



12-2009

# Teacher Education Admission Requirements and Student Teacher Evaluations: Relationships Among Grade Point Average, Praxis I Scores, and Student Teacher Final Evaluations

Alan C. Olson

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TEACHER EDUCATION ADMISSION REQUIREMENTS AND STUDENT  
TEACHER EVALUATIONS: RELATIONSHIPS AMONG GRADE  
POINT AVERAGE, PRAXIS I SCORES, AND STUDENT  
TEACHER FINAL EVALUATIONS

by

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Bachelor of Science, Valley City State University, 1984  
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A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Grand Forks, North Dakota  
December  
2009

This dissertation, submitted by Alan C. Olson in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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*Richard J. Hardy*

This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

*Joseph D. Benoit*

Dean of the Graduate School

*December 8, 2009*

Date


PERMISSION

Title: Teacher Education Admission Requirements and Student Teacher Evaluations: Relationships Among Grade Point Average, Praxis I Scores, and Student Teacher Final Evaluations

Department: Teaching and Learning

Degree: Doctor of Philosophy

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## TABLE OF CONTENTS

LIST OF TABLES .....	viii
ACKNOWLEDGMENTS .....	ix
ABSTRACT.....	xi
CHAPTER	
I.    INTRODUCTION .....	1
Background of the Study .....	1
Statement of the Problem.....	7
Statement of Purpose .....	7
Research Questions.....	8
Significance of the Study.....	8
Operational Definitions.....	9
Abbreviations.....	13
Assumptions.....	14
Delimitations of the Study .....	14
Organization of the Study .....	15
II.   REVIEW OF THE LITERATURE .....	16
Selective Admissions.....	16
GPA and Praxis I in Teacher Licensure.....	20
NCATE and INTASC .....	26

	Student Teacher Evaluations and INTASC Standards.....	28
	Reliability, Validity, and Predictability .....	29
	Cautious Considerations .....	31
	Summary .....	33
III.	METHODS AND PROCEDURES.....	36
	Introduction.....	36
	Design .....	36
	Setting .....	37
	Selection of Sample .....	38
	Administration and Application of Instruments .....	39
	Collection of Data.....	45
	Data Analysis.....	46
IV.	RESULTS .....	50
	Introduction.....	50
	Purpose of the Study .....	50
	Description of the Sample.....	50
	Description of the Variables .....	51
	Results for Research Question 1 .....	60
	Summary for Research Question 1 .....	69
	Results for Research Question 2 .....	71
	Summary for Research Question 2 .....	74
	Results for Research Question 3 .....	75

Summary for Research Question 3 .....	75
Summary of Chapter IV Results .....	77
V. CONCLUSIONS AND RECOMMENDATIONS .....	78
Summary .....	78
Summary of Findings.....	79
Conclusions.....	80
Limitations .....	86
Discussion .....	86
Recommendations.....	88
APPENDICES .....	91
Appendix A. Student Teacher Final Evaluation Form.....	93
Appendix B. INTASC Standards.....	94
Appendix C. Student Teacher Attributes Rated by Cooperating Teachers .....	94
Appendix D. Praxis I Series: Test at a Glance.....	95
REFERENCES .....	96

## LIST OF TABLES

Table	Page
1. Test Score Results of All Examinees Tested by the Educational Testing Service Between September 1, 2005, and June 30, 2008 .....	24
2. Demographic Information on the Student Teacher Placements for Elementary and Secondary Majors .....	51
3. Minimum and Maximum Scores, Means, and Standard Deviations for Cumulative GPA and Praxis I Test Scores of Student Teachers (N=599) .....	52
4. Comparison of VCSU Praxis I Median Test Scores With Data for All ETS Test-takers.....	53
5. Minimum and Maximums, Means, and Standard Deviations for Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles (N=599) .....	55
6. Means, Standard Deviations, and Minimum and Maximum for Cooperating Teacher Ratings on Student Teacher Evaluations Not Based on the INTASC Principles (N=599).....	58
7. Student Teacher Mean Scores for Elementary Education Student Teachers (N=359) and Secondary Education Student Teachers (N=240) .....	60
8. Results of Linear Regression for GPA and Cooperating Teacher Ratings on Student Teacher Final Evaluations Based on INTASC Principles .....	61
9. Stepwise Regression for GPA and Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles .....	62
10. Results of Linear Regression for Praxis I Reading Test Scores and Cooperating Teacher Ratings on Student Teacher Final Evaluations Based on INTASC Principles .....	64
11. Stepwise Regression for Praxis I Reading Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Which Are Based on the INTASC Principles .....	65



12.	Results of Linear Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Final Evaluations Based on INTASC Principles .....	67
13.	Results of Stepwise Forward Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles.....	68
14.	Linear Regression Results for GPA and Praxis I Test Scores in Mathematics, Reading, and Writing .....	69
15.	Stepwise Forward Regression for GPA and Praxis I Test Scores in Mathematics, Reading, and Writing .....	70
16.	Linear Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Not Based on the INTASC Principles .....	73
17.	Stepwise Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles .....	74
18.	Results of Linear Regression for GPA Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations not Based on the INTASC Principles .....	75
19.	Stepwise Regression for GPA and Cooperating Teacher Ratings on Student Teacher Evaluations Not Based on the INTASC Principles .....	76

## ACKNOWLEDGMENTS

The accomplishment of completing my program of study and dissertation will be shared with others who helped me achieve this goal. In the process of earning my degree, I have met new friends, colleagues, and learned from several outstanding educators.

My first priority is to share my degree with my family. I want to thank Isaac, Jacob, Clarissa, and my wife, Trisa, for their encouragement and patience with me. My education has taken away family time, and my favorite memories have come when my family is together. Trisa's faith and friendship have made me better a person and have kept me going. I appreciate my sister Deb, brother-in-law Bill, and my brother Steve for encouraging me and housing me when I combined my doctoral coursework with visits to see Mom. I am also grateful to my youngest brother Randy for his continual support. I want to thank my friend Brent who often encouraged me. A final family thank you message is shared with my best teachers, my parents, Alvin and MaryAnn Olson.

At Valley City State University, I want to thank Dr. Larry Grooters for getting me started and Dr. Gary Thompson for seeing me through to the finish. I sincerely appreciate my Valley City colleagues and friends who have encouraged me to complete my degree.

I respect my committee members for their expertise and appreciate their personal concern for me. Dr. Holdman was an outstanding encourager and motivator for me. Dr. Landry helped me better understand my statistics and focus my energy. Dr. Olson provided tremendous experience as well as support and encouragement. Dr. Chalmers

was a positive committee member and a model teacher to learn from. Dr. Gershman and Dr. Shaeffer were among my best supporters and teachers at UND as well. I want to thank Sandy Krom and Sharon Fields for their expertise in formatting and editing.

When I consider the quality of my professors and wealth of knowledge they shared with me, I sincerely appreciate my University of North Dakota education. I have put much of what I learned into practice. I am a better teacher today because of my educational experiences at UND and I am grateful.

My final word of thanks is for all of the students who had the “right stuff” and a desire to teach, yet were challenged by a portion of the Praxis I Series. For those candidates who studied hard, completed extra work and practice tests, perhaps even sought tutoring in order to meet the qualifying scores necessary to realize a dream by becoming an educator, I appreciate their determination. Teachers need content knowledge and fundamental skill in Reading, Writing, and Mathematics. My concern has been that a standardized test score in one area might eliminate a teacher candidate who does not test well, despite academic fundamentals combined with interpersonal and dispositional skills – a teacher who could make a difference for young people. I have met candidates with teaching talents who wrestle with standardized tests. Those students have been my motivation for wanting to learn more about the relationship of admission requirements and successful student teaching.

## ABSTRACT

Institutions of higher education attempt to select and prepare the finest K-12 teachers possible. National, state, and local influences also search for the best and brightest teacher candidates to become K-12 teachers. The result has been increased accountability measures to ensure quality. The selection process for admission to teacher education programs frequently involves quantitative measures such as cumulative grade point average (GPA) and Praxis I test qualifying scores for candidates to gain program admission, student teach, and ultimately become licensed educators.

The purpose of this study was to investigate if significant relationships existed among quantitative measures such as cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations based on the Interstate New Teacher Assessment and Support Consortium (INTASC) principles. Learning about these relationships has potential benefits for making informed decisions about establishing teacher education program admission standards, modifying education course curriculum, and advising preservice teacher candidates.

Significant relationships existed among the cumulative GPAs and cooperating teacher ratings of student teachers' practicum efforts involving two INTASC related principles, the "Ability to Plan and Organize Lessons for Learning," INTASC 7, and "Written Expression," connected with INTASC 6. Cumulative GPAs also had significant relationships with two other non-INTASC related student teacher attributes evaluated by

cooperating teachers, “General Promise as a Teacher” and “Responsibility/ Dependability.” Analysis of the data also indicated significant relationships existed between the cumulative GPAs of student teachers and all three sections of the Praxis I series – Mathematics, Reading, and Writing.

Praxis I Reading test scores had positive, significant relationships with two student teaching attributes related to Communication, INTASC 6, “Written Expression” and “Oral Expression and Effectiveness of Speech.” Praxis I Writing test scores had a significant relationship with the cooperating teachers’ final evaluations of student teachers in the area of “Organization and Classroom Management,” related to INTASC 5, as well as “Written Expression” connected to INTASC 6, and a non-INTASC related attribute entitled “Tact and Judgment.”

The study of admission requirements and student teaching success is important in determining the value of specific admission requirements, student teacher assessments, and to search for potential predictors of candidate success.

## CHAPTER I

### INTRODUCTION

#### Background of the Study

“Definitions of what teachers should know and be able to do have changed over time as society’s values have changed, and they will continue to do so” (Mitchell, Robinson, Plake, & Knowles, 2001, p. 32). Children in K-12 schools need and deserve quality teachers. The expectations in the preparation and licensure of future quality teachers are varied, complex, and dynamic at national, state, and institutional levels.

Many teacher candidates enter the education field with hopes of making a difference in the lives of young people. Teacher candidates at universities, like the children in K-12 classrooms, are assessed early and often. Candidates seek admission to a teacher education program and advance toward a student teaching practicum before finally completing the process by gaining state licensure as an educator.

While there is almost universal agreement that student success is predicated on effective teachers, there are intense debates about the quality of those who teach and how best to produce an effective teaching force. These debates are having significant impact on policy decisions throughout the country at local, state, and federal levels. (Wenglinsky, 2000, p. 2)

The concept of producing an effective teaching force is often fueled and debated on the national front, reacted to or decided upon at the state level, and most frequently the application of the expectations occurs at the local level in teacher education institutions. Assessments are administered at each level for the purposes of public accountability, and

most of all to provide the impetus for data-driven decision-making that will lead to improvement of teacher preparation and student learning.

“Lack of school student achievement is often blamed on incompetent teachers, with teacher education programs ultimately being held responsible for failing to prepare teacher candidates to meet the diverse needs of students in today’s education system” (Goodman, Arbona, & de Rameriz, 2008, p. 24). When teachers are referred to as “incompetent” and teacher education programs are held responsible, communication and reflection for improvement are necessary. Assessment data may support program trends or strengths not accurately depicted by a recent isolated incident that has drawn attention. Assessment data may need to be analyzed from a different perspective or new direction, and appropriate assessments may need to be developed or sought out to ensure the program is developing the teacher quality it is seeking in each candidate.

The preparation of preservice teachers seeking to become quality teachers has been influenced by significant reports and events at the national level. Nettles (as cited in Gitomer, 2007) wrote,

From *A Nation at Risk* in 1983, to the National Education Summit in 1989, to the formation of the National Commission on Teaching and America’s Future in 1994, and the No Child Left Behind Act in 2001, teacher quality has remained squarely in the middle of national and state education agendas. (p. 2)

Educators strive to be quality teachers for the sake of their students, but also to become highly qualified professionals for the sake of their school and their own teacher licensure. “To be highly qualified, according to NCLBA, teachers must meet three general requirements: have a bachelor’s degree, be licensed or certified by the state, and

demonstrate *subject matter competence* in each academic subject they teach”

(Educational Testing Service [ETS], 2004, p. 2).

Teacher education institutions have some independence and autonomy in establishing their conceptual framework, but teacher education programs are accountable to pass reviews directed by state licensing boards. Many universities and colleges with teacher education units and programs are accredited by national organizations like the National Council for Accreditation of Teacher Education (NCATE).

NCATE provides another example of a national influence on teacher education programs in individual states and institutions. NCATE represents the “national accrediting body recognized by the U.S. Department of Education that determines which schools, colleges, and departments of education meet rigorous national standards in preparing teachers and other school specialists for the classroom” (National Council for Accreditation of Teacher Education [NCATE], 2009, p. 1). According to NCATE (2009), “accredited schools produce over **two-thirds of the nation’s new teacher graduates**” (p. 4) and “**thirty-nine states have adopted or adapted NCATE unit standards as their own and apply them** to all institutions for purposes of state approval” (NCATE, 2009, p. 5).

NCATE incorporates standards from the Interstate New Teacher Assessment and Support Consortium (INTASC) that address expectations for teacher candidates: knowledge of subject matter and student learning; skill and dispositions in working with diverse learners; application of instructional strategies; creation of a positive learning environment; skill in communication, planning instruction, assessing student learning; reflection on learning and professional development; and ethics and skill in collaboration



and relationships. Candidate development of these INTASC standards is often assessed in multiple facets such as portfolios and/or during student teaching practicum experiences.

The INTASC standards provide a nationally recognized concept of effective qualities for new teachers to possess. INTASC's role is one of consensus building among the states, and not decision making. All authority for state policy resides within each state's governance structure. The INTASC standards are "model" standards and intended to be a RESOURCE that all states can use to develop their own state standards. (Council of Chief State School Officers [CCSSO], 2009a, para. 1)

Teacher education programs make decisions with respect to selecting and preparing teacher education candidates that are influenced both nationally and at the state level. Teacher education programs typically set their admissions standards at or above the state passing scores. Not all candidates who desire to teach meet the passing score criteria. ETS research indicates that during the timeframe from 2002-2005, "80.5 percent" (Gitomer, 2007, p. 17) of all Praxis I test-takers met the state passing scores.

The 10th Amendment of the United States Constitution reads "the powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." The 10th Amendment permits states to retain their right to determine their education standards, licensure requirements, and practices.

The primary goal of licensing beginning teachers is to ensure that all students have competent teachers. Teacher licensing is under the authority of individual states. There are 51 unique licensure systems in the United States; they share some commonalities, however. As in other professions, teacher licensing relies on more than tests to judge whether candidates have the knowledge, skills, abilities, and dispositions to practice responsibly. Teacher candidates generally must fulfill education requirements, successfully complete practice teaching, and receive the recommendations of their preparing institutions. These requirements help ensure that a broad range of competencies are considered in licensing new teachers. (Mitchell et al., 2001, p. 165)

States may support, reject, compromise, or comply with federal expectations, such as the 2001 No Child Left Behind Act (NCLBA) requirements, in different ways and at unique levels. In addition to having licensed teachers earn a bachelor's degree, the expectations of the 2001 NCLBA require teacher candidates to be licensed or certified by the state, and to demonstrate subject matter competence in each academic subject they teach. These expectations have led to increased assessment and accountability of teacher education for the individual states and also the institutions awarding licensure.

“Licensure is an important element to assure quality in the teaching workforce of each state” (ETS, 2004, p. 7). States have responded to federal expectations and public accountability demands by implementing their own state competency tests or by working with an organization like the Educational Testing Service (ETS) to provide evidence that teachers receiving licensure in their state have basic skills in reading, writing, and mathematics, as well as competency in their academic subject matter.

The Praxis Series assessments are used for teacher licensure and certification by state departments of education and other certification agencies. “The *Praxis I*® tests measure basic academic skills, and the *Praxis II*® tests measure general and subject-specific knowledge and teaching skills” (ETS, 2009b, para. 1). The *Praxis III*® Teacher Performance Assessments assess the skills of beginning teachers in classroom settings.

The Praxis Series provides institutional, state, and national data that are measurable for assessment and accountability. The Praxis I tests are synonymous with the title Pre-Professional Skills Test (PPST). The Praxis I tests or PPST include sections in reading, writing, and mathematics. The scores are meaningful to candidates in meeting teacher licensure requirements, as well as to teacher education programs regarding

accreditation and institutional expectations. The assessments may also be useful to help the candidates and academic advisors discover, or have reinforced, any weaknesses in the preservice teacher's fundamental academic knowledge or skills that may be addressed. At times, the scores emphasize a need for tutoring and may create a challenge for the candidate to continue in the program.

While researchers Duke and Duke (1990) found the ACT to be a reliable predictor for the Praxis I, predictive relationships between the Praxis I and student teacher evaluations appear to be insignificant. The Praxis I has been validated for its initial purpose, but its relationship to student teaching success remains unclear. Mikitovics and Crehan (2002) found "no predictive relationship between . . . [Praxis I] scores and student-teaching ratings, and a weak predictive relationship between . . . [Praxis I] scores and student undergraduate GPAs" (p. 215).

Teacher education programs require candidates to meet basic standards for admission and advancement to become a student teacher. This study was conducted to investigate if two commonly used admission requirements, cumulative GPAs and the Praxis I test scores, may serve as indicators of eventual student teaching success or potential difficulty in any INTASC related areas evaluated by cooperating teachers during student teaching.

The requirements selected are frequently utilized and acknowledged at the national, state, and institutional levels. The admission requirements examined in this study serve to ensure that candidates achieved adequate academic success at the college/university level and the candidates are proficient in fundamental academic skills such as reading, writing, and mathematics. These common entry level requirements were

analyzed to determine if meaningful relationships existed between GPA, Praxis I scores, and exit level; final evaluations conducted by cooperating teachers at the completion of the candidates' student teaching experience; and graduation from the teacher education program. The research data benefit candidates, advisors, and programs regarding predictive success or necessary remediation before candidates become student teachers.

#### Statement of the Problem

Teacher education requirements for admission are often impacted by state guidelines. According to Gitomer (2007), ETS research between the years 2002 and 2005 indicated that 80.5% of all Praxis I test-takers met the state passing scores; thus, not every candidate who considered majoring in education completed a degree in that academic area. It is in each candidate's best interest to be aware of potential challenges in a chosen field. This study focused on the investigation of relationships between two specific admission requirements, Praxis I scores and cumulative GPA, and their relationship to cooperating teacher final evaluation ratings of student teachers.

#### Statement of Purpose

The purpose of this study was to investigate what relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles. Learning about the relationship between admission requirements and student teacher evaluations has potential benefits in making informed decisions about setting teacher education program admission standards, modifying education course curriculum, advising preservice teacher candidates about additional support services to enhance basic skills, or potential coursework to increase the chances for success in the future.

## Research Questions

This study investigated common requirements many teacher education programs use to admit individual candidates. The primary research questions investigated in this study include:

1. What relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles?
2. Could Praxis I scores in Mathematics, Reading, and Writing predict ratings on final student teacher evaluations not based directly on INTASC principles?
3. Could cumulative GPAs predict ratings on final student teacher evaluations not based directly on INTASC principles?

## Significance of the Study

The rationale for completing this research was to investigate existing teacher education program relationships between common entry level admission standards and exit level student teaching evaluations. This study has relevance as teacher education programs internally assess tendencies between candidate admission requirements and possible weaknesses or strengths that may be predicted before a candidate begins student teaching. The results may invite discussion related to the modification of the current standards for admission to teacher education, increased analysis and application of admission requirement results for candidate advisement and potential remediation, the establishment of different evaluation items for student teaching, the consideration of curricular enhancement, or the addition of a new course in the program.

## Operational Definitions

The terms admission requirements, candidate, central assessment system, cooperating teacher, Education Standards and Practices Board, Educational Testing Service, grade point average, Interstate New Teacher Assessment and Support Consortium, National Council for Accreditation of Teacher Education, qualifying score, Pre-Professional Skills Test, preservice teacher, teacher education program, and student teacher are defined for the purposes of this study.

*Admission Requirements:* Admission requirements are the standards that preservice teacher candidates must attain for acceptance and progression in a teacher education program. The admission requirements for participants pertaining to this study include a minimum GPA of 2.50 and obtainment of the following Praxis I scores: Reading (173), Writing (173), and Mathematics (170). A candidate may also meet the Praxis I admission requirement by reaching two of the three qualifying scores and obtaining a composite score of 516.

*Candidate:* A candidate in this study refers to a preservice teacher who aspires to earn an education degree and become a licensed educator after graduation. The teacher candidates in this study typically begin the process of admission to teacher education in the fall of his/her sophomore or, at times, junior year. The Introduction to Education course marks the beginning of the teacher education program and candidates may be referred to as such until he/she completes a degree in teacher education.

*Central Assessment System:* Candidate data are collected, aggregated, summarized, and analyzed to monitor and improve candidate progress as well as guide the teacher education program's decisions to enhance teacher education preparation. The

centralized assessment system is the storehouse for the data represented through multiple indicators gathered at key points in the program to ensure a quality teacher education program and high degree of proficiency in candidates and graduates.

*Cooperating Teacher:* The cooperating teacher is the K-12 educator hosting the student teacher. In addition to being a model and mentor, the cooperating teacher completes the student teacher's final evaluation. The student teacher scores used in this study were aggregated from final evaluations completed by cooperating teachers.

*Education Standards and Practices Board:* The Education Standards and Practices Board (ESPB) is "appointed by the Governor, is comprised of educators, administrators, school board members, teacher educators, and is committed to assuring highly qualified educators for ALL North Dakota students" (Education Standards and Practices Board [ESPB], 2009b, para. 2). The ESPB is responsible for licensure of teachers and "approval of teacher education programs for North Dakota's colleges and universities, professional staff development, and monitoring the profession through the educator's code of ethics and professional practices" (ESPB, 2009b, para. 1). The ESPB establishes state qualifying scores for grade point average, standardized tests like the Praxis I, as well as promotes university involvement in the NCATE accreditation process and the application of INTASC standards. The North Dakota ESPB is among "thirty-nine states" (NCATE, 2009, p. 5) which have adopted the NCATE unit standards.

*Educational Testing Service:* The Educational Testing Service (ETS) is a nonprofit organization founded in 1947 that currently scores more than 50 million tests annually. Among the tests administered by the ETS is the Praxis I Series of three basic academic skills tests designed for preservice teachers. The Praxis I Series is synonymous

with the Pre-Professional Skills Test (PPST) and involves three individual parts: Reading, Writing, and Mathematics.

*Grade Point Average:* Valley City State University (VCSU) uses a four-point scale. Each “A” is worth four points, “B” three points, “C” two points, “D” one point, and the grade of “F” is worth zero points. Each letter grade is multiplied by the number of course credits to determine the honor points awarded. The summation of a candidate’s honor points is divided by the earned credits in all graded courses to establish the candidate’s cumulative grade point average (GPA). VCSU requires a GPA of 2.50 for admission and retention in the Teacher Education program. The state of North Dakota ESPB also requires a cumulative GPA of 2.50 for teacher licensure.

*Interstate New Teacher Assessment and Support Consortium:* The Interstate New Teacher Assessment and Support Consortium (INTASC) was formed in 1987 as a “consortium of state education agencies and national educational organizations dedicated to the reform of . . . [preparing], licensing, and on-going professional development of teachers” (CCSSO, 2009b, para. 1). The INTASC standards (Appendix B) addressed by the student teacher evaluation forms are recognized by NCATE, North Dakota’s ESPB, and Valley City State University (VCSU) as areas essential for effective teaching.

*National Council for Accreditation of Teacher Education:* The National Council for Accreditation of Teacher Education (NCATE) is a “national accrediting body recognized by the U.S. Department of Education that determines which schools, colleges, and departments of education meet rigorous national standards in preparing teachers and other school specialists for the classroom” (NCATE, 2009, para. 1). “NCATE accredited schools produce over **two-thirds of the nation’s new teacher graduates**” (NCATE,



2009, p. 4). VCSU has been accredited by NCATE since 1954 and VCSU met all six NCATE standards for accreditation in the fall of 2008.

*Qualifying Score:* The term “qualifying score” in this study refers to the minimal expectation a candidate must meet or exceed for admittance and advancement in the program. The qualifying score a candidate must meet for a cumulative grade point average (GPA) at VCSU and in the state of North Dakota for licensure is 2.50. VCSU and the state of North Dakota licensure qualifying scores for the Praxis I are Mathematics (170), Reading (173), and Writing (173). “**Applicants must meet individual qualifying scores in Math, Reading or Writing, or meet qualifying scores on 2 of the tests and have a composite score of 516**” (ESPB, 2009a, para. 2).

*Praxis I or Pre-Professional Skills Test:* Praxis I tests are also referred to as the Pre-Professional Skills Test (PPST). The Praxis Series of assessments was developed and is administered by the Educational Testing Service (ETS).

The Praxis Series assessments are used for teacher licensure and certification by state departments of education and other certification agencies. “The *Praxis I*® tests measure basic academic skills, and the *Praxis II*® tests measure general and subject-specific knowledge and teaching skills” (ETS, 2009b, para. 1).

Since July 1, 2003, all applicants for initial licensure in North Dakota have been required to meet individual Praxis I qualifying scores in Mathematics (170), Reading (173), and Writing (173) “**or meet qualifying scores on 2 of the tests and have a composite score of 516**” (ESPB, 2009a, para. 2).

*Preservice Teacher:* For the purpose of this study, a preservice teacher refers to a candidate in the teacher education program who has yet to begin student teaching.

Typically, the preservice teacher is a sophomore, junior, or first semester senior.

*Teacher Education Program:* A teacher education program, as it relates to this study, represents the body that establishes the university's admission requirements regarding grade point average, the Praxis I qualifying scores, and the final evaluation attributes cooperating teachers rate on student teachers. The teacher education program is responsible for setting and administering the rules, standards, assessments, and curriculum that guide the acceptance and preparation of the preservice teacher candidates who aspire to become licensed teachers in the field of education.

*Student Teacher:* The student teacher is a final semester university student who has completed the specific subject content courses, methods courses, and professional education courses necessary to be assigned to a cooperating school by a teacher preparation institution to acquire practical teaching experience under the direction of one or more cooperating teacher(s) and a supervisor assigned by the university.

#### Abbreviations

For the purposes of this study, the following abbreviations will be used:

ETS	Educational Testing Service
ESPB	Education Standards and Practices Board
GPA	Grade Point Average
INTASC	Interstate New Teacher Assessment and Support Consortium
NCATE	National Council for Accreditation of Teacher Education
NCLBA	No Child Left Behind Act

PPST	Pre-Professional Skills Test
SPSS	Statistical Package for the Social Sciences
VCSU	Valley City State University

#### Assumptions

Cooperating teachers of student teachers receive an autobiography and list of courses from the teacher education program. The cooperating teachers are not provided any GPA or Praxis I score information involving his/her student teacher before the candidates begin the practicum. The final evaluations completed by cooperating teachers are assumed to be based solely on experiences working with the student teacher during the practicum experience.

#### Delimitations of the Study

This study did not investigate the vast multitude of potential admission requirements through which preservice teachers may be required to enter teacher education programs, the coursework, and other field experiences involved as candidates advance through the program; nor did this research analyze all the graduation requirements necessary to earn a teaching degree. The focus of this study was narrowed to two frequently used teacher education admission or entry level requirements, GPA and Praxis I, and one graduation or exit level requirement, student teaching final evaluations. The instrument used by cooperating teachers to evaluate student teachers consisted of 26 attributes. For the sake of this research having relevance beyond VCSU, this study analyzed the relationships of student teacher evaluations connected to the INTASC principles separately from the other student teacher attributes evaluated by cooperating teachers for the institution. VCSU also has content specific student teacher attributes

evaluated by cooperating teachers that relate to each academic major that were not analyzed for purposes in this study.

The admission requirements were not exclusive to the GPA in a candidate's content area, methods courses, field experiences, or any other components a teacher education program may employ to impact successful student teaching. Cumulative GPA was used because this study concentrated on admission level requirements frequently used in the decision-making process for candidates to enter the teacher education program and work toward an opportunity to student teach.

#### Organization of the Study

The relationships among GPA, Praxis I test scores, and student teacher final evaluations were investigated over the course of five chapters. The introductory background regarding the need for this study and problems that needed to be answered are provided in Chapter I. Chapter II is a review of literature and research on GPA, Praxis I scores, and student teacher evaluations. The research design and methodology used to conduct this study are described in Chapter III. The analysis of the data and findings from this study are presented in Chapter IV. Chapter V is a summary of the findings, conclusions, limitations, and recommendations connected with the study. The conclusion of the study includes the appendices and a list of references.

## CHAPTER II

### REVIEW OF THE LITERATURE

In this chapter, the literature is reviewed in six sections as it pertains to teacher education admission requirements and student teacher evaluations. The concept of selective admissions is discussed first. Second, GPA and Praxis I scores in teacher licensure are reviewed. Third, the influence of NCATE and INTASC principles is explored. Fourth, student teacher evaluations and INTASC principles are discussed. Fifth, research on the reliability, validity, and predictability of Praxis I scores and GPAs is investigated. Finally, cautious considerations are provided with respect to previous literature and the results of this study.

#### Selective Admissions

Colleges in the United States during the 1920s addressed admission requirement issues from a different perspective than teacher education programs in 2009; yet, striking resemblances and concerns exist. “Selective admissions” (Thelin, 2004, p. 197) in higher education have “the potential for both good and ill” (p. 197). The 1920s discussions produced the concept that if the admission requirements could “give priority to applicants with strong academic records and scholarly inclinations, then the approach favored merit. Unfortunately, there is no compelling evidence that selective procedures always rewarded talent” (p. 197).

Efforts to influence the selection of teacher education talent pools have been made at the national, state, and institutional levels. The demand for teacher quality and accountability permeates all aspects of society from federal legislation and national accrediting agencies, to state licensure requirements, college campuses, and teacher education programs, and finally to K-12 classrooms.

While there is almost universal agreement that student success is predicated on effective teachers, there are intense debates about the quality of those who teach and how best to produce an effective teaching force. These debates are having a significant impact on policy decisions throughout the country at local, state, and federal levels. (Wenglinsky, 2000, p. 2)

The pursuit of compelling evidence in selecting and predicting which teacher candidates will become the best educators is not new and continues to be important. The societal expectations of excellence and accountability that influence teacher preparation admissions are good if the process leads to identification of “the best and the brightest” (Blue, Grady, Toro, & Newell, 2002, p. 3) in the field. The selection process has symptoms of being ill when the requirements eliminate potential teacher candidates who may have the interpersonal skills and ability to teach what they know effectively to students.

Goodlad (1990) noted that, prior to the 1980s and early 1990s, “almost anyone could enter a teacher education program at almost any time” (as cited in Darling-Hammond & Sykes, 1999, pp. 198-199). Accountability in the field of education for students and teachers at the K-12 level as well as the institutions preparing teachers continues to draw increased attention. “The 1983 Commission on Excellence in Education Report, *A Nation at Risk*, the Holmes Group (1986) and the Carnegie Task Force (1986) raised important questions about teacher preparation” (Darling-Hammond

& Sykes, 1999, p. 90). The 2001 NCLBA and the emphasis of teacher education accreditation organizations such as NCATE have also influenced the increased assessment and accountability practices utilized by teacher education institutions and state agencies awarding licensure.

To raise their admission standards, thus increasing qualifications of students entering the field of education, most colleges of education accredited by the National Council for Accreditation of Teacher Education (NCATE) began to use cut scores on basic skills tests that assess reading, writing, and mathematics knowledge of applicants. (Mikitovics & Crehan, 2002, p. 215)

Various programs use the term “cut scores,” while other programs recognize the required standard as “qualifying scores.” The terminology may impact the interpretation of the purpose for developing standardized scores in the first place. Whether a person argues a “qualifying score” identifies a prospective teacher with the necessary skills to join the profession or a person considers a “cut score” a way to mark the elimination of candidates whose scores do not reach the desired expectation of a prospective teacher, the concept involves a minimal threshold limit for acceptance.

Public accountability is expected on the part of the individual student teacher becoming admitted to or graduating from the institution of higher education. “The primary purpose of teacher education [programs] is to cultivate the knowledge, skills, and values that will enable teachers to be highly effective in helping students to learn” (Darling-Hammond & Sykes, 1999, p. 12). The public expectation is that first year teachers have been tested academically and are ready to teach for student learning. “It is understood that universities will not recommend incompetent student teachers for licensure. If universities refuse to play their role . . . in a responsible fashion, then the prospects of public assurance are considerably dimmed” (Raths & Lyman, 2003, p. 209).

To meet the demands of public assurance, national legislation has influenced accrediting organizations and state licensure agencies to require teacher education programs to implement testing into admission and graduation requirements.

The challenge in establishing admission and testing requirements involves the concern that “there is no single agreed-upon definition of what competencies a beginning teacher should have” (Mitchell et al., 2001, p. 164). Teacher education programs assess teacher candidates’ academic coursework as well as their application of the knowledge, skills, and dispositions during practicum field experiences and student teaching. The candidate assessments utilized by teacher education programs are not limited to standardized tests.

Universities typically use multiple measures to determine candidate admission to a teacher education program “because a teacher’s work is complex, even a set of well-designed tests cannot measure all of the prerequisites of competent beginning teaching” (Mitchell et al., 2001, p. 165). Teacher education programs assess multiple criteria related to the knowledge, skills, and dispositions of their candidates whether their influence comes from education research and current trends in the field, the program’s response to its own data or past history and experiences, the teacher education programs’ conceptual framework and philosophical beliefs about education, or action taken to meet expectations of accrediting councils like NCATE.

An example of “Acceptable” practice identified by NCATE under Standard 2 for assessment reads “decisions about candidate performance are based on multiple assessments at admission into programs, appropriate transition points, and program completion” (NCATE, 2008, p. 25). When making decisions about the performance of



teacher candidates, education programs typically consider multiple assessments for admission, such as disposition evaluations from faculty members or cooperating teachers; self-assessments; writing samples; written faculty recommendations; advisor approvals; speech screenings; standardized test scores; interviews; student attitude surveys toward working with diverse learners; field experience evaluations; “3-5 minute [teaching] video[s]” (Denner, Salzman, & Newsome, 2001, p. 172); introductory portfolio reflections; minimum grade requirements for specific math, speech, or composition courses; and potentially other requirements.

“Surveys of teacher education programs have revealed formal applications, grade point averages, written recommendations, grades in required classes, and standardized test scores are the most commonly used admission criteria (e.g., Laman & Reeves, 1983; Peterson & Speaker, 1996)” (Denner et al., 2001, p. 165). The range of potential admission requirements in teacher education programs is considerable, but two commonly used measures include a candidate’s GPA and Praxis I scores. This study investigated relationships between cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations.

#### GPA and Praxis I in Teacher Licensure

Universities have autonomy to set their own teacher education admission requirements, but those decisions are impacted by state licensure requirements, national accreditation councils, and the influence of federal legislation. The state of North Dakota requires teacher applicants for licensure to meet both a GPA minimum and Praxis I qualifying scores. The state’s Education Standards and Practices Board (ESPB) requires applicants for initial licensure to have a minimum cumulative GPA of 2.50 and Praxis I

required scores of Mathematics 170, Reading 173, and Writing 173. Candidates may also meet the Praxis I requirement if they achieve “**qualifying scores on 2 of the [3] tests and have a composite score of 516**” (ESPB, 2009a, para. 2).

North Dakota teacher education program admission requirements at universities and colleges provide an example of the impact state licensure qualifying scores have on institutions. All 11 institutions with teacher education programs in North Dakota list GPA and Praxis I test score requirements that meet or exceed the state licensure qualifying scores. Five institutions require a teacher education admission minimum cumulative GPA that aligns precisely with the state’s minimum GPA at 2.50, two schools require a GPA of 2.70 or above, and four schools require a GPA of 2.75 or above. Ten of the 11 institutions match the state Praxis I requirements of North Dakota exactly. One institution has a composite Praxis I score of 518, two points higher than the state composite minimum of 516. The institution requires a score of 172 on the mathematics test compared to the state qualifying score of 170.

State licensure requirements impact teacher education program decisions, but faculty members commonly assume GPA relates to the obtainment of program goals. “In reality, faculty generally assume that the student’s grade point average (GPA) is an indicator of the extent to which the degree candidate has met the goals of the program” (Raths & Lyman, 2003, p. 209). The U.S. Department of Education (2006) identifies “twenty-four states” (pp. 65-67) that require GPA minimums for teacher licensure. Some individual states have raised GPA minimums in an attempt to improve the state’s pool of teacher applicants. “Pennsylvania recently raised the required GPA for acceptance into

teacher education programs to 3.0 (on a 4 point scale). Again, the rationale was to reserve places for only ‘the best and the brightest’ as defined by GPA” (Blue et al., 2002, p. 3).

Over 40 states require some form of testing with the Praxis Series being used most frequently. According to *The Praxis Series: Passing Scores by Test and State* report on May 1, 2009, “twenty-eight states” (ETS, 2009a, p. 1) require qualifying scores for teacher licensure on Praxis I tests. The Praxis I Series, administered by the Educational Testing Service (ETS), includes three exams used to measure academic skills in Reading, Writing, and Mathematics. All three tests are scored on a scale of 150-190.

The 10th Amendment permits states to retain their rights to determine their education standards, licensure requirements, and practices.

States decide whether and what tests to use to license beginning teachers. Each of the 42 states that requires tests uses a different combination of them, uses them at different points in a candidate’s education, and sets its own passing scores. States use initial licensure tests for admission to teacher education, as a prerequisite for student teaching, as a condition of graduation, and/or as a licensure requirement. (Mitchell et al., 2001, p. 165)

Under the influence of the NCLBA in 2001, state licensure requirements have continued to increase. Margaret Spellings, the Secretary of Education for the United States, wrote,

Fifty states have initial teacher certification requirements, and 44 have taken valuable steps toward aligning expectations for teachers with content standards designed for students. Together, these standards and assessments have helped increase accountability in education, sending the critical message that all teachers must provide students with a rich learning experience. (U.S. Department of Education, 2006, p. iii)

North Dakota is among the states that has established initial teacher certification requirements qualifying scores for GPA and the Praxis I, as well as content standards that bring the state’s teacher education institutions in alignment with national accreditation

standards such as those recommended by INTASC and NCATE. North Dakota's 2009 qualifying scores for the three parts of the Praxis I Series were implemented on July 1, 2003, for new licensure applicants. In addition to states establishing individual qualifying scores for the Reading, Writing, and Mathematics tests, nine states have also established "composite scores" (ETS, 2009a, pp. 6-7) ranging from 516 to 532. The composite scores involve a summation of an individual's scores on the Reading, Writing, and Mathematics tests. The required Praxis I individual test qualifying scores for licensure vary among states with the Reading test scores ranging from 170 to 178, the Writing test scores varying from 171 to 176, and the Mathematics test scores ranging from 169 to 178 (ETS, 2009a, p. 1). A majority of the states also require a Praxis II content area test and/or the Principles of Learning and Teaching tests for pedagogy, and some states have even begun requiring the Praxis III.

According to *The Praxis Series: Understanding Your Praxis Scores* report in 2008, Table 1 displays ETS data based on computerized Praxis I score results of all examinees between September 1, 2005, and June 30, 2008 (ETS, 2008, p. 4). The "Average Performance Range" (ETS, 2008, p. 1) represents the middle 50% of the examinees taking the test.

The ETS provides aggregated data to individuals, as well as institutions, state licensure organizations, and national accrediting organizations. The ETS data provide opportunity for:

- interested test-takers to compare their results with others across the nation;
- institutions and teacher education programs to compare their results with others across the nation;

Table 1. Test Score Results of All Examinees Tested by the Educational Testing Service Between September 1, 2005, and June 30, 2008.

Name of Computerized Praxis I Test	Possible Score Range	Number of Examinees	Median Score	Average Performance Range
PRAXIS I-Reading (5710)	150-190	102,649	178	174-181
PRAXIS I-Writing (5720)	150-190	100,511	175	173-178
PRAXIS I-Math (5730)	150-190	98,997	179	174-183

- potential data-driven decision-making by institutions and teacher education programs regarding admission criteria and potential curriculum changes impacting the entire program;
- institutions and teacher education programs to learn how their candidates are doing in relation to accrediting council expectations, such as NCATE, that consider passing scores part of the accreditation criteria;
- state licensure organizations to compare qualifying state score requirements with the actual score results of the state's applicants;
- institutions and teacher education programs to consider curriculum revisions or enhanced support services;
  - Teacher education programs typically offer assistance for individuals who prepare to take the test initially and especially for those individuals who do not pass all three sections of the Praxis I in order to meet the qualifying score for the state or institution on their first try. Trends in the data over time may encourage a teacher education program to develop plans for

remedial assistance opportunities, tutoring, or modifications to curriculum to help candidates, especially those with positive dispositional teacher qualities and potential to meet the standardized testing criteria.

- In addition to assistance provided by individual institutions, the ETS website also provides advice for test preparation to relieve anxiety, and a descriptive outline of the topics addressed in the content (Appendix D) for each test along with sample questions that may be downloaded through a section referred to as Tests-at-a-Glance. The ETS also provides webinars and offers study guide materials that may be purchased for individuals to refresh skills and take practice tests so test-takers have an idea of the level of difficulty for each test as well as an expectation for how long the test will take them to complete so they can learn to pace their work.

Each institution receives an annual ETS report that includes both aggregated and disaggregated demographic Praxis test data with the institution's test-taker results compiled during a 12-month timeframe from September 1st of one year to August 31st of the next. The data do not identify the individual test-takers, but the Praxis I test results include scores from each individual who identified the institution as a recipient of his/her scores. The results provide an aggregated account of the academic skill level in reading, writing, and mathematics of candidates in the teacher education program who have taken the test. Not all candidates will meet the required qualifying scores on their first attempt. ETS research indicates that during the timeframe from 2002-2005, "80.5 percent" (Gitomer, 2007, p. 17) of all Praxis I test-takers met the state passing scores.

States that require Praxis I for entry into teacher preparation will have 100 percent passing rates on Praxis I, while states that require it at licensure are likely to have lower rates. Passing rates are comparable only for states using the same tests with the same passing scores to support the same decisions. (Mitchell et al., 2001, p. 143)

Whether a candidate meets the qualifying scores for admission to a teacher education program initially, after multiple attempts, or not at all, the results are of interest to the institution. This study focused on participants who met the required Praxis I qualifying scores with 100% passing rates and were admitted to a teacher education program. The purpose of the study was to investigate the relationship between common admission requirements, such as GPA and Praxis I scores, and the final student teacher evaluation ratings that connect with INTASC principles.

#### NCATE and INTASC

Most states require applicants for teacher licensure to have more qualifications than required test scores and grade point averages. The majority of applicants for licensure complete a content specific bachelor's degree from an accredited institution and at least one student teaching practicum experience under a cooperating (mentor) teacher. For institutions to adopt or integrate accreditation criteria is important for quality teacher education preparation, and also provides another measure of accountability and public assurance that the students who graduate are ready to enter the profession. The National Council for Accreditation of Teacher Education (NCATE) is an example of an organization that sets accreditation criteria and standards to which many teacher education programs aspire. "NCATE accreditation is a mark of distinction, and provides recognition that the college of education has met national professional standards for the preparation of teachers and other educators" (NCATE, 2009, p. 1).

The expectations for teacher education programs to align with state licensure requirements and standards from councils like NCATE have continued to increase. According to NCATE (2009), the council accredited 500 teacher education institutions in 1991, and 710 teacher education institutions by the year 2007. Data compiled by Westat and computed by NCATE indicate “NCATE accredited schools produce over **two-thirds of the nation’s new teacher graduates**” (NCATE, 2009, p. 4).

The impetus for institutional accreditation involves not only national and state influences, but research as well. “A 1996-97 study conducted by the University of Texas’ Charles Dana Center showed that **student achievement increases when teachers are fully licensed in the subjects they teach**” (NCATE, 2009, p. 4). A study completed by the ETS and ACT, Inc. reported that NCATE accredited institutions “are relatively successful in helping students meet licensure testing requirements. Passing rates for students attending these institutions are higher than for students from other institutions, even when students from other institutions have higher mean college admissions scores” (Gitomer, Latham, & Ziomek, 1999, p. 39).

**Graduates** from an NCATE accredited teacher preparation program are in high demand because they **are well-prepared** for initial licensing and advanced board certification. Candidate performance at NCATE institutions is thoroughly assessed throughout the program of study and before the candidate is recommended for licensure. (NCATE, 2009, p. 3)

“To help institutions better prepare teacher candidates to meet state licensing requirements, NCATE has aligned its unit and program standards with the principles of the Interstate New Teacher Assessment and Support Consortium” (NCATE, 2008, p. 21).

INTASC’s hope is that states will agree with and honor the values in the model standards, and in this way move us toward consensus and compatible educational



policies around what good teaching looks like and how it can be assessed. (CCSSO, 2009b, para. 7)

North Dakota is among the states that aligns its standards for teacher education institutions with national accreditation standards such as INTASC and NCATE.

At least 44 states have adopted or integrated criteria developed by groups such as the National Council for Accreditation of Teacher Education (NCATE), Teacher Education Accreditation Council (TEAC), and Interstate New Teacher Assessment and Support Consortium (INTASC). (U.S. Department of Education, 2006, p. 45)

The INTASC standards “aim to develop beginning professionals while contributing, at the same time, to the development of the profession” (Interstate New Teacher Assessment and Support Consortium [INTASC], 1992, p. 11).

#### Student Teacher Evaluations and INTASC Standards

Many teacher education programs align key assessments with INTASC standards (Appendix C). Student teacher final evaluations are one example of an important teacher education program assessment in which institutions may choose to align their efforts with the INTASC standards (see Chapter III).

INTASC’s role is one of consensus building among the states, and not decision making. All authority for state policy resides within each state’s governance structure. The INTASC standards are “model” standards and intended to be a RESOURCE that all states can use to develop their own state standards. INTASC encourages states to take the model standards and discuss and debate them among their own stakeholders to come up with their own language. (CCSSO, 2009b, para. 7)

The Council of Chief State School Officers does not imply each institution must accept the INTASC standards word-for-word, but rather recommends discussion and debate as stakeholders develop their own language as they implement expectations and

assessments for teacher candidates from program admission through the final evaluation ratings of student teaching.

Cooperating teachers who accept student teachers are experienced educators who have an understanding of the relevance of the INTASC standards and what it takes for an effective teacher to be prepared to lead a classroom. The familiarity and common acceptance of the INTASC standards makes the final evaluation process more valid in the eyes of the cooperating teachers completing the final evaluations and the student teachers who are being evaluated. Many institutions ask cooperating teachers to complete a mid-term formative assessment to help with student teacher communication and set the tone for the final evaluations. Other institutions use formative assessments completed by cooperating teachers at approximately one third of the way through the student teaching experience, and a second formative assessment at approximately two thirds of the way through the student teaching experience, to help with the reliability of the final evaluation for each student teacher, as well as to increase communication and lessen the potential of a difference of opinion about the student teacher's readiness to enter the profession. Cooperating teachers also have an opportunity to visit with supervisors hired by the student teacher's institution to ask questions and gain another perspective on the student teacher's progress.

#### Reliability, Validity, and Predictability

The completion of final evaluation ratings of student teachers by cooperating teachers is a common practice; yet, the inter-rater reliability of cooperating teachers in scoring the final evaluations and the validity of the student teacher evaluation instrument may both be factors that impact the correlation tests associated with the GPA and Praxis I

data. “The weak validity evidence of academic characteristics, including . . . [Praxis I] scores, as predictors of student teaching performance might be, in part, caused by the weak validity evidence of student teaching grades as a criterion variable that measures teaching performance” (Mikitovics & Crehan, 2002, p. 222). The research of Mikitovics and Crehan substantiated research by Riggs and Riggs (1990) as well as Dybdahl, Shaw, and Edwards (1997) in finding the correlations between Praxis I scores and student teacher ratings to be negligible and not statistically significant (p. 220).

Research involving GPA has produced a “lack of consistent findings” (Graham & Garton, 2003, p. 55), but overall student teacher ratings have indicated relationships of more significance. “Overall undergraduate GPA does seem to be a predictor of student teaching ratings, which, in part, supports the widespread use of undergraduate sophomore GPA as a teacher education program admission criterion” (Mikitovics & Crehan, 2002, p. 220). A GPA of 2.50 or higher was also reported as a place where a “real differentiation appears” when scores of Praxis II test-takers with GPAs above 2.50-2.99 are compared with Praxis II test-taker scores with GPAs of 2.00-2.49 (Gitomer et al., 1999, p. 37). Some previous research has indicated positive relationships and predictability of GPA with regard to student teaching ratings, while previous research of Praxis I scores has not indicated predictability with student teaching ratings or teacher education programs. Mikitovics and Crehan (2002) found “no predictive relationship between Praxis I scores and student-teaching ratings” (p. 217).

According to a report prepared by Gitomer and colleagues (1999), for example, tests such as the . . . [Praxis I] are not designed to predict success in teacher education programs; instead, “as program entrance and licensure tests, they measure knowledge considered essential to effective pedagogy.” (Mikitovics & Crehan, 2002, p. 217)

In a report on proper Praxis I use guidelines, ETS (2006) states, “An assessment validated for use in measuring a prospective teacher’s content knowledge cannot be assumed to be a valid measure of a prospective teacher’s pedagogical skills” (p. 2). The intended use of the Praxis I tests is to measure basic academic skills.

The ETS has developed and administered tests that are reliable and have content-related validity that has been assessed both internally by ETS and also by researchers outside of ETS. “With a few exceptions, the Praxis I and Praxis II tests reviewed meet the criteria for technical quality articulated in the committee’s framework” (Mitchell et al., 2001, p. 87).

Researchers support the reliability of Praxis I tests and content-related aspects of validity, but leave room to encourage further study. “The extent to which teacher licensure tests identify candidates with the knowledge and skills minimally needed for competent practice is a key concern” (Mitchell et al., 2001, p. 121).

According to Gitomer (2007), a Praxis test does “warrant that the individual has acquired a level of knowledge that is . . . [adequate] for . . . a beginning teacher” (p. 10). Previous research has not demonstrated significant relationships between Praxis I tests and student teaching effectiveness. “A Praxis test does not guarantee that an individual will become a satisfactory teacher” (Gitomer et al., 1999, p. 13).

#### Cautious Considerations

National, state, and societal influences expect teacher education programs, state licensure organizations, accrediting councils, and, most of all, teachers to be accountable. Standardized test scores are part of the public accountability focus. While standardized

tests are measureable and have potential benefits, elevating the bar for admission to teacher education and/or teacher licensure would produce even more effective teachers, with the media believing in the efficacy of raising cutoff scores, with teacher unions having a vested interest in higher cutoffs, and with financial supporters of education advocating higher qualifying scores (Memory, Coleman, & Watkins, 2003, p. 224).

If states raise passing scores as a way to increase the competence of new teachers, they should examine not only the impact on teacher competence but also the effects of raising passing scores on applications to teacher education programs, on the supply of new teachers, and on the diversity of the teaching force. (Mitchell et al., 2001, p. 5)

State licensure organizations, teacher education programs, and those having interest in raising qualifying scores must consider the actual relationship value of the action as well as gain a full understanding of the good and ill effects of the selective admissions process for teacher education admissions and teacher licensure. Even a decision on a seemingly small qualifying score increase can make a difference.

A one-point increase in the . . . [Praxis I] reading test qualifying score for teacher licensure eliminates approximately 5% of African American test takers from entry into teaching, a one-point increase in the . . . [Praxis I] writing test qualifying score eliminates approximately 9% of African American test takers, and a one-point increase in the . . . [Praxis I] mathematics test qualifying score eliminates approximately 4%. (Memory et al., 2003, pp. 224-225)

The research of Memory et al. (2003) demonstrated the potential consequences of a Praxis I test score increase of one point. The researchers found “no significant correlation between scores on basic skills tests and ratings of teaching effectiveness” (p. 223).

The belief that testing can improve the quality of the teaching force is based on an assumption that the tests used are good measures of the competencies needed for effective teaching and that their salutary effects on training and selection are not outweighed by negative consequences for supply (including, for example,

eliminating competent teachers from the pool and dissuading some from considering teaching). (Mitchell et al., 2001, p. 115)

### Summary

Literature on teacher education admission requirements and student teacher final evaluation ratings indicates the preparation of effective teachers is an important issue at the local, state, and national levels. “While there is almost universal agreement that student success is predicated on effective teachers, there are intense debates about the quality of those who teach and how best to produce an effective teaching force” (Wenglinsky, 2000, p. 2).

Decisions about the admission requirements for candidates entering teacher education programs, the skills and attributes on which student teachers are evaluated, and the requirements for state licensure continue to be discussed. “These debates are having significant impact on policy decisions throughout the country at local, state, and federal levels” (Wenglinsky, 2000, p. 2). The training and success of a teacher involves more than the student’s teacher education preparation.

The quality of teaching in a school depends on more than just [individual] teacher quality. . . . [It also] depends on . . . factors . . . [such as] the amount and quality of instructional resources available, teacher professional development, staffing, and support from administrators and parents. (Mitchell et al., 2001, p. 164)

Public support as well as national and state influences all play a role in attempts to improve the quality of teaching and teacher quality. The support and influence come with an insistence of accountability that is measureable in quantitative terms. The field of education has components of “art” and “science” on the part of both the teachers and the learners leading many people to feel the profession has “no single agreed-upon definition of what competencies a beginning teacher should have” (Mitchell et al., 2001, p. 164).

Disparities in perspectives on effective teaching have led states to develop high standards for K-12 schools and institutions of higher education to aspire to. States and institutions have stretched across their own boundaries to align common standards such as those formulated by INTASC. Accreditation standards developed by NCATE have created an increase in similar trends and expectations occurring among states and institutions of higher education in the preparation of competent teachers.

The job of teaching students to learn and use new information, develop and apply skills, and think critically is highly complex and demanding. Teachers need to motivate and engage all students, including students from varied backgrounds and students with different learning and language needs. In addition to being responsible for student learning, teachers are expected to provide safe and nurturing classrooms, to serve as good role models, and to engage parents and the community in the business of their schools. Teachers need a wide range of knowledge, skills, abilities, and dispositions to perform these many complex tasks. (Mitchell et al., 2001, p. 164)

The broad perspective of effective teaching does not revolve exclusively around the testing of teacher education candidates, but the selective process for admission into a teacher education program and the awarding of a teaching license can be halted due to a deficiency on a standardized test.

Cumulative GPA and Praxis I test scores are two common components of teacher education admission program requirements as well as teacher licensure. The predictive potential and relationship value between GPA and Praxis I scores and the INTASC standards rated by cooperating teachers on final evaluations of student teachers can be helpful in learning about the quality of those who teach, and the likelihood of potential challenges they may face.

“Inherent in the rationale for requiring teachers to pass high-stakes minimum-competency tests is the assumption that these tests will serve as a valid

indication of effective teacher preparation” (Goodman et al., 2008, pp. 24-25). If the requirements for selective admission into teacher education programs serve to identify talented candidates and predictive strengths or challenges for teacher candidates, the requirements are good and serve a meaningful purpose. If the admission requirements do not serve a predictive value related to effective teaching or are set in a manner that eliminates the opportunity to qualify candidates who are lacking knowledge in an area not related to their skill and disposition as a teacher, the selective admission process has potential for ill. The methods and procedures used to study the predictive value of admission requirements like GPA and Praxis I test scores on final evaluations of student teachers are described in the following chapter.



## CHAPTER III

### METHODS AND PROCEDURES

#### Introduction

The purpose of this study was to investigate the relationships that existed among cumulative GPA, Praxis I test scores, and student teacher final evaluations. GPAs and Praxis I test scores are frequently used as part of the teacher education admission process, and the Interstate New Teacher Assessment and Support Consortium (INTASC) principles are commonly used as a portion of many universities' student teacher evaluations. The methods applied to secure, aggregate, analyze, and interpret the data for this study may be similar to the processes and procedures utilized by many teacher education programs that assess candidate progress from program admission throughout the student teaching semester. This chapter is presented in six sections to explain the design, setting, selection of the sample, administration and application of instruments, collection of data, and data analyses used in this study.

#### Design

The research design involved the use of existing data systematically collected over 10 semesters from the fall semester of 2004 through the spring semester of 2009. The study received an Institutional Review Board (IRB) approval from the University of North Dakota in the spring semester of 2009, as well as IRB approval from Valley City State University.

Candidates who successfully completed their student teaching requirements had Praxis I scores on three individual tests, a cumulative GPA, and one or more student teaching final evaluations recorded. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) to determine if relationships existed among the candidates' GPA and Praxis I scores in mathematics, reading, and writing, as well as the final evaluations that student teachers received from cooperating teachers at the completion of their student teaching practicum. The data collected for this research were coded and did not contain candidate names upon entry to SPSS by the Director of Student Teaching/Assessment Coordinator in the School of Education at VCSU. The SPSS data were entered, aggregated, and analyzed without the use of candidate names to avoid any risk of potential candidate identification.

#### Setting

Valley City State University is a public, liberal arts university with a population of just over 1,000 students. The institution is 1 of 11 schools in the North Dakota University System. The VCSU School of Education and Graduate Studies is reviewed and accredited by the state of North Dakota's Education Standards and Practices Board as well as by NCATE at the national level. The teacher education unit successfully completed its program reviews for the state and NCATE accreditation during this study in the fall of 2008. VCSU has been an NCATE accredited institution since 1954 and was among the nation's earliest laptop universities in which each full-time student has a laptop computer for school use.

## Selection of Sample

The existing VCSU student teacher data set in SPSS included over 1,000 entries since the fall semester of 2001, so the first step in analyzing the data was to select the appropriate cases for the study. The researcher investigated relationships involving student teachers who had Praxis I scores that reflected the current VCSU and North Dakota qualifying scores, and also those student teacher evaluations that included the same wording for the assessment of the INTASC standards. The data for this study were generated from a sample of 599 participants who successfully completed student teaching requirements through VCSU between the fall semester of 2004 and the spring semester of 2009. The participant sample was comprised of 359 elementary education placements and 240 secondary education placements. Additional demographic information were not disaggregated and presented, as some academic majors or members of a diverse population could potentially be identifiable due to small numbers. It should be noted that this study included only those candidates who completed the program.

VCSU averaged approximately 120 student teacher placements per year during the timeframe of this research. The student teacher placements were completed in the following academic areas: Art, Business, Early Childhood (exclusively kindergarten), Elementary (grades 1-6), English, Health, Mathematics, Music, Physical Education, Science (most often Biology), Social Science (most often History), Spanish, and Technology Education. Some student teachers were placed with more than one cooperating teacher to satisfy graduation and licensure requirements for having more than one major or a K-12 degree. The student teacher's individual GPA and Praxis I scores were matched to each cooperating teacher's placement and final evaluation.

## Administration and Application of Instruments

VCSU administered student teacher final evaluations manually with hard copies placed in teacher education folders associated with the individual candidates. VCSU also tracked and stored candidate progress electronically through data entered into the program's Central Assessment System (CAS). The CAS is an instrument that provides a candidate and his/her advisor access to individual information related to teacher education admission such as GPA, Praxis I scores, faculty references, dispositions, and field experience evaluations that are necessary for advancement to student teaching. The CAS was helpful to ensure that the GPA, Praxis I scores, and student teacher final evaluation data were accurate and recorded in SPSS as efficiently and accurately as possible.

The GPA, Praxis I, and final student teaching evaluation data were entered without any candidate names so personal academic information would not be identifiable through the data and results of this research:

1. Cumulative Grade Point Average:

VCSU uses a four-point grading scale. Each "A" is worth four points, "B" three points, "C" two points, "D" one point, and the grade of "F" is worth zero points. Each letter grade is multiplied by the number of course credits to determine the honor points awarded. The summation of a candidate's honor points is divided by the earned credits in all graded courses to establish the candidate's cumulative GPA. VCSU requires a cumulative GPA of 2.50 for admission and retention in the Teacher Education program. The state of North Dakota ESPB also requires a cumulative GPA of 2.50 for teacher licensure.

2. Pre-Professional Skills Test (PPST) or Praxis I test:

Since July 1, 2003, all applicants for initial licensure in North Dakota have been required to meet individual Praxis I qualifying scores in Mathematics (170), Reading (173), and Writing (173) **“or meet qualifying scores on 2 of the tests and have a composite score of 516”** (ESPB, 2009a, para. 2).

The Praxis Series of assessments was developed and is administered by the Educational Testing Service (ETS). The Praxis Series assessments are used for teacher licensure and certification by state departments of education and other certification agencies. “The *Praxis I*® tests measure basic academic skills, and the *Praxis II*® tests measure general and subject-specific knowledge and teaching skills” (ETS, 2009b, para. 1).

For admission to the teacher education program, VCSU requires the same Praxis I passing scores as the state of North Dakota. VCSU candidates typically take the three parts of the Praxis I test on one day at a location coordinated with ETS approximately 60 miles away from Valley City. The Praxis I tests were most frequently completed on a computer in Fargo, North Dakota. According to the ETS website in June of 2009, the cost for taking the Reading, Writing, and Mathematics tests in one day is \$180. Examinees pay a \$50 registration, plus a \$130 fee for test administration and results. The candidates are responsible for their own testing expenses.

Candidates taking the Praxis I series select the appropriate ETS recipient code for the institution to receive their score results. VCSU typically received the Praxis I candidate scores from the ETS in the VCSU Registrar’s Office approximately one month after the candidates completed the tests. The Praxis I scores were recorded in the

individual candidate's teacher education folder and the CAS. The scores were entered into the SPSS database if they belonged to a candidate who successfully completed a student teaching practicum experience. The Praxis I data used in this study involved candidates who met the Praxis I requirements for admission to the VCSU teacher education program and the state of North Dakota.

With a few exceptions, the Praxis I and Praxis II tests reviewed meet the criteria for technical quality articulated in the committee's framework. This is particularly true regarding score reliability, sensitivity reviews, standard setting, validation research (although only content-related evidence of validity was provided), costs and feasibility, and test documentation. (Mitchell et al., 2001, p. 87)

Researchers support the reliability of Praxis I tests and content-related aspects of validity, but leave room to encourage further study. "The extent to which teacher licensure tests identify candidates with the knowledge and skills minimally needed for competent practice is a key concern" (Mitchell et al., 2001, p. 121).

### 3. Student Teacher Evaluation:

The state of North Dakota requires a minimum of 10 weeks student teaching. The VCSU candidates in this study were placed for 10 or more weeks of student teaching depending on their academic program.

Cooperating teachers communicated with university supervisors and provided student teachers with formative assessments after three and seven weeks. Only the summative, final evaluation completed by a student teacher's cooperating teacher at the end of the field experience practicum was analyzed for the purpose of this study. The evaluation form included 26 attributes for the cooperating teacher to complete on a one to five scale with a rating of "5" considered as the "Target" or best level. The terminology

of “Target,” “Acceptable,” and “Unacceptable” is common among institutions influenced by NCATE accreditation procedures. VCSU defined the ratings of 5, 3, and 1 as follows:

5. Target: Teacher candidate reflects pedagogical and professional readiness for effective entry into the teaching profession.
3. Acceptable: Teacher candidate is making progress toward completion of their experience and preparation for 1st year teaching.
1. Unacceptable: Teacher candidate lacks pedagogical and professional knowledge and skills necessary for entry level teaching.

The potential of a four rating or a two rating was implemented in response to cooperating teacher feedback expressing a concern for increased flexibility in rating student teachers between a “Target” level and an “Acceptable” level. The “in between” ratings, four and two, provided the opportunity for greater discrimination among the final evaluation ratings. The directions on the final evaluation form and the design of the scale gave cooperating teachers more range and freedom in making evaluation decisions. If cooperating teachers had additional questions, they had access to communicate with the assigned university supervisor and the director of student teaching. Scores lower than a three were rare, but did occur in less than one-fifth of one percent (0.2%) of the cooperating teacher ratings. An example of the point scale used by cooperating teachers on student teacher final evaluation forms is illustrated as follows:

<u>Attribute Evaluated</u>	<u>Target</u>		<u>Acceptable</u>		<u>Unacceptable</u>
Knowledge of Subject Matter (INTASC 1)	5	4	3	2	1

The attribute a cooperating teacher would evaluate in the preceding example is Knowledge of Subject (which aligns with INTASC Standard 1). The cooperating teachers

received a hard copy evaluation and circled a rating from 1 to 5 for each attribute (Appendix A). The first 11 attributes on the VCSU final student teacher evaluations were more dispositional and skill-related in nature. The attributes were listed under the heading Personal and Professional Practice. The next 15 attributes for cooperating teachers to evaluate were identified as measuring Classroom Management and Teaching Competence, and connected closely or exactly to the INTASC principles. In addition to the 26 attributes uniform for every VCSU student teacher, each academic area identified five content specific attributes. This study did not branch into the relationships of GPA, Praxis I, and the five content specific competencies cooperating teachers evaluated for student teachers in each academic area. The first 26 attributes were common to every major and student teacher evaluation form, and those attributes related to INTASC standards were analyzed as a focus for this study.

The complete table of all 26 attributes evaluated by cooperating teachers can be found in Appendix A. This study focused on student teaching relationships that connect to INTASC principles for two main reasons: (a) The INTASC principles are utilized and respected by institutions, state licensure agencies, and accreditation groups; and (b) the research becomes more meaningful to VCSU and has greater potential to be useful for other institutions interested in this study.

The state of North Dakota has aligned its program reviews with NCATE and INTASC principles. The definitions of the INTASC standards may be found in Appendix B. The language utilized by VCSU was close to the INTASC wording, but did not match the INTASC language exactly. "INTASC encourages states to take the model standards and discuss and debate them among their own stakeholders to come up with their own



language” (CCSSO, 2009b, para. 7). This study measured two VCSU student teacher evaluation attributes that connected with INTASC Standard 4, three with INTASC Standard 5, three with INTASC Standard 6, two VCSU attributes that assessed INTASC Standard 7, and four VCSU attributes that were worded in connection with the assessment of INTASC Standard 9.

INTASC language:

VCSU language:

Standard 1: Subject Matter

Knowledge of Subject Matter

Standard 2: Student Learning

Provides Developmentally Appropriate Activities and Assignments

Standard 3: Diverse Learners

Adapts to Diverse Needs and Backgrounds of All Learners

Standard 4: Instructional Strategies

Ability to Implement Appropriate Teaching Strategies

Standard 4: Instructional Strategies

Uses Technology Appropriately

Standard 5: Learning Environment

Fosters Positive Learning Environment for Student Interaction

Standard 5: Learning Environment

Organization and Classroom Management

Standard 5: Learning Environment

Rapport with Students

Standard 6: Communication

Uses Verbal and Non-Verbal Communication to Motivate Students

Standard 6: Communication

Oral Expression and Effectiveness of Speech

Standard 6: Communication

Written Expression

Standard 7: Planning Instruction

Ability to Plan and Organize Lessons

Standard 7: Planning Instruction

Lessons Connect to School Curriculum and Standards

INTASC language:

VCSU language:

Standard 8: Assessment

Ability to Formally and Informally Evaluate Students

Standard 9: Reflection and Professional Development

Reflects on Teaching to Enhance Student Learning in the Future

Standard 9: Reflection and Professional Development

Reflective Response to Feedback

Standard 9: Reflection and Professional Development

Professional Appearance and Demeanor

Standard 9: Reflection and Professional Development

Commitment to the Profession

Standard 10: Collaboration, Ethics, and Relationships

Collaboration, Ethics, and Relationships

Collection of Data

The procedure for collecting research data corresponded well with NCATE accredited institutions that “regularly and systematically . . . [compile, summarize, analyze, and share data] to improve candidate performance” (NCATE, 2008, p. 26) and the teacher education program. Data were entered into the teacher education program’s CAS and hard copies were placed in the candidate’s individual folders.

The final student teacher evaluations were returned from cooperating teachers to the VCSU teacher education program near the end of the semester each December and May, respectively. By early January and early June, the data were entered in the students’ teacher education folders, the CAS, and SPSS. The student teacher data were shared with faculty representatives from the different academic areas for use in program reviews and decision-making. Cumulative grade point averages were accessed with special permission of the Registrar’s Office for the purpose of admission to teacher education and assurance

that candidates maintained a cumulative GPA of 2.50 or higher. Preservice teachers were required to have a cumulative GPA of 2.50 or higher in their last semester before student teaching; the GPA used in this study was representative of the candidate's GPA at the completion of the semester immediately preceding his/her student teaching experience.

The Praxis I tests were initially taken during or previous to the candidate's first course in the teacher education program. Candidates who did not meet the Praxis I qualifying scores on the first attempt had to repeat one or more portions of the test to improve the initial results. The teacher education program required that candidates meet the VCSU and state qualifying scores for the Praxis I tests before being admitted to the program and permitted to student teach.

Candidates had an opportunity to apply for admission for the VCSU Teacher Education program each semester from the time the student entered Introduction to Education. Candidates who were accepted and remained in good standing needed only apply for admission one time. Each candidate's GPA and Praxis I test scores were updated in his/her teacher education folder and the candidate summary portion of the unit's Central Assessment System.

Upon successful completion of student teaching, each candidate's final evaluations were placed in his/her folder, the data were entered into the unit's Central Assessment System, and also recorded into a data field in SPSS along with their GPA and Praxis I test scores.

#### Data Analysis

The data were compiled, aggregated, and analyzed using the statistical capabilities of SPSS. The methodology used to analyze the data is presented in Chapter III, while

discussion on the findings from the research is provided in Chapter IV. The methodology involved in the data analysis consisted of three main steps.

The first step was to describe the primary variables and develop a sense of what the data represented. SPSS was used to identify the frequency distributions of the participants and to calculate the descriptive statistics that provided the means, minimum and maximum values, as well as the standard deviations for the set of GPA, Praxis I, and student teacher final evaluation scores. The final part of the first step involved a description of the 1 to 5 student teacher final evaluation rating scale and an analysis of the descriptive statistics for both the student teacher final evaluation scores associated with the INTASC principles, as well as the student teacher evaluations not associated with the INTASC principles.

The second step was an investigation to determine if the sample needed to be separated into Elementary Education and Secondary Education participants. The mean scores and the Praxis I scores were also close enough together that it was decided to investigate the elementary majors and the secondary majors together.

The third step in the methodology of the data analysis involved answering the three research questions:

1. What relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles?
2. Could Praxis I scores in Mathematics, Reading, and Writing predict ratings on final student teacher evaluations not based directly on INTASC principles?

3. Could cumulative GPAs predict ratings on final student teacher evaluations not based directly on INTASC principles?

Linear regression tests were conducted on SPSS to investigate if significant linear relationships existed in each part of the questions. The regression analysis method was chosen in order to determine the degree of relationship between one quantitative dependent variable and multiple quantitative independent variables in order to “create [a] linear combination that best predicts . . . [the dependent variable]” (Mertler & Vannatta, 2002, p. 22). If a regression analysis revealed a significant relationship at the .05 level or less, a stepwise forward regression was conducted to define which variables were most closely related. The stepwise forward regression was used so one variable was “added at a time and each . . . [was] continually checked for significant improvement to prediction” (p. 171).

The first research question, “What relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles?” required five separate regressions to investigate the relationships between:

- A. GPA and ratings on student teacher final evaluations which are based on the INTASC principles;
- B. Praxis I Mathematics test scores and ratings on student teacher final evaluations which are based on the INTASC principles;
- C. Praxis I Reading test scores and ratings on student teacher final evaluations which are based on the INTASC principles;

- D. Praxis I Writing test scores and ratings on student teacher final evaluations which are based on the INTASC principles; and
- E. GPA and Praxis I Mathematics, Reading, and Writing scores.

The second research question, “Could Praxis I scores in Mathematics, Reading, and Writing predict ratings on final student teacher evaluations not based directly on INTASC principles?,” required three tests. A linear regression analysis was run using SPSS to investigate the relationships between:

- A. Praxis I Mathematics test scores and ratings on student teacher final evaluations which are not based on the INTASC principles;
- B. Praxis I Reading test scores and ratings on student teacher final evaluations which are not based on the INTASC principles; and
- C. Praxis I Writing test scores and ratings on student teacher final evaluations which are not based on the INTASC principles.

If a regression analysis revealed a significant relationship at the .05 level or less, a stepwise forward regression was run to define which variables were most closely related.

The third research question, “Could cumulative GPAs predict ratings on final student teacher evaluations not based directly on INTASC principles?,” required just one linear regression analysis using SPSS to investigate the relationships between:

- A. GPA and ratings on student teacher final evaluations which are based on the INTASC principles.

The results of the research findings are presented and explained in Chapter IV. Chapter V includes the conclusions and recommendations based on the results of the study.

## CHAPTER IV

### RESULTS

#### Introduction

Chapter IV contains the results of this study. The background information and presentation of the data analysis include the following sections: the purpose statement, a description of the sample, a description of the variables, the answers to the research questions, and a brief summary of the results.

#### Purpose of the Study

The purpose of this study was to investigate what relationships existed among cumulative GPA, Praxis I scores, and cooperating teacher ratings on student teacher final evaluations based on the INTASC principles. Investigating the relationship between student teacher evaluations and commonly used admission requirements like GPA and Praxis I scores has potential benefits in making informed decisions about setting teacher education program admission standards, modifying education course curriculum, and advising preservice teacher candidates about additional support services to enhance basic skills or potential coursework to increase the likelihood for success in student teaching.

#### Description of the Sample

The research data were generated from a sample of 599 participants who successfully completed student teaching requirements through VCSU between the fall semester of 2004 and the spring semester of 2009. The participant sample was comprised

of 359 elementary education placements and 240 secondary education placements. Additional demographic information were not disaggregated and presented, as some academic majors or members of a diverse population could potentially be identifiable due to small numbers.

#### Description of the Variables

The primary variables studied in this research project included the number of elementary and secondary education majors, cumulative GPA scores, Praxis I test scores, and cooperating teacher ratings on final evaluations for student teachers.

Table 2. Demographic Information on the Student Teacher Placements for Elementary and Secondary Majors.

Education Major	Frequency	%
Elementary	359	59.9%
Secondary	240	41.1%
Total	599	100.0%

The data in Table 2 display the participant sample of 359 (59.9%) elementary education student teacher placements and 240 (41.1%) secondary education student teacher placements. VCSU averaged approximately 120 student teacher placements per year during the five-year timeframe of this research study. Tables 3, 4, 5, and 6 provide the descriptive statistics for the mean, minimum and maximum values, as well as the standard deviation for the GPA, Praxis I, and student teacher final evaluation scores. The data in Table 3 represent the GPA and the Praxis I test scores of the student teachers in



the sample. Table 4 provides additional follow-up information to enhance the Praxis I test score data in Table 3.

Table 3. Minimum and Maximum Scores, Means, and Standard Deviations for Cumulative GPA and Praxis I Test Scores of Student Teachers (N=599).

Admission Requirement Variable	Minimum	Maximum	Mean	Standard Deviation
Cumulative GPA	2.50	4.00	3.30	0.41
Mathematics Praxis I Score	166	190	179.9	4.92
Reading Praxis I Score	165	189	177.9	4.10
Writing Praxis I Score	164	188	175.9	3.61

While the overall range for GPAs potentially varies from 0.00 to 4.00, the lowest cumulative GPA allowed for student teachers in the VCSU Teacher Education program and for teacher licensure in the state of North Dakota is 2.50, so the GPAs used in this study vary between 2.50 and 4.00. The highest possible cumulative GPA a student can receive occurs if he/she earns an “A” letter grade in every college course; the resulting GPA would be a perfect 4.00. The mean score of the sample’s cumulative GPA is 3.30. The VCSU Teacher Education program has also aligned its Praxis I test score expectations with the North Dakota teacher licensure requirements. The possible test scores for all three sections of the Praxis I range from a low score of 150 to a high of 190. Individuals admitted to the program and permitted to student teach needed the following scores on the three sections of the Praxis I – Mathematics (170), Reading (173), and Writing (173) – or to have achieved two of the three qualifying scores with a composite

score of 516 or higher. Data in Table 2 indicate that some student teachers had minimum test scores lower than the state qualifying standards. Student teachers with a low test score in one area needed to meet the qualifying score standard for the other two test areas and achieve a composite Praxis I score of 516 or higher. While the range for all three Praxis I test scores was 24 (Math 166 to 190, Reading 165 to 189, and Writing 164 to 188), the 4.92 standard deviation for the mathematics scores indicated the largest variance existed among the Praxis I test-takers in the area of mathematics.

Table 4. Comparison of VCSU Praxis I Median Test Scores With Data for All ETS Test-takers.

	Praxis I Reading	Praxis I Writing	Praxis I Mathematics
ETS Praxis I Test Score Median	178	175	179
	N=102,649	N=100,511	N=98,997
VCSU Praxis I Test Score Median	178	175	180
	N=599	N=599	N=599

The purpose of Table 4 is to demonstrate how closely aligned the VCSU student teacher Praxis I median test scores compare with ETS data based on the computerized Praxis I score results for all examinees between September 1, 2005, and June 30, 2008 (ETS, 2008, p. 4). The comparison of VCSU and ETS median test scores reflects positively on the use of this sample of student teachers for the purpose of this study. While this research is meaningful to VCSU, if the VCSU data were positively or

negatively skewed in comparison with the ETS data, the results would not be as relevant to other universities outside this sample.

North Dakota is among the states that has established initial teacher certification qualifying scores for cumulative GPA and the Praxis I test series, as well as set content standards that brought the state's teacher education institutions in alignment with national accreditation standards such as those recommended by INTASC and NCATE. The descriptive statistics in Table 5 represent cooperating teacher final evaluation ratings of student teachers' efforts associated with INTASC principles. The final student teacher evaluation form included 26 total attributes; 19 were based on the INTASC principles. Cooperating teachers rated the student teachers on a scale of one to five with a rating of "5" considered as the "Target" or best level, "3" as "Acceptable," and "1" as "Unacceptable." Cooperating teacher ratings of a student teacher that were lower than a three (Acceptable) did occur as evidenced by the minimum scores in Table 5. A review of the data found the event of a cooperating teacher rating being lower than three (Acceptable) only occurred in one-fifth of one percent (0.2%) of the final evaluation ratings.

The student teacher final evaluations with the highest mean scores included INTASC 10 ratings of "Collaboration, Ethics, and Relationships" with the highest overall mean score at 4.84; three components of INTASC 9, "Reflective Response to Feedback," "Professional Appearance and Demeanor," and "Commitment to the Profession" all at 4.83; and the INTASC 4 rating "Uses Technology Appropriately" at 4.83. Since the student teachers in the sample attend a laptop university, it seemed fitting the cooperating teachers as a whole gave a high rating to "Uses Technology Appropriately."

Table 5. Minimum and Maximums, Means, and Standard Deviations for Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles (N=599).

INTASC Related Principle	Minimum	Maximum	Mean	Standard Deviation
Knowledge of Subject Matter (INTASC 1)	2	5	4.69	.54
Provides Developmentally Appropriate Activities and Assignments (INTASC 2)	2	5	4.80	.45
Adapts to Diverse Needs and Backgrounds of All Learners (INTASC 3)	2	5	4.73	.50
Ability to Implement Appropriate Teaching Strategies (INTASC 4)	1	5	4.71	.55
Uses Technology Appropriately (INTASC 4)	2	5	4.83	.45
Fosters Positive Learning Environment for Student Interaction (INTASC 5)	2	5	4.82	.46
Organization and Classroom Management (INTASC 5)	1	5	4.60	.61
Rapport with Students (INTASC 5)	2	5	4.81	.44
Uses Verbal and Non-Verbal Communication to Motivate Students (INTASC 6)	2	5	4.73	.53
Oral Expression and Effectiveness of Speech (INTASC 6)	2	5	4.64	.58
Written Expression (INTASC 6)	3	5	4.70	.55
Ability to Plan and Organize Lessons (INTASC 7)	1	5	4.75	.57
Lessons Connect to School Curriculum and Standards (INTASC 7)	3	5	4.78	.48

Table 5 (cont.)

INTASC Related Principle	Minimum	Maximum	Mean	Standard Deviation
Ability to Formally and Informally Evaluate Students (INTASC 8)	1	5	4.71	.54
Reflects on Teaching to Enhance Student Learning in the Future (INTASC 9)	3	5	4.77	.50
Reflective Response to Feedback (INTASC 9)	2	5	4.83	.44
Professional Appearance and Demeanor (INTASC 9)	2	5	4.83	.43
Commitment to the Profession (INTASC 9)	2	5	4.83	.46
Collaboration, Ethics, and Relationships (INTASC 10)	2	5	4.84	.42

Collaboration is the ability that VCSU student teachers utilize through multiple classroom opportunities and the development of collaborative projects. The three attributes related to INTASC 9, Reflection and Professional Development, connect with the conceptual framework and professional sequence emphasized by VCSU. Each student teacher writes reflectively about his/her learning experiences both in the classroom and as part of the graduation portfolio requirement.

Two other highly rated student teacher attributes were “Fosters Positive Learning Environment for Student Interaction,” 4.82, and “Rapport with Students,” 4.81; both relate to INTASC 5. While these two attributes were rated by cooperating teachers collectively among the higher mean scores of the student teachers, the results are

interestingly at the other end of the spectrum in mean score value from another INTASC 5 principle rated by cooperating teachers, “Organization and Classroom Management.”

The student teacher attribute with the lowest final evaluation mean score, 4.60, was “Organization and Classroom Management,” related to INTASC 5. Other low mean score totals were “Oral Expression and Effectiveness of Speech,” related to INTASC 6, with a mean score of 4.64, and “Knowledge of Subject Matter,” INTASC 1, at 4.69. While mean scores of 4.60, 4.64, and 4.69 are not low in terms of being rated as on a five-point scale with an “Acceptable” rating being a score of “3,” the mean scores are lower in comparison to the other attributes evaluated by cooperating teachers. “Organization and Classroom Management” is a challenge for many student teachers across the nation, and VCSU faculty have used this data as an impetus for increased curricular attention in order to provide student teachers with more techniques and strategies in preparation for working with K-12 students in the future.

The “Knowledge of Subject Matter” cooperating teacher ratings are also reflected upon by VCSU faculty, but the data have been analyzed as one of multiple and varied assessments. VCSU assesses “content knowledge” of its teacher candidates in more ways than this study identifies. Additional questions are asked of the cooperating teachers in relationship to content specific standards, and VCSU student teachers are also required to meet both the VCSU and the state of North Dakota licensure standards (since July 1, 2006) with respect to the Praxis II series tests designed for content knowledge. NCATE requires its accredited institutions, like VCSU, to have at least 80% of its program completers meet the state required content test for licensure. The VCSU teacher education program is in compliance with the NCATE Praxis II expectation.

The data in Table 6 show cooperating teacher final evaluation ratings of student teachers, but these seven attributes are not specifically related to the INTASC standards. Most of these attributes are less orientated toward content knowledge and centered more on the cooperating teachers' view of the student teachers' efforts as an educator that are more dispositional in nature.

Table 6. Means, Standard Deviations, and Minimum and Maximum for Cooperating Teacher Ratings on Student Teacher Evaluations Not Based on the INTASC Principles (N=599).

Non-INTASC Related Attributes	Minimum	Maximum	Mean	Standard Deviation
Responsibility/Dependability	2	5	4.79	.51
Critical Thinking Skills	2	5	4.76	.52
Tact and Judgment	3	5	4.76	.50
Enthusiasm and Initiative	2	5	4.74	.55
Fairness and Belief That All Students Can Learn	3	5	4.86	.36
General Quality of Work	3	5	4.80	.45
General Promise as a Teacher	1	5	4.81	.49

The purpose of the data analysis represented in Tables 1 to 5 was to describe the primary variables used in the study and to develop a sense of what the data represent. The highest rated attribute in Table 6 is “Fairness and Belief That All Students Can Learn” with a mean score of 4.86. “Fairness and Belief That All Students Can Learn” is a dispositional attribute encouraged by VCSU and NCATE. The student teachers’ high

rating from cooperating teachers regarding this important belief puts future teachers on the right track to becoming successful, and embodies an important part of the reason for legislation like NCLB and organizations such as NCATE. Student teachers need to understand the value of helping all their students learn. Individual student achievement often begins with a teacher's belief in each student's ability to learn.

Dispositional attributes of student teachers are difficult for cooperating teachers to assess, but teacher education programs must consider the assessment of important teacher qualities other than those more easily quantified data for program admission and ultimately graduation such as GPA and Praxis I test scores. While each teacher entering the profession needs fundamental pedagogical and educational skills, dispositional teacher attributes that are not always easily quantified necessitate important skills and characteristics for teachers to possess. The data on the student teacher attributes are shared with the teacher education faculty at VCSU and other significant stakeholders. The regular sharing of data and its use in decision-making are important to the improvement of the teacher education program.

The second step in the methodology of this study was to investigate if the sample needed to be separated into Elementary Education and Secondary Education participants. Table 7 is used to present the mean scores for each variable.

The student teacher mean scores on cumulative GPAs for Elementary Education majors, 3.31, were similar to the Secondary Education majors' student teacher GPAs, 3.29. The Praxis I test mean scores between the Elementary and Secondary Education majors were also close enough together that it was decided to investigate the Elementary Education majors and the Secondary Education majors as one combined group of student



teachers. The third step in the methodology of the data analysis involved answering the three primary research questions for this study.

Table 7. Student Teacher Mean Scores for Elementary Education Student Teachers (N=359) and Secondary Education Student Teachers (N=240).

Mean Score Variable for Student Teachers	Elementary	Secondary
GPA	3.31	3.29
Mathematics Praxis I Score	179.2	180.9
Reading Praxis I Score	177.5	178.5
Elementary Student Teacher Writing Praxis I Score	175.7	176.2

#### Results for Research Question 1

Five separate regressions were required to answer the first research question, “What relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles?”

- The first of five full model regression analyses investigated the significance of relationships between student teacher cumulative GPAs and final evaluations based on the INTASC principles.
- The second regression analysis investigated Praxis I Mathematics test scores and student teacher evaluations based on the INTASC principles.
- The third regression investigated Praxis I Reading test scores and student teacher evaluations based on the INTASC principles.
- The fourth regression analysis involved Praxis I Writing test scores and student teacher evaluations based on the INTASC principles.

- The fifth regression investigated the significance of relationships between student teacher GPAs and Praxis I test scores in each area – Mathematics, Reading, and Writing.

Linear regression analyses were conducted using SPSS to investigate if significant relationships existed between the dependent variable and the independent variables. If the regression analysis revealed a significant relationship at the .05 level or less, a stepwise regression added one variable at a time to check “for significant improvement to prediction” (Mertler & Vannatta, 2002, p. 171). Tables 8 to 15 are used to display the results.

The first part of Research Question 1 involved the regression analysis of the relationship between student teacher GPAs and cooperating teacher final evaluations of student teachers based on the INTASC principles.

Table 8. Results of Linear Regression for GPA and Cooperating Teacher Ratings on Student Teacher Final Evaluations Based on INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	10.13	19	.53	3.16	<.001
Residual	97.76	579	.17		
Total	107.89	598			

The dependent variable was the student teachers’ mean scores for cumulative GPAs, and the independent variables were the student teacher attributes associated with the INTASC principles. The full model analysis determined a significant relationship existed between student teacher GPAs and the student teacher attributes based on the

INTASC principles ( $R=.306$ ,  $R\ Square=.094$ ,  $F=3.16$ ,  $df=19$ ,  $579$ , and  $p<.001$ ). Since a significant relationship existed, the next step was to conduct a stepwise regression for the independent variables on GPA. The stepwise regression indicated a significant relationship existed between student teacher GPAs and “Written Expression,” related to INTASC 6, as well as GPAs and the “Ability to Plan and Organize Lessons for Learning,” INTASC 7.

Table 9. Stepwise Regression for GPA and Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	6.61	1	6.61	38.97	<.001 <sup>a</sup>
Residual	101.28	597	.17		
Total	107.89	598			
Regression	7.81	2	3.91	23.28	<.001 <sup>b</sup>
Residual	100.08	596	.17		
Total	107.89	598			

<sup>a</sup>Predictor: Written Expression (INTASC 6)

<sup>b</sup>Predictors: Written Expression (INTASC 6), Ability to Plan and Organize Lessons for Learning (INTASC 7)

The data indicated a significant relationship existed between cumulative GPAs of student teachers and cooperating teachers’ final evaluations of student teachers’ efforts with respect to “Written Expression,” INTASC 6, and the “Ability to Plan and Organize Lessons for Learning,” INTASC 7.

The results for the independent variable “Written Expression” indicated  $R=.248$ ,  $R\text{ Square}=.061$ ,  $F=38.97$ ,  $df=1$ , and  $p<.001$ . The  $R\text{ Square}$  value of .061 in the stepwise regression indicates the proportion of the variance in the dependent variable, student teacher GPA, which can be explained by variation in the independent variable, “Written Expression.”

The results for the independent variable “Ability to Plan and Organize Lessons for Learning” indicated  $R=.269$ ,  $R\text{ Square}=.072$ ,  $F=23.28$ ,  $df=2$ , 596, and  $p<.001$ ; 7.2% of the variance in the dependent variable, GPA, can be explained by variation in the “Ability to Plan and Organize Lessons for Learning.” It is beneficial for VCSU faculty and student teacher supervisors to be aware of student teacher GPA as a predictor for a student teacher’s “Written Expression” and his/her “Ability to Plan and Organize Lessons for Learning.” The work ethic, preparation, and discipline required to research a plan and the organization of lessons for learning in a methods course or during K-12 experiences fit appropriately well with the academic success of many students who have accumulated a high GPA in their college coursework. The ability of a student teacher to organize and express thoughts accurately through writing is important for effective communication as a teacher. Skill in written expression appears to be recognized and rated by cooperating teachers in a similar manner to college faculty who have awarded letter grades to the student teachers.

The second part of Research Question 1 involved the regression analysis of the relationship between Praxis I Mathematics test scores and cooperating teacher final evaluations of student teachers based on the INTASC principles.

The dependent variable was the Praxis I Mathematics test scores and the student teacher attributes associated with the INTASC principles were the independent variables. The full model analysis determined a significant relationship did not exist between Praxis I Mathematics test scores and the student teacher attributes associated with the INTASC principles ( $R=.159$ ,  $R\text{ Square}=.025$ ,  $F=.793$ ,  $df=19, 579$ , and  $p=.717$ ). The list of the 19 independent variables is the same as Table 8. Since a significant relationship did not exist, a stepwise regression was not conducted. Cooperating teacher ratings of student teacher final evaluations based on INTASC principles are not good predictors of Praxis I Mathematics test scores.

The third component of Research Question 1 used a linear regression to investigate the predictability of cooperating teacher final evaluations of student teachers based on the INTASC principles using student teacher Praxis I Reading test scores as the dependent variable. The results of the linear regression are provided in Table 10.

Table 10. Results of Linear Regression for Praxis I Reading Test Scores and Cooperating Teacher Ratings on Student Teacher Final Evaluations Based on INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	10.13	19	.53	3.16	<.001
Residual	97.76	579	.17		
Total	107.89	598			

The full model analysis determined a significant relationship existed between student teacher Reading test results and student teacher evaluations based on the INTASC principles ( $R=.247$ ,  $R\text{ Square}=.061$ ,  $F=1.92$ ,  $df=19, 579$ , and  $p<.001$ ). Since a significant

relationship existed, the next step was to conduct a stepwise regression for the independent variables on the dependent variable, the Praxis I Reading test scores.

Table 11. Stepwise Regression for Praxis I Reading Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Which are Based on the INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	158.79	1	158.79	9.54	<.002 <sup>a</sup>
Residual	9934.34	597	16.64		
Total	10093.13	598			
Regression	341.78	2	170.89	10.45	<.001 <sup>b</sup>
Residual	9751.34	596	16.36		
Total	10093.13	598			
Regression	413.67	3	137.89	8.48	<.001 <sup>c</sup>
Residual	9679.46	595	16.27		
Total	10093.13	598			

<sup>a</sup>Predictor: Written Expression (INTASC 6)

<sup>b</sup>Predictors: Written Expression (INTASC 6), Organization and Classroom Management (INTASC 5)

<sup>c</sup>Predictors: Written Expression (INTASC 6), Organization and Classroom Management (INTASC 5), Oral Expression and Effectiveness of Speech (INTASC 6)

The stepwise regression indicated a significant relationship existed between the student teacher Praxis I Reading test scores and three INTASC related student teaching attributes: “Written Expression” related to INTASC 6 ( $R=.125^a$ ,  $R\ Square=.016$ ,  $F=9.54$ ,  $df=1$ ,  $597$ , and  $p<.001$ ), “Organization and Classroom Management” related to INTASC 5 ( $R=.184^b$ ,  $R\ Square=.034$ ,  $F=10.45$ ,  $df=2$ ,  $596$ , and  $p<.001$ ), and “Oral Expression and

Effectiveness of Speech” also related to INTASC 6 ( $R=.247^c$ ,  $R\ Square=.041$ ,  $F=1.92$ ,  $df=3, 595$ , and  $p< .001$ ). The stepwise results are depicted in Table 11.

The analysis indicates that Praxis I Reading test scores have a relationship to INTASC 6, Communication. “Written Expression” and “Oral Expression and Effectiveness of Speech” are important communication skills for effective teachers to possess. While the  $R\ Square$  value indicates just 1.6% and 4.1% of the predictability accounted for, the connection between Reading test scores and student teacher communication attributes seems natural. The Praxis I Reading test score data analysis indicated an interesting, negative correlation to an INTASC 5 related attribute evaluated by cooperating teachers, “Organization and Classroom Management.”

The fourth part of Research Question 1 involved the regression analysis of the relationship between Praxis I Writing test scores and cooperating teacher final evaluations of student teachers based on the INTASC principles. Praxis I Writing test scores represented the dependent variable and the student teacher attributes associated with the INTASC principles were the independent variables. The full model analysis data are displayed in Table 12. A significant relationship existed between Praxis I Writing test scores and the student teacher attributes associated with the INTASC principles.

The dependent variable was the student teachers’ Praxis I Writing test scores, and the independent variables were the student teacher attributes based on the INTASC principles. The full model analysis determined a significant relationship existed between student teacher Praxis I Writing test scores and the student teacher attributes based on the INTASC principles ( $R=.268$ ,  $R\ Square=.072$ ,  $F=2.36$ ,  $df=19, 579$ , and  $p<.001$ ). Since a

Table 12. Results of Linear Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Final Evaluations Based on INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	517.58	15	34.505	2.761	<.001
Residual	7287.01	583	12.499		
Total	7804.59	598	2.761		

significant relationship existed, the next step was to conduct a stepwise regression for the independent variables on the dependent variable, the Praxis I Writing test scores.

Table 13 displays the results of the stepwise regression indicating the cooperating teachers' final evaluations of "Organization and Classroom Management," INTASC 5, and "Written Expression," INTASC 6, had the most significant relationships.

Significant relationships existed between Praxis I Writing test scores and cooperating teachers' ratings of student teachers in the area of "Organization and Classroom Management," INTASC 5, as well as "Written Expression," INTASC 6. The stepwise regression analyses produced the following values for "Organization and Classroom Management" ( $R=.200$ ,  $R\ Square=.040$ ,  $F=24.90$ ,  $df=1, 597$ , and  $p<.001$ ) and "Written Expression" ( $R=.220$ ,  $R\ Square=.048$ ,  $F=15.12$ ,  $df=2, 596$ , and  $p<.001$ ). While a statistically significant relationship was calculated, the amount of variance accounted for was only 4.0% for "Organization and Classroom Management" and 4.8% for "Written Expression." Knowledge and skill in writing can involve similar skills meaningful for effective organization and management of a classroom as well as skill in written expression.



Table 13. Results of Stepwise Forward Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	312.52	1	312.52	24.90	<.001 <sup>a</sup>
Residual	7492.07	597	12.55		
Total	7804.59	598			
Regression	376.75	2	188.38	15.12	<.001 <sup>b</sup>
Residual	7427.84	596	12.46		
Total	7804.59	598			

<sup>a</sup>Predictor: Organization and Classroom Management (INTASC 5)

<sup>b</sup>Predictors: Organization and Classroom Management (INTASC 5), Written Expression (INTASC 6)

The final part of Research Question 1 involved the regression analysis of the relationship between student teacher GPA and Praxis I test scores in Mathematics, Reading, and Writing. The dependent variable was the student teachers' cumulative GPA and the Praxis I test scores in Mathematics, Reading, and Writing were the independent variables. The full model analysis determined a significant relationship existed between student teacher GPA and all three Praxis I test scores in Mathematics, Reading, and Writing ( $R=.378^a$ ,  $R\ Square=.143$ ,  $F=32.99$ ,  $df=3, 595$ , and  $p<.001$ ).

The results of the stepwise forward regression for the dependent variable, GPA, and the Praxis I test score independent variables are indicated in Table 15. The coefficient of linear determination ( $R^2 = 0.143$ ) indicated the highest percentage of variation in the dependent variable, GPA, explained by the combination of the

Table 14. Linear Regression Results for GPA and Praxis I Test Scores in Mathematics, Reading, and Writing.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	15.38	3	5.13	32.99	<.001
Residual	92.51	595	.16		
Total	107.89	598			

independent variables analyzed in any regression model in this study. The residual of .16 was the smallest difference among Research Question 1 regression analysis data between the actual value and the predicted value of a dependent variable – in this case, cumulative GPA.

The data indicated a significant relationship existed between student teacher GPA and Praxis I test scores: (a) the relationship between GPA and Mathematics test scores ( $R=.298^a$ ,  $R\ Square=.089$ ,  $F=58.21$ ,  $df=1, 597$ , and  $p<.001$ ), (b) GPA relationship with the Praxis I Mathematics and Writing test scores ( $R=.359^b$ ,  $R\ Square=.129$ ,  $F=43.97$ ,  $df=2, 596$ , and  $p<.001$ ), and (c) finally the relationship of GPA and all three Praxis I test scores ( $R=.378^c$ ,  $R\ Square=.143$ ,  $F=32.99$ ,  $df=3, 595$ , and  $p<.001$ ). The results were statistically significant with 14.3% of the variance being accounted for on the full model regression.

#### Summary for Research Question 1

The first research question was “What relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on

Table 15. Stepwise Forward Regression for GPA and Praxis I Test Scores in Mathematics, Reading, and Writing.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	9.58	1	9.58	58.20	<.001 <sup>a</sup>
Residual	98.31	597	.16		
Total	107.89	598			
Regression	13.87	2	6.94	43.97	<.001 <sup>b</sup>
Residual	94.02	596	.16		
Total	107.89	598			
Regression	15.39	3	5.13	32.99	<.001 <sup>c</sup>
Residual	92.50	595	.16		
Total	107.89	598			

<sup>a</sup>Predictor: Mathematics Praxis I

<sup>b</sup>Predictors: Mathematics Praxis I, Writing Praxis I

<sup>c</sup>Predictors: Mathematics Praxis I, Writing Praxis I, Reading Praxis I

the INTASC principles?” A significant relationship was discovered between GPA and cooperating teacher final evaluations of student teachers in the areas of “Written Expression,” related to INTASC 6, and the “Ability to Plan and Organize Lessons for Learning,” INTASC 7. Grade point average was found to have a significant relationship with test scores on all three Praxis I tests: Mathematics, Reading, and Writing.

While a significant relationship did not exist between Praxis I Mathematics test scores and student teacher evaluations related to the INTASC principles, a significant relationship existed between Praxis I Reading test scores and three student teaching

attributes. The Reading test scores related with two INTASC 6 principles, related to communication – “Written Expression” and “Oral Expression and Effectiveness of Speech.” The student teachers’ Reading test scores also indicated a significant inverse relationship to “Organization and Classroom Management,” INTASC 5. Praxis I Writing test scores and cooperating teacher final evaluations of student teachers indicated significant relationships in the attributes of “Organization and Classroom Management,” INTASC 5, and “Written Expression,” connected with INTASC 6.

### Results for Research Question 2

The second research question, “Could PRAXIS I scores in Mathematics, Reading, and Writing predict ratings on final student teacher evaluations not based directly on INTASC principles?,” required three tests. Research Question 1 investigated relationships that existed among GPA, Praxis I scores, and ratings on student teacher final evaluations. The purpose for Research Question 2 and Research Question 3 was to investigate how Praxis I test scores and cumulative GPAs related to cooperating teacher ratings for student teacher final evaluations not based on the INTASC principles. A linear regression analysis was conducted using SPSS to investigate the relationships between the Praxis I test scores and cooperating teacher final evaluations of student teachers on non-INTASC based principles. If the regression analysis revealed a significant relationship at the .05 level or less, a stepwise regression was conducted to define which variables were most closely related. Tables 16 and 17 display the results of the significant relationships.

The first part of answering Research Question 2 was to investigate the relationship between the Praxis I Mathematics test scores and the cooperating teacher

final evaluations of student teachers not associated with INTASC principles. The Praxis I Mathematics test scores were the dependent variable, and the student teacher attributes not associated with the INTASC principles were the independent variables. The list of seven non-INTASC independent variables included General Promise as a Teacher, Fairness and Belief That All Students Can Learn, Responsibility/Dependability, Tact and Judgment, Enthusiasm and Initiative, Critical Thinking Skills, and General Quality of Work. The full model regression analysis conducted indicated there was not a significant relationship between Praxis I Mathematics test scores and the student teacher attributes not associated with the INTASC principles ( $R=.114$ ,  $R\text{ Square}=.013$ ,  $F=1.11$ ,  $df=7, 591$ , and  $p=.354$ ). Since a significant relationship did not exist, a stepwise regression was not conducted.

The second part of Research Question 2 was to investigate the relationship between the Praxis I Reading test scores and the cooperating teacher final evaluations of student teachers not associated with INTASC principles. The full model analysis indicated a significant relationship did not exist between Praxis I Reading test scores and the student teacher attributes not associated with the INTASC principles ( $R=.117$ ,  $R\text{ Square}=.014$ ,  $F=1.16$ ,  $df=7, 591$ , and  $p=.322$ ). Since a significant relationship did not exist, a stepwise regression was not conducted.

The full model analysis determined a significant relationship existed between Praxis I Writing test scores and the student teacher attributes not associated with the INTASC principles ( $R=.205$ ,  $R\text{ Square}=.042$ ,  $F=3.69$ ,  $df=7, 591$ , and  $p<.001$ ). A stepwise regression indicated a significant relationship existed between Praxis I Writing test scores

and cooperating teachers' final evaluations of student teachers' efforts in exercising appropriate "Tact and Judgment."

Table 16. Linear Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Not Based on the INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	326.85	7	46.69	3.69	<.001
Residual	7477.74	591	12.65		
Total	7804.59	598			

The data displayed in Table 16 indicate a significant relationship between Praxis I test scores in Writing and cooperating teacher final evaluations of student teachers' ability in "Tact and Judgment" ( $R=.205$ ,  $R\ Square=.033$ ,  $F=20.60$ ,  $df=1$ , 597, and  $p<.001$ ). Only 3.3% of the variation of the dependent variable was explained by the combination of the independent variables, but the Writing test scores may have predictive value in identifying student teachers more likely to exercise "Tact and Judgment" if the skills associated with the selection of timely and appropriate words well written are employed during a student teacher's opportunities for action and speaking while teaching.

The significant relationship between Praxis I Writing test scores and cooperating teacher ratings of student teachers in the area of "Tact and Judgment" ( $R=.183$ ,  $R\ Square=.033$ ,  $F=20.60$ ,  $df=1$ , 597, and  $p<.001$ ) may have a connection between a student teacher's thoughtful writing for a test and the student teacher's thoughtful wording and actions while leading a classroom.

Table 17. Stepwise Regression for Praxis I Writing Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Based on the INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	260.32	1	260.32	20.60	<.001
Residual	7544.27	597	12.63		
Total	7804.59	598			

#### Summary for Research Question 2

The second research question was “Could Praxis I scores in Mathematics, Reading, and Writing predict ratings on final student teacher evaluations not based directly on INTASC principles?” A significant relationship was not discovered between the Praxis I Mathematics test scores and cooperating teachers’ final evaluations of student teachers on non-INTASC related principles. A significant relationship did not exist between Praxis I Reading test scores and cooperating teachers’ final evaluations of student teachers on non-INTASC related principles. Significant relationships did exist between Praxis I Writing test scores and cooperating teachers’ final evaluations of student teachers with respect to the non-INTASC based principle “Tact and Judgment.” The Praxis I test scores had little predictability with respect to the seven non-INTASC independent variables evaluated by cooperating teachers of VCSU student teachers: General Promise as a Teacher, Fairness and Belief That All Students Can Learn, Responsibility/Dependability, Tact and Judgment, Enthusiasm and Initiative, Critical Thinking Skills, and General Quality of Work.

### Results for Research Question 3

The third research question was “Could cumulative GPAs predict ratings on final student teacher evaluations not based directly on INTASC principles?” Research Question 3 investigated how cumulative GPAs relate to cooperating teacher ratings for student teacher final evaluations that are not based on the INTASC principles. The full model analysis determined significant relationships existed ( $R=.254$ ,  $R\text{ Square}=.065$ ,  $F=5.83$ ,  $df=7$ , 591, and  $p<.001$ ). The results are depicted in Table 18.

Table 18. Results of Linear Regression for GPA Test Scores and Cooperating Teacher Ratings on Student Teacher Evaluations Not Based on the INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	6.97	7	.99	5.83	<.001
Residual	100.93	591	.17		
Total	107.90	598			

The data in Table 19, from the stepwise regression, indicate a significant relationship existed between GPA and two non-INTASC related attributes, “General Promise as a Teacher” ( $R=.233^a$ ,  $R\text{ Square}=.054$ ,  $F=34.17$ ,  $df=1$ , 597, and  $p<.001$ ), and “Responsibility/Dependability” ( $R=.246^b$ ,  $R\text{ Square}=.060$ ,  $F=19.16$ ,  $df=2$ , 596, and  $p<.001$ ).

### Summary for Research Question 3

Research Question 3 was “Could cumulative GPAs predict ratings on final student teacher evaluations not based directly on INTASC principles?” In this study, a



Table 19. Stepwise Regression for GPA and Cooperating Teacher Ratings on Student Teacher Evaluations not Based on the INTASC Principles.

Model	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	5.84	1	5.84	34.17	<.001 <sup>a</sup>
Residual	102.06	597	.17		
Total	107.90	598			
Regression	6.52	2	3.26	19.16	<.001 <sup>b</sup>
Residual	101.38	596	.17		
Total	107.90	598			

<sup>a</sup>Predictor: General Promise as a Teacher

<sup>b</sup>Predictors: General Promise as a Teacher, Responsibility/Dependability

significant relationship existed between student teacher cumulative GPAs and cooperating teacher ratings for both “General Promise as a Teacher” and “Responsibility/Dependability.” While only 5.4% and 6.0% of the variation of the dependent variable, GPA, was explained by the combination of the independent variables, the predictability of GPA on attributes evaluated by cooperating teachers such as “General Promise as a Teacher” and “Responsibility/Dependability” would give the cumulative GPA credibility as an admission requirement worthy of attention and decision-making regarding candidate readiness, preparation, and success as a student teacher.

## Summary of Chapter IV Results

Presented in this chapter was the results of data analyzed using linear regression and stepwise regression tests when appropriate to determine the answers to three research questions.

1. What relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles?
2. Could Praxis I scores in Mathematics, Reading, and Writing predict ratings on final student teacher evaluations not based directly on INTASC principles?
3. Could cumulative GPAs predict ratings on final student teacher evaluations not based directly on INTASC principles?

The dependent variables were cumulative GPA of student teachers, Praxis I Mathematics test scores, Praxis I Reading test scores, and Praxis I Writing test scores. The independent variables consisted of 26 attributes that cooperating teachers rated on student teacher final evaluations. Research Question 1 focused on GPA, Praxis I scores, and 19 student teaching attributes based on the INTASC standards. Research Questions 2 and 3 focused on the Praxis I scores, GPA, and the seven student teacher attributes rated by cooperating teachers that were not based on INTASC standards. The dependent variables for Research Question 2 were the student teachers' Praxis I Mathematics, Reading, and Writing test scores. The dependent variable for Research Question 3 was the student teachers' cumulative GPA.

Included in Chapter V is a summary of the study, conclusions based on the results, and recommendations for further study and institutional action.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

Summarized in this final chapter are findings, conclusions, limitations, discussion (based on the review of literature) as well as the results of this study. Recommendations are also provided to both practitioners and researchers in higher education.

#### Summary

“Definitions of what teachers should know and be able to do have changed over time as society’s values have changed, and they will continue to do so” (Mitchell et al., 2001, p. 32). The development and retention of quality teachers depends on the preparation by institutions of higher education and the continued professional development provided or sought out by K-12 teachers. The goal of everyone involved with teacher preparation is to recruit, select, prepare, license, place, and support the best possible educators to teach children in the K-12 schools.

National legislation, state licensure expectations, and higher education accreditation accountability demands for teacher quality have influenced the selective measures commonly utilized for teacher education program admission and student teacher evaluations. The recruitment and selective admission of future teachers are often impacted by quantifiable scores, such as GPA and Praxis I scores focused on during this study, that can qualify or deny the opportunity to become a student teacher. The concept of selective admissions in teacher education programs based on quantifiable measures

such as cumulative GPA and Praxis I scores has value, but the results also have the potential for “good” in identifying some of the best and brightest, and “ill” through the elimination of potential teachers for the pool who have talents for teaching not measured by GPA or a test for fundamental knowledge in Reading, Writing, and Mathematics.

This research investigated the relationships that existed between two commonly accepted admission standards, cumulative GPA and Praxis I test scores, and cooperating teacher final evaluations of student teachers. The study provides potential indicators of strengths and limitations of GPA and Praxis I test scores in relationship to effective student teaching attributes. The study has potential to be reproduced by other institutions for the benefit of teacher selection and preparation.

#### Summary of Findings

The data in this study of 599 student teacher placements indicated significant relationships existed among the cumulative GPAs and cooperating teacher ratings of student teachers’ practicum efforts involving two Interstate New Teacher Assessment and Support Consortium (INTASC) related principles, the “Ability to Plan and Organize Lessons for Learning,” INTASC 7, and “Written Expression,” INTASC 6. Cumulative GPAs also had significant relationships with two other non-INTASC related student teacher attributes evaluated by cooperating teachers, “General Promise as a Teacher” and “Responsibility/Dependability.” The data also indicated significant relationships existed between the cumulative GPAs of student teachers and each of the three sections of the Praxis I series – Mathematics, Reading, and Writing.

With respect to the Praxis I tests, this study found that Praxis I Mathematics test scores were not significant predictors of cooperating teacher ratings of student teachers.

Praxis I Reading test scores had positive, significant relationships with student teacher ratings based on “Written Expression” and “Oral Expression and Effectiveness of Speech.” This study indicated that Praxis I Writing test scores have predictive value with student teaching attributes that were both INTASC and non-INTASC related. Praxis I Writing test scores had a significant relationship with the student teaching attributes “Organization and Classroom Management,” related to INTASC 5, and “Written Expression,” related to INTASC 6 involving communication. The Praxis I Writing test scores also had a significant relationship with cooperating teacher evaluations of student teachers in the non-INTASC related attribute entitled “Tact and Judgment.”

### Conclusions

Research Question 1: “What relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles?”

A significant relationship existed between student teacher GPAs and the final evaluations of cooperating teachers with respect to the “Ability to Plan and Organize Lessons for Learning,” INTASC 7, and “Written Expression,” INTASC 6. Cooperating teachers were not informed of the cumulative GPA of the VCSU student teachers upon learning of the placement. The results indicated that college campus classroom GPA success mirrored student teaching K-12 success in the “Ability to Plan and Organize Lessons for Learning” through the eyes of cooperating teachers. The potential of GPA to predict student teaching success in the ability to plan and organize lessons for learning could be valuable for teacher education programs. The value could also support the use of GPA as a meaningful admission requirement to teacher education programs.

The awareness of a significant relationship between GPA and lesson plans, as well as GPA and “Written Expression,” has potential to be meaningful for both college faculty and students. University supervisors may gain access to the GPAs of student teachers that he/she supervises. The data may serve to remind university supervisors to carefully observe student teachers with lower GPAs to ensure the student teacher is confident in his/her skills at planning and organizing lessons for learning. The awareness of past trends among previous student teachers can alert the university supervisor to pay extra attention to a student teacher with a lower GPA with respect to the planning of lessons or written expression so he/she may stay on target in meeting the cooperating teachers’ expectations for his/her classroom. Any concerns may result in handing in lesson plans earlier for cooperating teacher approval or additional mentoring and guidance being provided by university supervisors until everyone involved is confident the student teacher is successfully planning and organizing lessons for learning, and expressing themselves well in writing.

The interpretation of the results of this study does not exclude a student teacher with a GPA near 2.50 from receiving high evaluation ratings from a cooperating teacher during his/her student teaching, nor does the data indicate a student teacher with a GPA near 4.00 will be guaranteed high ratings from his/her cooperating teacher. The sample of 599 student teacher placements does indicate a significant relationship existed between student teacher GPAs and cooperating teacher final evaluations of student teachers based on an INTASC principle involving the “Ability to Plan and Organize Lessons for Learning,” as well as in the area of “Written Expression.”

Prior research involving GPA relationships to student teacher ratings has produced a “lack of consistent findings” (Graham & Garton, 2003, p. 55). This research study found that overall cooperating teacher ratings of student teachers indicated relationships of more significance involving student GPAs than Praxis I scores. “Overall undergraduate GPA does seem to be a predictor of student teaching ratings, which, in part, supports the widespread use of undergraduate sophomore GPA as a teacher education program admission criterion” (Mikitovics & Crehan, 2002, p. 220). The results of this study were supportive of the validity of having grade point average requirements for admission and teacher licensure requirements.

The student teacher attributes connected with the INTASC principles were selected as independent variables for this study because of the common practice usage of these standards throughout much of teacher education. Research Question 1 investigated the relationship of GPAs with cooperating teacher final evaluations of student teachers based on the INTASC principles, while Research Question 3 investigated the non-INTASC attributes VCSU student teachers were evaluated on by cooperating teachers.

The Praxis I test scores in Mathematics, Reading, and Writing as dependent variables compared with cooperating teacher final evaluations of student teachers based on the INTASC principles as independent variables. While the Praxis I test results are frequently used for teacher education admission standards and teacher licensure, the tests are designed to ensure future teachers have fundamental knowledge in mathematics, reading, and writing. The Praxis I tests were admittedly not designed to be predictors of student teacher success.

According to a report prepared by Gitomer and colleagues (1999), for example, tests such as the . . . [Praxis I] are not designed to predict success in teacher education programs; instead, “as program entrance and licensure tests, they measure knowledge considered essential to effective pedagogy.” (Mikitovics & Crehan, 2002, p. 217)

Significant relationships did not exist between Praxis I Mathematics test scores and any of the student teacher evaluations. This study does not advocate raising Praxis I qualifying scores to ensure student teacher effectiveness.

The Praxis I Reading test scores yielded positive, significant relationships with “Written Expression” and “Oral Expression and Effectiveness of Speech.” Praxis I Writing test scores and cooperating teacher final evaluations of student teachers indicated a significant relationship existed in the areas of “Organization and Classroom Management,” “Written Expression,” and the non-INTASC related attribute “Tact and Judgment.”

If Praxis I Reading and Writing test scores are able to predict student teacher success in specific areas of communication necessary for effective teaching, that alone is meaningful. If adeptness in writing can help student teachers develop their ability to organize and manage their classroom, this awareness can be meaningful in the preparation of future teachers and in the support of a student teacher by his/her mentor or supervisor. “Organization and Classroom Management” was the lowest overall rated student teacher attribute for VCSU, with a mean score of 4.60. The reasons for the significant relationship between Praxis I Writing test scores and “Organization and Classroom Management” are worthy of discussion and further investigation for the sake of establishing connections with potential for improvements in the areas of prediction, awareness, remediation, guidance, or preparation of student teachers. Skill development



involving the thoughtful organization of successful writing may enhance successful classroom organization and classroom management.

The final section of Research Question 1 indicated GPA to be a predictor of success for all three Praxis I tests: Mathematics, Reading, and Writing. Praxis I test scores for licensure are common practice and the qualifying scores vary among states. The 599 student teacher placements from VCSU compare well with the ETS national averages. This fact adds meaning to the study's results as the VCSU student teachers are neither exceptional nor subpar in relationship to the overall median scores among all ETS test-takers. VCSU student teachers had Praxis I test score means of 179.94 in Mathematics, 177.91 in Reading, and 175.95 in Writing (Table 2). VCSU student teacher median scores between the fall of 2004 and the spring of 2009 on the Praxis I tests were 180 in Mathematics, 178 in Reading, and 175 in Writing.

If cumulative GPA is a predictor of Praxis I test scores and GPA is a predictor of student teaching success, the validity of using GPA as a requirement for admission to a teacher education program, student teaching, and even teacher licensure appears solid from multiple angles. The significance of the relationships between the Praxis I series and student teacher evaluations may indicate some value, but this research still leaves questions regarding the importance of raising the bar on Praxis I test "qualifying" or "cut" scores for teacher education admission and licensure.

Research Question 2: "Could Praxis I scores in Mathematics, Reading, and Writing predict ratings on final student teacher evaluations not based directly on INTASC principles?"

The results for Research Question 2 indicated a significant relationship did not exist between Praxis I Mathematics test scores or the Praxis I Reading test scores and cooperating teacher final evaluations of student teachers on non-INTASC related principles. A significant relationship did exist between Praxis I Writing test scores and cooperating teachers' evaluations of student teachers in the non-INTASC based principle of "Tact and Judgment."

The significance of the Praxis I Writing test scores is worthy of attention regarding its predictive value and also to ask questions about "how" and "why" skill in writing measured on a standardized test may indicate cooperating teachers' perceptions of student teachers' skill in organizing and managing a classroom or skill in exercising professional "Tact and Judgment" as an educator.

Research Question 3: "Could cumulative GPAs predict ratings on final student teacher evaluations not based directly on INTASC principles?" A significant relationship existed between student teacher cumulative GPA and two non-INTASC based student teaching attributes, "General Promise as a Teacher" and "Responsibility/Dependability." The significant relationship that existed between cooperating teacher ratings on "Responsibility/Dependability" and student teachers' cumulative GPAs may indicate mature work ethic characteristics that are important whether the student is in a college classroom earning good grades or is working in a K-12 student teaching experience.

The cooperating teacher ratings of student teachers in the attribute "General Promise as a Teacher" indicate another significant relationship between GPA and student teacher evaluations at VCSU. A significant relationship existing between one independent student teaching variable, "Written Expression," and three separate

dependent variables (GPA, Praxis I Reading test scores, and Praxis I Writing test scores) was an intriguing find. Skill in “Written Expression” is important for teachers to communicate effectively. Admissions requirements that support fundamental skill in writing can be valuable as one component of effective teaching.

#### Limitations

This study was limited by the fact that the research was confined to student teachers at one academic institution that prepares preservice teachers for the field of education. The results may not be generalized to all campuses as different states and universities have different GPA requirements, Praxis I test score requirements, different wording of the INTASC principles on their assessments, or the institution chooses to assess other attributes on the final student teacher evaluations. Replication may be valuable for other teacher education programs to collect data to make decisions about whether the data could help select and prepare more effective student teachers. Additional general observations about the sample would note limitations in the fact that the group was largely homogenous in nature with a high percentage of the student teachers being Caucasians between the ages of 21-25 and a majority of the student teachers in this study were female. Though the group had a large sample of 599 student teachers, correlation does not always translate into causation.

#### Discussion

Teacher education programs are responsible for establishing and administering the rules, standards, assessments, and curriculum that guide the acceptance and preparation of the preservice teacher candidates who aspire to become licensed teachers in the field of education. The expectations in the preparation and licensure of future

quality teachers are varied, complex, and dynamic at national, state, and institutional levels.

The primary goal of licensing beginning teachers is to ensure that all students have competent teachers. Teacher licensing is under the authority of individual states. There are 51 unique licensure systems in the United States; they share some commonalities, however. As in other professions, teacher licensing relies on more than tests to judge whether candidates have the knowledge, skills, abilities, and dispositions to practice responsibly. Teacher candidates generally must fulfill education requirements, successfully complete practice teaching, and receive the recommendations of their preparing institutions. These requirements help ensure that a broad range of competencies are considered in licensing new teachers. (Mitchell et al., 2001, p. 165)

Research involving the relationship between student teacher evaluations and admission requirements has potential benefits in making informed decisions about setting appropriate teacher education program admission standards and improving student teacher preparation. The purpose of this study was to investigate what relationships existed among cumulative GPA, Praxis I scores, and ratings on student teacher final evaluations which are based on the INTASC principles. “Inherent in the rationale for requiring teachers to pass high-stakes minimum-competency tests is the assumption that these tests will serve as a valid indication of effective teacher preparation” (Goodman et al., 2008, pp. 24-25).

If the requirements for selective admission into teacher education programs serve to identify talented candidates and predictive strengths or challenges for teacher candidates, the requirements are good and serve a meaningful purpose. If the admission requirements do not serve a predictive purpose related to effective teaching, or are established in a manner that eliminates opportunity to quality candidates, the selective admission process has potential for ill.

## Recommendations

This study has relevance for teacher education programs to internally assess tendencies between candidate admission requirements and possible weaknesses or strengths that may be predicted before a candidate begins student teaching. Qualifying scores for cumulative GPA and Praxis I test scores are commonly used to determine teacher licensure and teacher education program admission. This research study supports the need for considering other factors and standards for teacher education program admission.

The results of this study may lead to teacher education programs currently using GPA and Praxis I test scores as a part of the admission process to discuss the modification of their current practices. Analysis of admission requirement data can be beneficial for candidate advisement as well as open discussion opportunities to potential remediation that will benefit the candidates in preparation for student teaching.

This study supports previous research efforts and adds some uniqueness in the examination of some specific student teaching attributes. While INTASC principles are frequently utilized in many states and by numerous teacher education programs, each institution is encouraged to have its own language on the application and assessment of the principles to meet the institution's vision and conceptual framework.

This research could be completed at various universities. The goal of collecting, analyzing, and sharing the data would be to learn as much as possible from the teacher education programs' admissions and student teaching data to enhance the selection and preparation of future teachers by inviting open discussion for program improvement.

- Does the data indicate changes in requirements or points of emphasis in specific admission standards?
- Does the data initiate the need for discussions about curricular enhancement that will benefit student teacher preparation in any INTASC or non-INTASC related area?
- Should research involving GPA and Praxis I test scores relating to student teacher final evaluations continue in this program? What data are most meaningful and what changes would we like to make?
- Will faculty advisors and university supervisors find this research of value in preparing and anticipating potential concerns in working with their student teachers?
- Can the teacher education program do more to improve the basic skills of its candidates for the sake of their preparation for high-stakes testing and student teaching?
- Should teacher education programs add and study other teacher admission criteria with respect to student teaching?
- Should the student teaching forms completed by cooperating teachers be changed?
- Should future research investigate the relationships between the Praxis II series and cooperating teacher ratings of student teachers?
- Should future research focus more on first year teachers who have graduated and less on student teachers?

The results of the data will be shared with the teacher education unit that may consider what the results mean for the preparation of its student teachers. The process may invite discussion about how the unit makes decisions about the admission of its student teachers, how the criteria should be used, and finally how the unit will assess its assessments to make changes that can improve the preparation of student teachers and, ultimately, increasing the percentage of highly effective teachers in K-12 schools.

The VCSU teacher education program will share this data with its education faculty and methods teachers in an attempt to gain their perspective on how the data are most useful to them. The recommendations of the researcher will involve requesting the unit examine its admission requirements and student teaching assessments. Additional tests may be conducted with the data to study potential changes in the GPA requirements for admission or how the unit helps students prepare the Praxis I test scores.

Teacher education programs that contemplate raising the expectations for the Praxis I qualifying scores for admission should do so with cautious consideration of the candidates who may be eliminated. The results of this study and the research conducted through reviewing the literature do not indicate that raising Praxis I qualifying scores will produce more effective student teachers and educators in the future. The awareness gained from this research may open discussion about learning from current admissions such as cumulative GPAs and Praxis I scores, as well as considering efforts in developing and researching other methods or criteria for admission in order to select, prepare, and support future teachers.

## APPENDICES



Appendix A  
Student Teacher Final Evaluation Form

*This appendix from the VCSU Student Teacher Handbook displays the final evaluation cooperating teachers use while circling numbers at the end of the student teaching experience.*

**STUDENT TEACHER FINAL EVALUATION FORM**

**Target:** Teacher candidate reflects pedagogical and professional readiness for effective entry into the teaching profession.

**Acceptable:** Teacher candidate is making progress toward completion of their experience and preparation for 1<sup>st</sup> year teaching.

**Unacceptable:** Teacher candidate lacks pedagogical and professional knowledge and skills necessary for entry level teaching.

	Target	Acceptable	Unacceptable	Unacceptable	Unacceptable
<b>I. PERSONAL &amp; PROFESSIONAL PRACTICE</b>					
1. Sense of Responsibility/Dependability	5	4	3	2	1
2. Oral Expression and Effectiveness of Speech	5	4	3	2	1
3. Written Expression	5	4	3	2	1
4. Critical Thinking Skills	5	4	3	2	1
5. Tact and Judgment	5	4	3	2	1
6. Reflective Response to Feedback	5	4	3	2	1
7. Enthusiasm and Self-Initiative	5	4	3	2	1
8. Fairness and Belief That All Students Can Learn	5	4	3	2	1
9. Professional Appearance and Demeanor	5	4	3	2	1
10. Commitment to the Profession	5	4	3	2	1
11. General Promise as a Teacher	5	4	3	2	1
<b>II. CLASSROOM MANAGEMENT AND TEACHING COMPETENCE</b>					
1. Knowledge of Subject Matter Content	5	4	3	2	1
2. Lesson Goals Connect with School Curriculum and State Standards	5	4	3	2	1
3. Ability to <b>Plan</b> and Organize Lessons for Learning	5	4	3	2	1
4. Ability to <b>Implement</b> Appropriate Teaching Strategies	5	4	3	2	1
5. Ability to Formally and Informally <b>Evaluate</b> Student Progress	5	4	3	2	1
6. <b>Reflects</b> on Teaching to Enhance Student Learning in the Future	5	4	3	2	1
7. Uses Technology Appropriately	5	4	3	2	1
8. Uses Verbal and Non-Verbal Communication to Motivate Students	5	4	3	2	1
9. Rapport with Students	5	4	3	2	1
10. Organization and Classroom Management	5	4	3	2	1
11. General Quality of Work	5	4	3	2	1
12. Collaboration, Relationships, & Ethics	5	4	3	2	1
13. Provides Developmentally Appropriate Activities and Assignments	5	4	3	2	1
14. Fosters a Positive Learning Environment for Student Interaction	5	4	3	2	1
15. Adapts to Diverse Needs and Backgrounds of All Learners	5	4	3	2	1

## Appendix B INTASC Standards

Standard 1: Subject Matter – The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.

Standard 2: Student Learning – The teacher understands how children and youth learn and develop, and can provide learning opportunities that support their intellectual, social, and personal development.

Standard 3: Diverse Learners – The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to learners from diverse cultural backgrounds and with exceptionalities.

Standard 4: Instructional Strategies – The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.

Standard 5: Learning Environment – The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

Standard 6: Communication – The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

Standard 7: Planning Instruction – The teacher plans and manages instruction based upon knowledge of subject matter, students, the community, and curriculum goals.

Standard 8: Assessment – The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.

Standard 9: Reflection and Professional Development – The teacher is a reflective practitioner who continually evaluates the effects of her/his choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.

Standard 10: Collaboration, Ethics, and Relationships – The teacher communicates and interacts with parents/guardians, families, school colleagues, and the community to support students' learning and well-being.

Appendix C  
Student Teacher Attributes Rated by Cooperating Teachers

INTASC and non-INTASC

(19) INTASC related principles cooperating teachers evaluated on student teachers:
Knowledge of Subject Matter (INTASC 1)
Provides Developmentally Appropriate Activities and Assignments (INTASC 2)
Adapts to Diverse Needs and Backgrounds of All Learners (INTASC 3)
Ability to Implement Appropriate Teaching Strategies (INTASC 4)
Uses Technology Appropriately (INTASC 4)
Fosters Positive Learning Environment for Student Interaction (INTASC 5)
Organization and Classroom Management (INTASC 5)
Rapport with Students (INTASC 5)
Uses Verbal and Non-Verbal Communication to Motivate Students (INTASC 6)
Oral Expression and Effectiveness of Speech (INTASC 6)
Written Expression (INTASC 6)
Ability to Plan and Organize Lessons (INTASC 7)
Lessons Connect to School Curriculum and Standards (INTASC 7)
Ability to Formally and Informally Evaluate Students (INTASC 8)
Reflects on Teaching to Enhance Student Learning in the Future (INTASC 9)
Reflective Response to Feedback (INTASC 9)
Professional Appearance and Demeanor (INTASC 9)
Commitment to the Profession (INTASC 9)
Collaboration, Ethics, and Relationships (INTASC 10)

(7) Non-INTASC principles cooperating teachers evaluated on student teachers:
Responsibility/Dependability
Critical Thinking Skills
Tact and Judgment
Enthusiasm and Self-Initiative
Fairness and Belief That All Students Can Learn
General Promise as a Teacher
General Quality of Work

Appendix D  
Praxis I Series: Test at a Glance  
Educational Testing Service: [www.ets.org](http://www.ets.org)

Test Name: Computerized Pre-Professional Skills Test: Mathematics  
Test Code: 5730  
Time: 75 minutes  
Number of Questions: 46  
Format: Multiple-choice questions (Calculators prohibited)

Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
Number and Operations	15	32.5%
Algebra	9	20.0%
Geometry and Measurement	10	22.5%
Data Analysis and Probability	12	25.0%

Test Name: Computerized Pre-Professional Skills Test: Reading  
Test Code: 5710  
Time: 75 minutes  
Number of Questions: 46  
Format: Multiple-choice questions based on reading passages and statements

Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
Literal Comprehension	21	45%
Critical and Inferential Comprehension	25	55%

Test Name: Computerized Pre-Professional Skills Test: Writing  
Test Code: 5720  
Time: 68 minutes, divided into a 38-minute multiple-choice section and a 30-minute essay section  
Number of Questions: 44 multiple-choice questions, 1 essay question  
Format: Multiple-choice questions involving usage and sentence correction; essay topic as a basis for a writing sample

Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
Grammatical Relationships	15	17.0%
Structural Relationships	16	18.5%
Word Choice and Mechanics	13	14.5%
Essay	1	50%

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