teacher preparation effectiveness. Education, like most institutions under fire, seems to apologize for diversity rather than extol its virtues. If it cannot be defined, labeled, and compartmentalized, often there is an assumption that something is wrong with it. Contentions of non-rigor in teacher education courses, grade inflation, and the admission of academically inferior students into teacher education programs are issues to be addressed from a research base (Nelli, 1984; Weaver, 1979). Grade inflation may not apply to all college programs. Ishler (1984) found entrance and exit requirements in teacher preparation programs more rigorous than other undergraduate programs.

Historically, research says academic success in college is predicated by academic success in high school (Wishart, 1990). Common sense dictates that the skills (i.e., writing, listening, etc.) for academic success from a high school curriculum to a college curriculum are closely aligned. The 1972 study by the Iowa Board of Regents contends that high school percentile rank is the only objective variable for making college admission decisions. The rationale for this statement is that percentile rank places the prospective student in relation to other students at that school for comparison to like rank at another school (in graduating classes of 300 and 50, a student in the 18th percentile would graduate 54th and 9th, respectively). The problem with percentile rank, as well as other objective data, is the lack of consistent data gathering from state to state and even county to county.

Merante (1983) says high school percentile rank and ACT scores, when considered together, are a stronger indicator of college success than when considered alone. Weitzman (1982) offers high school grades and Scholastic Aptitude Test (SAT) scores as measures of predictive success in college. This combination of performance with achievement/aptitude potential is a popular notion in research. Wishart (1990) astutely notes that combining variables may indicate student ability in a specific subject area. A possible implication for physical education is a

motor/fitness/skill test as an indicator for predicting success in a physical education program.

Tanner's (1986) multiple regression analysis asked if high school grades, SAT scores, and college grades were significant indicators of the final grade in a teacher education class. The results showed overall college grades the most reliable predictor. Those students reporting success in the three predictor categories did better in the class than those with lower predictor scores. Further evaluation of this and other similar studies (Bistreich, 1981; Jensen, 1989; Stronck, 1979) of objective pre-admission data consistently reports a pattern of college success based on level of achievement in high school.

Teacher education students generally have good communication skills when compared to math computation (Savage, 1983). Teacher education programs might test communication skills as a prerequisite to admission. At present, most teacher education programs require an English course as an exit requirement (Fisher & Feldmann, 1985). The quality of the student-teaching experience is an indicator of later teaching success.

Pooler (1983) reports a collaborative effort at the University of Maine (Orono) to identify elements of change and need in the redesign of the teacher preparation program. The key point derived from the surveys (using open-ended questions taken over a two-year period) was the perception

that methods courses were least useful and student teaching most useful. Upon perusal of all the collected data, this can be interpreted as a mandate to teacher preparation programs to have a variety of field experiences early and often. Twelve principles of effective teaching and 13 principles of effective teacher preparation resulted from 11 full-day workshops. The process by which this model was conceived is as important as the information it spawned. Faculty, students, special interests (i.e., state board of education), and practitioners were an integral part of the process.

In a study of Northern Kentucky University, Cobb (1984) confirmed that selective admissions into the teacher education program resulted in higher college grade point averages, higher ACT scores, and a student who is slightly older than the traditional student. After the first five years of the program, enrollment and retention increased. There may be other factors not studied affecting enrollment. Cobb speculated that the perception of the program's quality is higher, even though there is no correlation between the selective data and teacher effectiveness. An assumption that a cause-effect relationship exists will produce positive short-term publicity, but can be counterproductive if good teaching does not result. Common (1987) cautions upon reliance on achievement tests as the sole measure of indicating student performance or teacher accountability.

The American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) recognizes the need to emerge into a "true profession" (Carter, Grebner, & Seaman, 1991, p. 20). Stringent credentialing is perceived to be a step from an "occupation to a profession" (p. 21). There is a growing scrutiny of undergraduate physical education programs nationally by AAHPERD/National Council for Accreditation of Teacher Education (NCATE), as well as the state organizations of education responsible for certification. AAHPERD offers guidelines for public school physical education and publishes position papers addressing contemporary issues. It is hoped that through the acceptance and influence of NCATE a consensus will be reached in physical education.

A comparison of graduate admission standards in physical education reveals a "large majority endorse the use of standardized examinations and grade point averages" (Whiddon & Siders, 1988, p. 178). Admission standards are generally lower for undergraduate programs compared to graduate programs. Undergraduate admission standards are more stringent for teacher education programs than most other undergraduate programs.

Each teacher preparation program must answer the ethical question related to open admissions versus stricter entrance requirements. What is the balance between vocational accessibility and academic and/or professional

elitism? The answer may lie in impartial objective data that can indicate success in a specific subject. An unbalanced reliance on exit requirements allows curricular accessibility at the expense of programming a segment of students to fail. The strength of exit requirements as part of an ongoing advising/monitoring process is the assurance that program competencies are being met. The fact that the process to define success is complex should not deter researchers from pursuing answers to the question.

CHAPTER 3

Methods

Nature of the Sample

Ninety-nine physical education teacher education graduates at two regionally accredited universities were the subjects of this correlational study. Data collected covered a four-year period from May of 1988 to August of 1991 and were composed of 58 males, 23 females, and 18 not designated. The fact that all subjects were graduates indicated academic success as defined in Chapter 1. The students were selected without bias to extraneous variables, such as age, gender, race, and so forth. The resulting sample should be representative of Tennessee college graduates at like institutions and homogeneous to physical education teacher education graduates due to general reciprocal agreements among teacher education programs.

The following information was provided by the computer services department and records office of each university: final college grade point average, final high school grade point average, entering ACT test scores, and gender. These data were confidential and used only for the purpose of this study.

Description of the Techniques to
Test Hypotheses

This study was to ascertain if there was a correlation between criterion variables for the purpose of predicting academic success in physical education teacher education preparation programs. Pearson product moment correlation was used to determine if a significant relationship existed between final college grade point averages and high school grade point averages (hypothesis 1) and entering ACT scores (hypothesis 2). A dependent t-test was used to ascertain if there was a significant difference between male and female academic performance (hypotheses 3 and 4). A simple analysis of variance (ANOVA) was used to compare the difference between graduating classes in hypothesis 5. If it was determined that a correlation existed in hypotheses 1 and 2, multiple regression was utilized for prediction purposes.

Pearson product moment correlation was selected because each subject had two scores, the dependent variable (final college grade point average) and the independent variable (final high school grade point average) in hypothesis 1 and entering ACT scores and final college grade point average in hypothesis 2. There were 34 subjects in hypothesis 1 and 92 subjects in hypothesis 2.

A dependent t-test infers a relationship between two groups. The relationship of the two groups (male and

female) in hypothesis 3 was final high school and college grade point averages. Male and female entering ACT scores and final college grade point averages were investigated in hypothesis 4. Hypotheses 3 and 4 attempted to determine if there was a significant difference in academic performance based on gender as the variable. There were 22 male and 8 female samples in hypothesis 3. Hypothesis 4 had 58 males and 23 females in the sample.

Simple ANOVA was used to evaluate the four graduating classes by the same independent variable (final college grade point average) to determine if a significant difference existed. Hypothesis 5 contained 99 total subjects.

Multiple regression was used to test the dependent variable (academic success as defined by final college grade point average of graduates) and three predictor variables (final high school grade point average, entering ACT scores, and gender). The entire sample of 99 subjects was available to determine a statistical pattern for prediction purposes.

The disparity in sample size of the hypotheses was the result of comparing common variables of the subjects specific and inclusive to that hypothesis (i.e., there are 34 common students reporting high school grade point average and college grade point average in hypothesis 1). The data were collected and prepared for analyses at Middle Tennessee State University. The computer program used was the

Statistical Package for the Social Sciences (SPSS) on the Macintosh Apple IIe. All hypotheses were tested at the .05 level of significance.

CHAPTER 4

Analyses of Data

The purpose of this study was to determine if a relationship existed in objective data from college matriculation to graduation. The data investigated were gender, ACT scores, and high school grade point average in relation to the college grade point average of physical education teacher education graduates.

Procedures for data collection consisted of accessing the records of two Tennessee state universities for a four-year period. The data obtained did not uniformly identify all the areas investigated. The one area that was complete and constant was the college grade point average (GPA) of all 99 graduates. The five null hypotheses were statistically examined with the data specific, complete, and applicable to that problem. The results section of this chapter offers a complete account of each null hypothesis.

Pearson product moment correlation, dependent t-test, analysis of variance, and multiple regression were utilized to determine relationships within and between data or groups. The null hypotheses were evaluated at the .05 level of significance.

Results

The results of the data from the five null hypotheses are followed by analysis from the multiple regression technique.

Hypothesis 1

There will be no significant relationship between final high school grade point average and final college grade point average.

Results indicated a significant relationship at the .05 level between these two groups of data (see Table 1). Therefore, the null hypothesis was rejected. The evaluation of the 34 subjects that had both scores common was inclusive to that group.

Table 1
Comparison of Final High School GPA and
Final College GPA

Variable	Mean	S.D.	S.E.	Regular coefficient
High school GPA	2.760	0.6484	0.1112	0.71638554
College GPA	2.822	0.4728	0.0811	0.38083860
Correlation coefficient 0.5223*				

*Significant at .05 level; df = 32.

Hypothesis 2

There will be no significant relationship between entering ACT scores and final college grade point average.

Pearson's r indicated a significant relationship at the .05 level (see Table 2) between entering ACT scores and final college grade point averages. Thus, the null hypothesis was rejected. The 92 subjects had both ACT scores and college grade point average in common.

Table 2

Comparison of Entering ACT Scores and Final College GPA

Variable	Mean	S.D.	S.E.	Regular coefficient
ACT	18.446	3.3029	0.3444	3.88754416
College GPA	2.74	0.4241	0.0442	0.06409737
Correlation coefficient .04992*				

*Significant at .05 level; df = 90.

Hypothesis 3

There will be no significant difference between male final high school grade point averages and final college grade point averages and female final high school grade point averages and final college grade point averages.

The dependent t-test did not find a significant relationship at the .05 level between the difference of the means of male grade point averages and female grade point averages (see Table 3). Therefore, there was no significant difference between the two groups, and the null hypothesis was accepted.

Table 3

Comparison of Male High School GPAs and College GPAs
to Female High School GPAs and College GPAs

	Male	Female	Difference
Mean	2.791	3.111	0.320
S.D.	0.0062	0.0516	0.0453
S.E.	0.00440	0.03651	0.0320
t-value $t(1) = 9.99998, p > .05$			9.99998

The dependent t-test shows the near-identical grade point averages of the 22 males (see Table 4). And to a greater extent, but still not significantly different, Table 5 indicates the grade point averages of the eight females. Data reveal not only a relationship between the two groups, but a relationship within the two groups. Pearson's r calculated a near perfect 0.9778 correlation.

Table 4

Comparison of Male High School GPAs and College GPAs

	High school GPA	College GPA	Difference
Mean	2.786	2.795	0.009
S.D.	0.4522	0.3619	0.3943
S.E.	0.09640	0.07716	0.08407
t-value $t(21) = 0.10489, p > .05$			0.10489

Table 5

Comparison of Female High School GPAs and College GPAs

	High school GPA	College GPA	Difference
Mean	3.074	3.147	0.074
S.D.	0.4962	0.5120	0.3211
S.E.	0.17542	0.18102	0.11352
t-value $t(7) = 0.64856, p > .05$			0.64856

Hypothesis 4

There will be no significant difference between male entering ACT scores and final college grade point averages

and female entering ACT scores and final college grade point averages.

Results indicate no significant relationship at the .05 significance level in the difference between males and females of ACT scores and college grade point averages (see Table 6). Therefore, the null hypothesis was accepted.

Table 6

Comparison of Male ACT Scores and College GPAs
to Female ACT Scores and College GPAs

	ACT	College GPA	Difference
Mean	18.319	2.777	-15.542
S.D.	0.4511	0.1146	0.5667
S.E.	0.31900	0.08100	0.40002
t-value			-38.85290
$\underline{t}(1) = -38.85290, p > .05.$			

Comparing like variables by use of the dependent t-test established no significant difference at the .05 level among males (see Table 7) or females (see Table 8). Perusal of the statistics revealed that males entered college with a higher ACT score average than females and exited college with a lower final grade point average.

Table 7
Comparison of Male ACT Scores and College GPAs

	ACT	College GPA	Difference
Mean	18.638	2.696	-15.941
S.D.	3.4727	0.3776	3.2969
S.E.	0.45599	0.04958	0.43290
t-value $t(57) = -36.82455, p > .05.$			-36.82455

Table 8
Comparison of Female ACT Scores and College GPAs

	ACT	College GPA	Difference
Mean	18.0	2.858	-15.142
S.D.	3.1189	0.4812	2.8376
S.E.	0.65033	0.10033	0.59167
t-value $t(22) = -25.59212, p > .05.$			-25.59212

Hypothesis 5

There will be no significant difference in final college grade point averages of the four graduating classes.

The analysis of variance (ANOVA) determined that there was no significant difference between the four graduating classes at the .05 level of significance (see Table 9). As a result, the null hypothesis was accepted. A post-hoc comparison by the Scheffe' method confirmed no significant difference at the .05 level within the four graduating classes.

Multiple Regression

Multiple regression determined the existence of an interesting paradox when employed as a predictor of college success. Scores factored as predictor variables contributed to an overall indicator of predictability. There was no significant difference between predictor variables (see Table 10). Neither male nor female ACT scores or high school grade point averages were as reliable in predicting college success as the two combined. And when backtracking individual subjects through the multiple regression procedure, the investigator found the four predictor group scores higher than any individual score. The implication is that the predictor variables (gender, high school grade point average, and entering ACT scores) can generally be applied to predict college success more accurately than a specific individual application.

Cross-validation with the top 50 and lower 50 of the total 99 subjects, regardless of gender, substantiates predicted college success according to ACT scores and high

Table 9
Comparison of College GPAs of Four Graduating Classes

Group	Cases	Mean	S.D.	S.E.	
1	15	2.686	0.4456	0.11504	
2	30	2.730	0.4020	0.07340	
3	27	2.742	0.4352	0.08376	
4	27	2.745	0.4363	0.08397	
Total	99	2.731	0.4211	0.04232	
ANOVA summary		Sum/Sq.	DF	Mean sq.	F ratio
Between groups		0.04	3	0.0127	0.0695
Within groups		17.34	95	0.1825	
Total		17.38	98		
$F(3, 95) = 0.0695, p < .05.$					

school grade point averages. Multiple regression confirmed the findings of the first four hypotheses of this study.

Table 10

Multiple Regression with Male and Female ACT Scores
and High School GPAs Compared with College GPAs

$$b = 6.01$$

$$m1 = +1.29$$

$$m2 = -.589$$

$$m3 = +5[-03$$

$$m4 = -.313$$

$$Y = 6.01 + 1.29 X1 - .589 X2 + 5[-03 X3 - .313 X4$$

$$\text{Multiple coefficient of determination (R-sq.)} = .962424$$

$$\text{Adjusted R-sq.} = .912323$$

$$\text{Standard error of estimate} = .113035$$

CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

The purpose of this study was to determine if a relationship existed between high school indicators of success and college performance of physical education graduates. Data for 99 students from two state universities in Tennessee, covering a four-year period, were surveyed. Objective data commonly collected by colleges were compared with college indicators of success. Gender, final high school grade point averages, and ACT scores were compared with the final college grade point averages of physical education teacher education graduates.

The data were collected and prepared for computer analysis for the Statistical Package for the Social Sciences (SPSS) on the Macintosh IIe. Pearson product moment correlation, the dependent t-test, analysis of variance, and multiple regression were used to determine correlation between and within groups. These groups were based on gender and graduating class. The predictor variables were high school grade point average and ACT scores compared with the dependent variable of college grade point average. All 99 subjects examined were graduates.

Results of the study revealed a significant relationship between high school grade point average and college grade point average, regardless of gender. ACT scores were also a significant indicator of college success, regardless of gender. Males entered college with higher ACT scores (18.638 to 18.0) and lower grade point averages (2.786 to 3.074) than females. There was no significant difference between male and female performance when high school grade point averages or ACT scores and college grade point averages were compared. There was no significant difference between the four graduating classes (less than one-tenth of a percent separated any class). Multiple regression revealed no significant difference between gender, high school grade point averages, or ACT scores as predictors of college success. Groups were more significant than individuals as predictors of college success.

Findings of this study compare favorably with the results of other studies. Merante (1983), Weitzman (1982), and Wishart (1990) offered a combination of high school indicators as predictive measures of college success. The multiple regression analysis of this study confirmed that any one variable was not as strong as two variables when predicting college success. Tanner (1986), Bistreich (1981), Jensen (1989), and Stronck (1979) substantiate this study's claim that pre-admission history is a significant indicator of college success. Cobb (1984) reported higher

scores and a perceived increase in quality due to selective admissions. The graduates of this study received college grades in direct relation to the student's academic history.

Conclusions

Advisors of physical education teacher preparation students should utilize pre-admission academic history as an indicator of college success. Students' high school grade point averages and ACT scores were in direct correlation with college grade point averages. This study does not subscribe final college grade point average as the level of future potential. However, it should be noted that many teacher education programs require a higher grade point average than 2.0 as an exit requirement and graduate schools use undergraduate grade point average as one indicator of potential success. Since all the subjects were graduates, persistence and retention were common factors.

Females should be recruited into physical education preparation programs. This study revealed only 29 percent of the graduates to be women. Although there was no gender difference in grade fluctuations, females entered and exited college with higher grade point averages. This occurred in spite of slightly lower ACT scores compared to males.

Faculty awarded grades consistent with pre-admission academic histories. This was noted during multiple regression when ranking the 99 subjects for cross-validation. Gender or year of graduating class was not

statistically a factor in grading. The grade point averages of classes were remarkably similar.

Recommendations

The area of objective pre-admission data for advisement purposes and program entrance requirements is important to physical education teacher preparation. The following suggestions are offered for further study:

1. A similar study on a regional and/or national basis is needed to substantiate or refute the results of this study. The results of this study may be specific to the state of Tennessee.

2. Research is needed to identify more specific indicators of college success. These indicators should be generic to most high school programs (i.e., specific courses taken in areas like science, anatomy, speech, writing, Scholastic Aptitude Test scores, and percentile rank).

3. Other groups (i.e., Hispanic, Afro-American, Asian, and age) need to be investigated to identify patterns or trends between or among groups. This information could assist in identifying areas for remedial purposes and to specify shortages.

4. A study is needed to ascertain if there is a correlation between college indicators of success and criteria indicating teaching success.

APPENDICES

APPENDIX A
DECLARATION OF CONFIDENTIALITY

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DECLARATION OF CONFIDENTIALITY

To: Head of Departments Supplying Computer Information

From: Glen Reeder (Major Professor)

Re: Rick Chesterman Dissertation Data

Date: September 19, 1991

In regard to the communication concerning Rick Chesterman's dissertation data, students will not be identified in any way.

APPENDIX B
DISSERTATION DATA LISTED BY CLASS

APPENDIX B
DISSERTATION DATA LISTED BY CLASS

Fall 1987 through August 1988

Gender	College GPA	High School GPA	ACT Score
Male	2.598	-	21
	3.283	-	28
	2.961	3.450	21
	2.000	-	14
	2.500	-	17
	2.463	2.500	21
	2.601	-	18
Female	2.497	2.520	21
	2.785	-	17
	3.074	-	16
	2.424	2.490	14
Unidentified	2.260	-	-
	2.440	-	19
	3.810	-	19
	2.600	-	-

Fall 1988 through August 1989

Gender	College GPA	High School GPA	ACT Score
Male	2.656	-	15
	2.896	-	24
	2.386	2.600	17
	2.439	-	16
	2.421	-	17
	2.549	-	18
	2.200	-	19
	2.937	-	19
	2.144	-	13
	2.520	-	14
	2.640	3.050	20
	2.501	-	16
	2.509	3.240	14
	2.853	-	18
	3.531	3.260	25
	3.051	-	21
	2.302	-	17
	2.741	-	17
Female	2.993	-	15
	3.346	2.760	20
	3.409	-	17
	2.615	-	17

Fall 1988 through August 1989 (continued)

Gender	College GPA	High School GPA	ACT Score
Unidentified	2.320	2.780	16
	3.540	-	21
	2.450	-	-
	2.560	2.000	16
	3.410	-	-
	2.720	-	-
	2.970	-	21
	2.300	2.850	14

Fall 1989 through August 1990

Gender	College GPA	High School GPA	ACT Score
Male	2.588	2.250	17
	2.712	-	15
	2.560	-	15
	2.644	-	19
	2.838	2.660	18
	2.118	-	19
	3.031	3.400	20
	3.144	3.020	19
	3.113	2.050	15
	2.530	-	19
	3.068	3.300	20
	2.338	2.620	20
	2.730	-	26
	2.833	-	17
	2.225	-	14
	3.365	-	19
	3.035	2.980	17
Female	2.718	-	15
	2.385	-	15
	2.515	-	21
	2.172	-	14
	3.673	3.840	22

Fall 1989 through August 1990 (continued)

Gender	College GPA	High School GPA	ACT Score
Female	2.798	-	17
	3.822	3.620	27
Unidentified	2.290	-	21
	2.510	-	14
	2.280	-	-

Fall 1990 through August 1991

Gender	College GPA	High School GPA	ACT Score
Male	2.436	-	13
	1.865	1.800	19
	2.262	-	17
	3.918	-	27
	2.697	-	22
	2.657	2.730	21
	3.079	3.070	19
	2.682	2.050	18
	2.474	-	13
	3.111	2.730	17
	3.034	-	19
	2.844	2.950	24
	2.636	2.820	18
	2.965	2.760	18
	2.394	-	22
2.786	-	25	
Female	2.242	-	17
	2.408	-	17
	3.052	-	16
	2.124	-	16
	3.261	-	21
	3.417	2.930	20

Fall 1990 through August 1991 (continued)

Gender	College GPA	High School GPA	ACT Score
Female	2.971	3.090	20
	3.029	3.340	19
Unidentified	2.580	-	-
	2.800	-	22
	2.380	2.440	19

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