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## Teacher Candidate Dispositions Identified by NCATE-Accredited Colleges of Education: How Professional Educators are Disposed Toward the Students, Curriculum, and Reasons They Teach

Debra L. (Rhoads) Jensen

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TEACHER CANDIDATE DISPOSITIONS  
IDENTIFIED BY NCATE-ACCREDITED COLLEGES OF EDUCATION:  
HOW PROFESSIONAL EDUCATORS ARE DISPOSED TOWARD  
THE STUDENTS, CURRICULUM, AND REASONS THEY TEACH

by

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Bachelor of Science, Minot State University, 1976  
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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  
2004

2004  
J546

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This dissertation, submitted by Debra L. Jensen 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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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 N. Benoit  
Dean of the Graduate School

December 13, 2004  
Date

## PERMISSION

Title                   Teacher Candidate Dispositions Identified by NCATE-Accredited  
                              Colleges of Education: How Professional Educators Are Disposed  
                              Toward the Students, Curriculum, and Reasons They Teach

Department           Teaching and Learning

Degree                 Doctor of Philosophy

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*Victoria Jensen*

Date

*December 2, 2004*

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## DEDICATION

This study of teacher dispositions is dedicated to  
all the educators whose caring and collective wisdom of practice  
personifies the true heart and artistry of the profession.

## ABSTRACT

The education profession has a great deal of information on potential teachers' knowledge and technical skills, but the study of affective attributes that are the human interface between teaching and student learning is still evolving. The central phenomenon examined in this study is the affective and attitudinal attributes, or "dispositions" of teachers as defined by colleges of education.

The researcher analyzed conceptual frameworks and affective attributes in Institutional Reports from colleges reviewed by the National Council on the Accreditation of Teacher Education (NCATE), whose standards require reporting on dispositions. The dispositional factors that these colleges surmise predict successful practice were coded and categorized, then compared with the prior literature regarding this phenomenon and student learning factors. Student learning factors were drawn from existing cognitive science research with potential parallels to the dispositions identified in the qualitative study. Dispositional codes were analyzed and categorized using a developmental model, resulting in four primary categories and nine subcategories:

- |                      |                           |
|----------------------|---------------------------|
| I. Cognitive         | III. Social               |
| a. Knowledge         | a. Character              |
| b. Thinking Skills   | b. Leadership             |
| II. Emotional/Values | IV. Contextual            |
| a. Personal,         | a. Structure for Learning |
| b. Interpersonal     | b. Philosophy             |
| c. Community         |                           |

Frequencies and rank orders of the specific dispositions identified are provided. Graphs comparing dispositional characteristics in the Institutional Report analysis to the Interstate New Teacher Support and Assessment Consortium (INTASC) Ten Core Principles are included within the discussion of findings.

Subcategories of valued teacher dispositions were found to have marked similarity across the diverse colleges and universities. However, little consensus occurred in regard to the research literature-bases used by the colleges and almost no information regarding specific assessments was available at this level of analysis.

Recommendations are included that encourage greater collaboration within the profession and across other professional domains to better articulate the research base and determine appropriate hierarchical measurement scales for evaluation. Recommendations for college of teacher education self-examination of dispositional research and assessments within the developmental model, with an emphasis on incorporation of cognitive science research are also provided. The self-examination includes probe questions for mapping where dispositions are addressed in the program structure, validating the research base, and mapping evaluations across the program.



## CHAPTER I

### INTRODUCTION

In an era of increased concern for the success of all students, colleges of teacher education, as well as national accreditors and state licensing agencies, are striving to better identify and strengthen critical teacher attributes. The education profession has a great deal of information on how to assess what potential teachers know and what they can do, but the identification, evaluation and development of affective and attitudinal attributes that are the human interface between teaching and positive growth in student learning are still largely a matter of subjective professional intuition. The central phenomenon examined in this narrative is the “dispositions” of teachers as currently defined by colleges of teacher education. The identified dispositions are discussed in relation to the broader literature base and factors shown to impact student learning.

#### Background for the Study

##### *NCATE Teacher Dispositions*

Sampled data for this study were drawn from reports submitted to the National Council for the Accreditation of Teacher Education (NCATE). NCATE’s scope as a national accreditor of teacher preparation programs includes over 600 colleges of teacher education, and their most recent standards, *Professional Standards for the Accreditation of Schools, Colleges, and Departments of Education* (NCATE, 2002) require institutions to define and evaluate “dispositions.” NCATE’s definition of dispositions includes the same type of information referred to across the literature as affective attributes, values

and beliefs, perceptions (Combs, 1974), interpersonal and intrapersonal intelligences (Gardner, 1999), or 'the teacher as a person' (Stronge, 2002).

The fact that NCATE asks institutions to define and evaluate dispositions and has already collected this information allowed a substantial body of data in a uniform format to be readily available for examination. The text of the basic NCATE standards appears in Appendix A, along with the general evaluation rubric for the section on dispositions. Information on dispositions is reported by the institutions to NCATE in their Institutional Reports, primarily in responses regarding the Conceptual Framework and Standards 1 and 2. The Conceptual Framework frames the vision for the institution's teacher preparation programs and desired characteristics for its graduates. Standard 1 articulates characteristics expected of candidates in the teacher education programs and Standard 2 the assessment system for evaluating those characteristics.

It was necessary to define parameters for the definition of the phenomenon of teacher "dispositions" for use in reviewing the documents. The NCATE definition of dispositions, from the glossary of *Professional Standards for the Accreditation of Schools, Colleges, and Departments of Education* reads:

Dispositions. The values, commitments, and professional ethics that influence behaviors toward students, families, colleagues, and communities and affect student learning, motivation, and development as well as the educator's own professional growth. Dispositions are guided by beliefs and attitudes related to values such as caring, fairness, honesty, responsibility, and social justice. For example, they might include a belief that all students can learn, a vision of high and challenging standards, or a commitment to a safe and supportive learning environment."  
(NCATE, 2002, p. 53)

Colleges of education accredited by NCATE have varied missions and affiliations and are free to design their own specifications and assessments for evaluating the

dispositions of their teacher education candidates. This dissertation makes note of not only the dispositions defined by institutions, but also notes literature supporting the college's rationale for including the identified dispositions, and any reported means of assessing the dispositions as teacher candidates move through the preparation program.

*INTASC: Policy Emphasis on Performance*

State departments of education and independent educator licensing boards, like colleges of education, are attempting to define affective attributes that lead to teaching success. The Council of Chief State School Officers (CCSSO) developed principles that define what all beginning teachers should know and be able to do. The CCSSO's Interstate New Teacher Assessment and Support Consortium (INTASC) was formed in 1987 and produced the first draft of the INTASC Ten Core Principles in 1992 (CCSSO, 2000). The INTASC principles have since been integrated with the standards of many professional content associations, state departments and into the NCATE standards. Like the NCATE standards, the INTASC principles address knowledge, performance skills, and dispositions. An example of the dispositional elements from INTASC Principle #1, regarding content knowledge, follows:

Principle #1: 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."

...

"Dispositions

- The teacher realizes that subject matter knowledge is not a fixed body of facts but is complex and ever-evolving. S/he seeks to keep abreast of new ideas and understandings in the field.
- The teacher appreciates multiple perspectives and conveys to learners how knowledge is developed from the vantage point of the knower.

- The teacher has enthusiasm for the discipline(s) s/he teaches and sees connections to everyday life.
- The teacher is committed to continuous learning and engages in professional discourse about subject matter knowledge and children's learning of the discipline.

(CCSSO, 2000)

All ten of the INTASC Core Principles and related dispositions appear in Appendix B and are discussed in relationship to the research findings in Chapter III.

*Dispositions as an Interface between Teaching and Learning*

Over the past twenty years, educational researchers have developed new theories about intelligence and processes by which human beings learn. These theories look at cognition and the importance of teacher-student interaction in very different ways, redefining teaching as much more than simply the skilled presentation of existing information. Gardner's multiple intelligence theory and Goleman's compilations of research on emotional intelligence have influenced many an educator's design of student learning experiences (Gardner 1993, 1999; Goleman 1994).

Increased cognitive science research has focused attention on:

1. the neurological interplay between emotion and cognition (Frijda, 1988; LeDoux, 1996; Damasio, 1999);
2. how the recognition, strategic and affective neural systems of the brain process and evaluate information (Diamond & Hopson, 1998; Gazzaniga, 2002; Spitzer, 1999; Rose et al. 2002); and
3. how interpersonal relationships can affect cognitive processes (Fischer, Ayoub et al., 1997; Fischer & Kennedy, 1997; Fischer & Bidell, 1998a; Pianta, 1999).

This research has cast a bright light on the need to better understand how the demonstrated values, beliefs attitudes, and interpersonal skills of teachers impact the learning environment and individual students.

The central ideas in these works challenge educators (or perhaps more cogently, the paradigm of the educational system and accountability measures) to re-conceptualize thinking about intelligence, learning, educational environments, and assessment. These theories underscore how different students may perceive and make meaning of their experiences in very different ways; and how interpersonal and classroom climate and stability factors may have substantial impact on the learning process. The second phase of this research study in Chapter IV used these and other teaching and learning theories as a lens to examine the ideas about dispositions emerging from the qualitative examination of the NCATE college of education Institutional Reports.

In addition, more triangulation concerning how learning occurs is becoming possible among the disciplines of:

1. developmental and behavioral psychology (the study of observed changes in development and behavior, from which the bulk of research on effective teaching has traditionally grown);
2. cognitive psychology (the study of what goes on inside the mind in thinking and learning processes); and
3. cognitive neuroscience (the study of the brain's physiological learning systems) due to advances in technologies related to those areas of study.

These fields are increasingly converging to form *The Mind's New Science*, the field of cognitive science (Gardner, 1985).

It is important to note, in relation to the fields of behavioral and cognitive psychology, that the term “dispositions” as defined here is not the same as “personality” or “operational style,” as could be assumed in the vernacular definition of the word “disposition.” The NCATE and INTASC definitions instead focus on specific ways potential teachers think about students, teaching practices, and the purposes of schooling in the broader context; those things that ultimately govern their attitudes toward students and peers, their design of learning experiences, and their behaviors in the classroom and within the profession. The word “disposition” here embodies how professional educators are Disposed toward the students, curriculum, and reasons they teach.

#### *Developments in Research Technologies*

Researchers now have at their disposal, as a result of new developments in neural network analysis, complexity models, and other computer-based technologies, tools for evaluating data related to dispositions in new ways, particularly large masses of narrative data or data entwined in contexts driven by complexity. (Spitzer, 1999; van Geert, 1994; Fischer & Kennedy, 1997). These new technologies enable researchers to use technology to scan large volumes of narrative information and to look at data in less fragmented ways than traditional models that isolated factors, allowing researchers to look into the interactive, complex system of factors that influence educational success or failure. These developments create an environment within which a project of this nature may be completed with more breadth and less research hours than previously required under traditional hand-coding methods. This study provided the researcher an opportunity to gain additional understanding in the use of these new methods as the study was executed,

in addition to gaining greater understanding of the central phenomenon. That information is also reflected in the Chapter II methodology and Chapter V recommendations.

### Need for the Study

#### *Prior Lack of Systemic Research Emphasis*

As was noted in the introduction, the education profession has a great deal of information regarding how to assess what potential teachers know (content knowledge) and what they can do (skills testing), but the evaluation and development of dispositional characteristics is still evolving. Experienced master teachers can often, with a reasonable degree of success, predict which student teachers will become strong, artistic practitioners over time and which may not, but there is a great deal of difficulty in defining why, and even more difficulty in determining how to strengthen the critical dispositions in those perceived to have a weaker initial probability for success. What is even more perplexing is determining why some teachers succeed with some students and not with others.

When adults ask children, that is talk to them instead of about them, they nearly always describe their best and worst teachers with scenarios that revolve around dispositional factors, interpersonal, intrapersonal, and emotional intelligences. The same dialogue occurs when mentor teachers, teacher educators, and parents are asked to do the same. While NCATE's inclusion of dispositions as a requirement for national accreditation has spurred colleges to deeper reflection on exactly how to define and evaluate dispositional factors, the profession is just beginning to amalgamate and scientifically research how to cultivate dispositions that have a link to students' successful engagement in learning.

### *Subjectivity in Examining Dispositions*

While most would agree the dispositions of teachers have an effect on students, there is a decided lack of consensus on appropriate and valid measurements and little, if any, longitudinal data regarding how dispositions of teachers affect student learning. Longitudinal data on individual student growth over time and data that include dispositional factors of teachers are still very rare. In a recent survey of educational research, Singer and Willett (2003) found that very few studies of change in students' abilities (academic or behavioral) over time include three or more waves of data suitable for longitudinal study, most use pre-test/post-test models. In *Teacher Characteristics and Student Achievement Gains: A Review*, Wayne and Youngs (2003) provide a rigorous overview of studies relating teacher characteristics to student achievement. The Wayne and Youngs analysis found a total of only 21 studies that could be included in their meta-analysis that compared teacher characteristics and student achievement and also controlled for prior knowledge and socioeconomic factors known to have a powerful impact on student achievement.

None of the studies included in these fairly comprehensive reviews focused in particular on dispositions, but on input factors such as teachers' levels of preparation, licensure, and college entrance scores. Part of the difficulty in studying the effect of teacher dispositions on student learning is lack of clear definitions and measurement scales for analyzing dispositions, and part the lack of longitudinal studies in complex, authentic learning environments wherein teachers and students interact on a daily basis over time.



Validated evidence will become increasingly important to colleges of education due to the inclusion of dispositions in the NCATE standards for accreditation and emerging cognitive science research on how dispositional factors influence learning. The present study of dispositions was conducted to compile information on emerging practices relative to dispositional factors and compare those practices to other bodies of research in cognitive science. It is hoped that compiling such information will assist educational researchers in identifying promising areas for research and further discussion of how to best design measurement scales and longitudinal studies of dispositions in authentic environments, making the study of dispositional factors less subjective.

#### Purpose of the Study

#### *Statement of Purpose*

The purpose of this study was to investigate what characteristics are currently being identified by schools of education as desirable dispositions for potential teachers, and examine those factors in light of the literature base on dispositions and student learning. It was intended that the study better identify and define those dispositions that predict successful practice and promising methods by which those attributes may be assessed and enhanced in teacher education candidate preparation. The second phase of the study, in which the identified dispositions are compared to learning theory, was intended to shed light on the alignment of the emerging work as it defines and evaluates new teachers' dispositions as a potential positive or negative impact on student learning.

Education, as the complex system it is, has the opportunity to benefit greatly from the new developments outlined here. Classroom teachers and teacher educators, as the professionals with the most authentic experience with students and schooling, have a

responsibility to be involved as these new directions evolve. This dissertation presents a sampled culmination of the expertise and experience of hundreds of teacher education faculty struggling to refine the phenomenon of teacher dispositions and discover links to cognitive function. The findings and recommendations identify parameters into which the identified dispositions fall, potential areas for additional research, and a reflective structure by which colleges of education may examine current practices in light of these findings to become more involved partners in subsequent research.

### *Research Parameters*

The documents from the NCATE-Accredited institutions were studied using a phenomenological qualitative approach (Creswell, 1998, 2002). The three primary investigative parameters around which this study was framed were:

(1) What is happening in regard to the central phenomenon within the study population, or more explicitly: What are the current commonalities and differences across practice at institutions of teacher education reviewed under the NCATE standards in regard to dispositions of teacher education candidates; and how do the identified dispositions compare to the broader literature base on dispositions? It is within this parameter that the existing reports from NCATE reviewed institutions were scanned for identified dispositions, the literature base purported to support the dispositions as desirable, and the institution's methods of assessing whether teacher candidates exhibit the dispositions.

(2) What is the meaning to those involved and what relationships may be drawn to meanings perceived in other research, or more explicitly: How do the dispositions identified by the NCATE institutions compare to research in the realm of cognitive

science regarding potential impact of those dispositions on student learning? Once existing practices are identified, coded, and categorized, they will be compared to other studies of disposition factors and student learning factors.

(3) What is emerging over time; can theories for further study be established, or more explicitly: What parameters and models can be recommended for further study that may enhance the growth of positive dispositions (those most likely to enhance student learning) in potential teachers?

#### *Initial Expectations and Possible Preconceptions*

The following *a priori* observations stem from the researcher's experience observing the teacher education accreditation process in North Dakota from 1995-2004, and watching NCATE's design of the dispositions element evolve in their new standards. Institutions had previously approached the concept of dispositions from a number of perspectives. It was expected, as the scan of institutional documents was completed, that dispositions revealed would fall into these preconceived or other emerging categories.

Before NCATE defined dispositions, many colleges of education already defined what could be termed job-related 'soft skills' (such as promptness, effective verbal and non-verbal communication skills, positive attitude, organization, appropriate professional dress, ability to work positively with others) on which they would evaluate candidates. These attributes would be expected of any professional position, regardless of whether it is a teaching position. Other attributes frequently sought in professional employees in general and teachers specifically fell into the category of character or ethics related (such as professional 'presence' or 'bearing', honesty, fairness, and respect for others).

Another group of attributes that often appeared in reports were specifically related to teaching strategies, such as modeling enthusiasm for the subject matter, differentiating instruction to reach diverse types of learners, maintaining an organized and efficient classroom climate, or structuring learning experiences that encourage self-motivation or positive social skills as well as engaging students in academic content.

Still another category commonly articulated in mission statements related to educational foundations or philosophy, such as valuing the potential of all students, thinking of parents and the larger community as partners in educating students, or seeing the quality of education as a fundamental part of social equality and justice. It was expected that dispositions would relate to the mission or conceptual framework of the institution. For example, research institutions could see an objective approach to scientific inquiry as a critical disposition, and an institution with significant affiliation to the arts or futuristic industrial developments may value creativity and innovation. Institutions with religious or cultural missions may include as important dispositions the value systems related to that religion or culture. Likewise, institutions that define themselves as dedicated to a constructivist or positivist philosophy of education could be expected to reflect those philosophies in the dispositions they define as desirable.

It was also expected that institutions may articulate many common dispositions simply because of the NCATE and INTASC definitions themselves, since institutions would be attempting to satisfy their accreditors at the same time as they put forth their own philosophies. It was logical that institutions would be in various stages in their definition, implementation, and evaluation of candidate dispositions. NCATE designed a timeline for its evaluation expectations for dispositions (and other candidate performance

criteria) that allowed the institutions' systemic assessment plans to be phased in over a four-year period, with full implementation by 2004.

#### Delimitations

The colleges of teacher education included in this study were limited to institutions submitting NCATE accreditation reports from fall semester 2000 to spring semester 2004. The colleges of education included in this analysis were limited to institutions reviewed under the most recent NCATE standards since those standards require institutions to define and evaluate dispositions. While only NCATE reviewed institutions are included in this study, the study could theoretically be replicated at non-NCATE institutions. Replication would require additional effort in data collection, negotiating access individually and asking institutions to provide information in a manner structurally similar to that required by NCATE, since existing reports in that standard format would not already be available.

The scope of this study was limited to self-reported data from the institutions. This study did not include actual interviews with faculty or teacher candidates regarding their personal perspectives on dispositions, but the NCATE standards do require broad participatory process in the design of the Conceptual Framework, definition of desirable candidate characteristics, and assessments thereof. That participation must include education faculty, arts and sciences faculty, cooperating P-12 school staff and candidates themselves. The database developed in this study could be expanded as more institutional data are available, to allow comparative studies among the findings for various demographic factors (such as college size, type, mission, program structure, student body, educational philosophy or conceptual framework, etc.) and longitudinal study of the

evolution of dispositions and their eventual impact on student learning, within the NCATE accreditation framework. Future research could follow the results of this study using interviews or longitudinal study of candidate retention or success in various settings upon entering teaching.

### Assumptions

#### *Data Assumptions*

The assumption was made that data defining desirable dispositions for potential teachers, what literature led institutions to choose these dispositions, and how the dispositions are being assessed would be well enough defined in the Institutional Reports to be categorized and studied. If upon examination, data were not clearly defined in the reports, it could challenge the potential to carry out the final comparisons and recommendations. It was also possible that existing institutional data from sufficient numbers of institutions may not be readily available in a usable format within the defined research timeline.

As the project was completed, data from 100 randomly selected institutions were available and clear patterns of dispositions emerged after analyzing 25 reports. In the final analysis, dispositions were clearly articulated in all of the reports and were able to be collected and categorized. Two-thirds of the institutions provided information on their research base with references, some of which was specific to dispositions and some more generally relevant to the Conceptual Framework. Information on assessments was not as clearly defined, as only a few institutions clearly set aside their means of assessing dispositions from their means of assessing candidates in general. These findings are

discussed in depth in Chapters III and IV, with recommendations for future data needs and research outlined in Chapter V.

#### *Technological Assumptions*

One of the methodological intents of the study was to investigate whether data scanning software could extract patterns related to dispositions in a reliable manner. CatPac II® software from Galileo was used to experiment with electronic data in the pilot study to determine what information could be gleaned through neural network analysis and how that data compared to traditional human analysis of narrative. The use of the software with the pilot data confirmed it has potential to produce similar results, once common terms not related to the study are controlled. This application is described further in Chapter II, Methodology. It was determined, through consultation with NCATE, that the format for their electronic storage of Institutional Reports was picture rather than text files. Use of the neural network software, which requires text format, was therefore limited to experimentation with the pilot files and examination of information that was drawn out through traditional coding processes during the main study.

#### *Narrative Assumptions*

The researcher presumed from the outset that dispositions are indeed important as stated by students, parents and cooperating teachers in narrative comments. The fact that NCATE, as a national accreditor, determined to make dispositions part of its triumvirate upon which candidates must be assessed (knowledge, skills or performances, and dispositions), gives credibility to the informal narrative comments. Many research studies upon which NCATE's standards are based have stressed the importance of effective

teaching strategies and positive affective factors in addition to content knowledge being critical to student learning (Darling-Hammond, 1997, 2000; NCATE, 2002).

On the other hand, recent federal policies, such as No Child Left Behind's definition of highly qualified teachers, have put content knowledge back in the central spotlight, with less emphasis on professional pedagogy, and mention of dispositional factors limited to articulating a belief that all children must have well qualified teachers (US DOE, 2001).

*Personal Assumptions or Potential Biases of the Researcher*

The researcher entered into this project feeling that the dispositions of teachers are likely to be as important to their success in helping students learn as knowledge of content and skill in structuring learning experiences. The practical premise behind this study is, if the dispositions most likely to lead to success with students (or perhaps particular types of students who are not now successful) can be identified, perhaps those dispositions can also be cultivated, or students and teachers matched up in ways that will be more successful. The pertinence of this study to educational research is that the definition and study of successful dispositional attributes may not only help students, but also lend more professional credibility to the affective domain of teaching, that is often described ethereally as the professional artistry of teaching. Evidence-based credibility for the effects of dispositions could help dispel what the researcher feels are unsubstantiated, and archaic, opinions that anyone who knows something can automatically teach it to students or that anyone with a good enough 'teacher-proof' scripted curriculum in their hands can teach.



The researcher is curious about this phenomenon of dispositions, particularly why some teachers succeed with some students and not with others, while different teachers may succeed where all others fail. Having a predilection for observing how people interact intellectually and socially, the researcher finds these relationships of teachers and learners as fascinating as any other relationships in human behavior. Relationships with teachers, like relationships with parents and other significant adults, can build in triggers of resiliency or dysfunction in future situations.

#### Preliminary Literature Review

Since this research project began with a qualitative scan of current practices, a full review of literature on dispositions was not conducted until the results of that qualitative research were compiled, so as not to influence those results. This preliminary overview, therefore, includes discussion of the previous experience of the researcher with the topics. An overview of the structure of the study and discussion of the methodology applied appears in Chapter II. A more detailed examination of the literature base relative to strands emerging from the data analysis is presented in Chapters III and IV using the two-article format, integrating discussion of the literature with the presentation of findings.

#### *Researcher's Prior Experience with the Topics*

The researcher has worked with various aspects of education over the past twenty-eight years, fourteen years specifically with teacher education and ongoing professional development for educators, and nine years with NCATE accreditation. Due to this prior experience, the researcher's possible preconceptions at the start of the project were noted in the section of this chapter entitled Assumptions.

### *Prior Knowledge of Dispositions*

The researcher's experience with the phenomenon of dispositions at the beginning of this research included experiences with the NCATE and INTASC definitions of dispositions, discussion of this topic within the context of accreditation reviews in North Dakota and at national conferences, and work targeted to improve teacher preparation as Assistant Director with the North Dakota Education Standards and Practices Board from 1995-2004. A specific literature review on dispositions was not conducted until after emergent findings from the data were compiled, but internet searches to identify and focus potential sources of information were conducted and a reading list compiled. Additional sources of information emerged from the data analysis.

### *Prior Knowledge and Review of Literature on Student Learning*

Since the scope of research in this proposal is focused on teacher dispositions, not new research on student learning, the literature review related to student learning served only to identify currently held precepts on factors that impact student learning so they may be compared to the work on teacher dispositions. This study, therefore, relies upon the research base on student learning as it currently exists in the profession. The researcher had previous experience examining research related to creating effective learning environments for P-12 students and adult learners. This preparation included study of educational improvement at the P-12 level in the Masters of Education program in Educational Leadership at the University of North Dakota (UND), study of cognitive science in the Mind, Brain and Education Program at the Harvard Graduate School of Education (HGSE), and study of adult learning and college teaching in the doctoral program in Teaching and Learning: Research Methodologies at UND.

## Definitions

**Affective attributes.** In this narrative, the term affective attributes is used to designate characteristics of an individual such as attitude, perceptiveness, demeanor, emotional and interpersonal skills or intelligence, along with the individual's underlying belief system about self and others, all of which ultimately influence how the individual interacts with others and how the affective systems of others, in turn, perceive their actions. This definition stems from the definition of "affective" in the field of psychology, i.e. "the psychology of emotional expression relating to an external expression of emotion associated with an idea or action" (Encarta®, 2004).

**Candidate.** The term candidate refers to those individuals formally enrolled in any education preparation program as candidates for graduation in the field of education, to distinguish education students from P-12 students. This definition includes those seeking basic degrees in education to be licensed as P-12 teachers and those seeking advanced degrees or preparation for other roles in P-12 education such as school counseling or principalship. This definition parallels the NCATE definition (NCATE, 2004).

**Codes.** Definitions of the 95 codes denoting dispositional attributes that emerged from the qualitative scan of the data appear in the codebook in Appendix C. These definitions were consolidated from the actual language in the Institutional Reports surrounding these concepts (see also Chapter II Methodology).

**Cognitive psychology.** Cognitive psychology is a sub-field of psychology that focuses on mental states, often referred to as the study of the "mind." Cognitive psychology is associated with information processing; how the human mind receives, processes and interprets information and how the resulting mental representations

interplay with emotion, behavior, physiology, and, in particular for education, learning. This definition sets cognitive psychology apart from behavioral psychology, which is based on the observation and modification of the way that people behave; and developmental psychology, which is the study of psychological and behavioral changes across the lifespan (Dorland, 2002; Encarta®, 2004).

**Cognitive neuroscience.** A sub-field of neuroscience involving study of the neural mechanisms of cognition, or the physiological mechanics of what takes place in the brain during cognitive processes. These mechanisms are studied through traditional anatomical methods and techniques such as positron emission tomography (PET) and functional magnetic resonance imaging (fMRI). Cognitive neuroscience is concerned with understanding how mental processes take place in the brain (Gazzaniga, 2002).

**Cognitive science.** Cognitive science combines elements of philosophy, psychology, linguistics, anthropology, neuroscience, and artificial intelligence into an interdisciplinary study of the mind/brain and how thought and knowledge occur (Dorland, 2002; Gardner, 1985)

**Conceptual framework.** The working definition used throughout this narrative is the NCATE definition: “An underlying structure in a professional education unit that gives conceptual meanings through an articulated rationale to the unit’s operation, and provides direction for programs, courses, teaching, candidate performance, faculty scholarship and service, and unit accountability” (NCATE, 2004).

**Constructive dynamics.** Constructive dynamics as an educational research method follows the philosophy that knowledge, skill, and mental conceptualizations of ideas are constructed by the learner through complex interaction with their environment. The

theoretical base for constructive dynamical modeling of human development is rooted in the work of traditional developmental scientists Baldwin, Piaget, Vygotsky, and Werner, and contemporary theorists taking that work into new areas; such as Fischer and van Geert. Measurement and scale in these simulations involves defining and explaining processes, building dynamic explanations of developmental patterns, detailing capacity factors, and showing how these factors interact to produce an activity or behavior (Fischer & Bidell, 1998; Fischer & Kennedy, 1997; Fischer & Rose, 1999). Constructive dynamics could best be described as a mixed methods exploratory design based in simulation with models continuously refined by action research data, or “experimental theoretical psychology” (van Geert, 1998).

Council of Chief State School Officers (CCSSO). The Council of Chief State School Officers is the professional association of primary state school officials, be they Superintendents of Public Instruction, Commissioners of Education or other state designated administrators overseeing the operation of P-12 education systems in the states, the District of Columbia, the Department of Defense Education Activity, and five U.S. extra-state jurisdictions (<http://www.ccsso.org>).

Dispositions. The definition used to excerpt disposition codes for this analysis was the NCATE definition: “The values, commitments, and professional ethics that influence behaviors toward students, families, colleagues, and communities and affect student learning, motivation, and development as well as the educator’s own professional growth. Dispositions are guided by beliefs and attitudes related to values such as caring, fairness, honesty, responsibility, and social justice. For example, they might include a

belief that all students can learn, a vision of high and challenging standards, or a commitment to a safe and supportive learning environment” (NCATE, 2004).

Diversity. NCATE defines diversity as, “Differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation, and geographical area” (NCATE, 2004). The institutions reviewed in this study used this definition related to human groups and individuals and also to learning contexts, curriculum, perspectives, world views and the dynamic mix of diverse individuals in college and classroom situations. Related codes were multicultural (more oriented toward cultural group diversity than individual diversity) and perspective (the ability of teachers to visualize or understand diverse points of view how diversity may impact learning).

Institutional Report. The Institutional Report is the primary document prepared by the institution prior to an on-site accreditation visit by an NCATE or NCATE/state team, whose task is to validate the information through examination of first source documents, observations, and interviews. The report provides a context, description of the Conceptual Framework, and overview of how the six NCATE standards (NCATE, 2002) are being addressed.

Interstate New Teacher Assessment and Support Consortium (INTASC). The Interstate New Teacher Assessment and Support Consortium is an initiative of the Council of Chief State School Officers (CCSSO) that resulted in Ten Core Principles reflecting what new teachers should know and be able to do (CCSSO, 2000) and model performance-based standards and assessments for the licensure of teachers.

NBPTS. The National Board for Professional Teacher Standards (NBPTS) is a professional organization of teachers and other educators that has developed standards and a system for assessing the performance of experienced teachers seeking national certification.

NCATE. The National Council for the Accreditation of Teacher Education (NCATE) is a professional accreditation organization of national scope that accredits approximately 600 departments, divisions, colleges, or schools of education across the United States.

Neural network analysis. Neural network technology is used in many types of computer simulations designed to help researchers study how neural connections work, and has applications in other types of research as well. In this narrative, neural network analysis refers to the computerized scanning of electronic text-based narrative to pull out common threads of data for qualitative analysis.

Pedagogy. The term pedagogy encompasses professional knowledge about teaching and learning, the educational philosophies, concepts, theories and research; and the methods and strategies to apply that knowledge in varied teaching and learning contexts.

Professional standards. Standards developed and endorsed by professional education associations such as the National Council of Teachers of English, Council for Exceptional Children or National Association of Schools of Music. These associations typically develop standards for both P-12 student learning expectations and teacher preparation expectations.

Teacher education unit. The department, division, college or school within the institution that has the responsibility for all programs offered for the initial and advanced preparation of teachers and other school personnel, regardless of where these programs are administratively housed.

Teacher education program or teacher preparation program. A program of study that includes specialty area preparation, either as part of the program or pre-requisite, professional education preparation, and applied field experiences designed to prepare candidates to work as teachers or other professional P-12 school personnel. Programs are generally aligned to meet state standards for educational licensure.

#### Overview of Subsequent Chapters

Chapter II presents the structure and methodology of the research. The discussion of findings is presented in Chapters III and IV, using the two article format. Chapter III focuses on presentation of the disposition data from the sampled NCATE Institutional Reports. The Chapter III analysis compares those findings to the INTASC Ten Core Principles and the broader literature. Chapter IV compares the identified dispositions to research on student learning from cognitive science to determine how the dispositions stressed by education schools may impact the ways students engage with the learning environment and ultimately learn. Chapter IV includes discussion of how dispositional characteristics that may be influential on student learning factors could be studied further. Chapter V summarizes the main conclusions from both Chapters III and IV and provides recommendations for further research.



## CHAPTER II

### ORGANIZATION OF THE STUDY AND METHODOLOGY

Information on dispositions, as identified by NCATE-Accredited institutions in their Institutional Reports, was studied using a qualitative phenomenological approach (Creswell, 1998, 2002). The following three questions framed the research parameters and guided both the methodology and literature review.

1. What are the current commonalities and differences across practice at institutions of teacher education reviewed under the NCATE standards in regard to dispositions of teacher education candidates; and how do these identified dispositions compare to the broader literature base on teacher dispositions?
2. How do the dispositions identified by the NCATE institutions compare to research in the realm of cognitive science regarding potential impact of those dispositions on student learning?
3. What parameters and models can be recommended for further study that may enhance the growth of positive dispositions (those most likely to enhance student learning) in potential teachers?

#### Overview of General Methodology

A pilot study was conducted prior to undertaking the main study to test the methodology and design. Data from the full qualitative scan of documents were then gathered, coded, and categorized. The compiled findings were compared to the literature on dispositions and learning theory to determine possible connections between the actual

practices at institutions and the broader research base on dispositions, and between identified dispositions and student learning factors.

### *Pilot Study*

The research began with a pilot study using information from North Dakota Institutional Reports. NCATE and North Dakota accreditation visits were conducted jointly on a five-year rotation at the time of this study. All North Dakota institutions had dispositions under development, if not in place, since all were required to be reviewed under the new NCATE standards in this accreditation cycle. Even though the information used in the pilot was of public record, permissions letters were obtained from the North Dakota institutions in the pilot as a courtesy. Obtaining permissions also assured there was no potential for conflict of interest, since the researcher was employed with the North Dakota Education Standards and Practices Board which oversees teacher education accreditation in North Dakota at the time the pilot was conducted. The purpose of the pilot was to test the methodology and refine it before conducting the main study, and the information from the North Dakota pilot was not retained or included in the main study.

### *Main Study Overview and Data*

The main study began with the selection of a randomized sample of data from 100 colleges of education upon which a qualitative analysis of dispositions identified as desirable by the institutions could be conducted. All NCATE institutions were required to be reviewed under the new NCATE standards (including dispositions) beginning in the fall of 2001, with about 30 institutions reviewed in pilot studies prior to that date and 40 to 60 each semester since that date.

A total of 188 Institutional Reports that included dispositions had been submitted to NCATE at the time the study began. A randomized list of numbers was generated, applied to the numbered list of available institutions and 100 selected. At the time of the review, 68 of the 100 randomly selected Institutional Reports were available in CD format and were provided by NCATE for this analysis. As the qualitative analysis was conducted, a point of saturation was reached after surveying 25 Institutional Reports. No new codes were emerging and clear patterns in the institutions' framing of dispositions became evident. It was determined at that point that additional scans would not contribute new information. A total of 1,203 occurrences of codes extracted from these 25 reports were cleaned for duplicates and used in the subsequent analysis.

The sample was examined to determine how representative it was of the total NCATE institutions, and was found to be a reasonably stratified sample, with 15 public and 10 private institution. The sampled institutions identified themselves (with some overlap) as: comprehensive (17), historically black (1), land grant (3), liberal arts (11), of normal school origin (6), religiously affiliated (8), industrial (1), and research (3) institutions. Three offered basic teacher preparation programs only, and 22 both basic and advanced programs. Enrollment in teacher education in the year the report was submitted ranged from 37 to 4783. Demographics by size and region appear in Tables 1 and 2.

Table 1. Enrollment in Education Programs Studied

Enrollment in Education Programs in Report Year	Number of Institutions
37-500	5
501-1000	5
1001-2000	7
2001-3000	6
3001-4783	2

Table 2. Regional Location of Institutions Studied

Location of Institutions in U.S.	Number of Institutions
northeast	3
southeast	9
north-central	7
south-central	3
mountain/west	3

Institutions were assigned case numbers so as to not be individually identifiable during the coding or analysis phases. The case numbers were used to clean the data of duplicate occurrences of disposition codes within institutions and to cross-match by size and type of institution when conducting comparisons of disposition codes and categories.

### Methodology

The researcher analyzed information on dispositions in the main accreditation report, the Institutional Report, submitted by the colleges of education to the National Council on the Accreditation of Teacher Education (NCATE). The dispositional attributes of teachers these colleges surmised would predict successful practice were identified, excerpted into Microsoft Excel<sup>®</sup> coded, sorted and categorized. The dispositions identified were to be categorized using both traditional qualitative coding and neural network analysis software. The CatPac II<sup>®</sup> neural network software proved, in the pilot analysis, to work well for identifying and tallying key words once common words (i.e. and, the, institution, NCATE) were controlled. The software scans text documents in a matter of seconds and creates dendogram charts of common terms in both frequency and alphabetical order. This tool may be less effective than traditional qualitative coding in pulling out phrases that imply the same key words or concepts, but less subject to possible preconceptions of a human coder. After the pilot study was conducted, an examination of the photo-based scanning format of material available from NCATE resulted in the decision to use traditional qualitative coding only in the main study, since the CatPac II<sup>®</sup> neural network software is designed to work with text files.

Rescanning the NCATE files to text proved to produce errors in the text and would not have been an efficient way of managing the data or time within this particular study.

Data on dispositions were gathered from the Institutional Report sections on the Conceptual Framework for the education unit, Standard 1: Candidate Knowledge, Skills, and Dispositions, and Standard 2: Assessment System and Unit Evaluation. As the Institutional Reports were reviewed, it was sometimes difficult to separate characteristics identified as part of the education unit's Conceptual Framework (i.e. what sets apart or identifies graduates of the particular institution) and characteristics specifically identified as dispositions under Standard 1. The Conceptual Framework embodies for the education unit what it values as important characteristics of its graduates, and the dispositions similarly embody what the individual candidates exhibit as important values and characteristics in how they approaches the teaching profession and those with whom they works. Likewise, the candidate assessments in Standard 2 are framed around both characteristics from the Conceptual Framework and the characteristics identified in Standard 1, an integration that is not only desirable but required by NCATE Standard 2 to assure a valid, seamless and comprehensive assessment system.

This interconnectedness between the Conceptual Frameworks and dispositional characteristics, while desirable in practice, posed a challenge to the internal validity of the review. Some characteristics listed as dispositions were duplicated in the Conceptual Framework and the converse. Some characteristics that met the NCATE definition of dispositions appeared in the Conceptual Framework and assessments, but not the section on dispositions. To maintain the qualitative and quantitative integrity of the data, two actions were taken:

1. All characteristics that fell within the NCATE definition of dispositions were recorded, whether they were noted in the Conceptual Framework section of the report or the section on dispositions in Standard 1, to assure a comprehensive representation of stated dispositional characteristics valued by the institutions. All characteristics identified by the institutions as dispositions were included, whether or not they were specifically mentioned in the NCATE definition.
2. Multiple occurrences of a dispositional characteristic across the text of the Conceptual Framework, Standard 1 (dispositions) and Standard 2 (assessments) within the same institution were quantitatively considered as one occurrence of that dispositional characteristic. Duplicate codes that occurred under the same institutional case number were merged after the coding phase, before categorization.

The qualitative scan of the documents sought to reveal the views of colleges of teacher education regarding dispositions, and to look for patterns in definitions of important dispositions, the literature base supporting the selection of those dispositions, and means of assessment. Codes that emerged from the data in the main study were sorted and categorized using Microsoft Excel<sup>®</sup> and the emergent data examined through qualitative methods and some use of CatPac II<sup>®</sup> and SPSS<sup>®</sup>.

#### Expectations

It was anticipated that, at a minimum, the following descriptive statistics would come from the scan of documents: aggregate demographics on the institutions studied, categories of dispositions identified, groupings of philosophical and research bases for dispositions, and common or unique ways of evaluating desired dispositions. It was also

anticipated that related categories of student learning factors could emerge from the institutional document scan as well as the student learning literature review. After 25 Institutional Report scans were completed, a point of saturation was reached in which no new codes were emerging and clear patterns in the institutions' framing of dispositions became evident. It was determined at that point that additional scans would not contribute new information. A total of 1,203 occurrences of 95 individual codes were identified from these 25 reports before merging duplicates, 827 after merging, which were used in the subsequent categorization process and analysis.

Two-thirds of the institutions provided information on their literature base with references, some of which was specific to dispositions and some more generally relevant to the Conceptual Framework. Information on these foundations is included in the discussion in Chapters III and the Bibliography.

In nearly all cases, assessments specific to dispositions in such media as portfolios or student teaching evaluations could not be clearly separated from assessments of candidate competencies in general. It may be that these could be discerned in the specific questions, rubrics, benchmarks, or other criteria embedded in the assessment instruments themselves, some of which were referenced but not fully represented in the Institutional Reports. This level of analysis, the Institutional Report, therefore had somewhat limited value in identifying specific assessments of dispositions, as noted with the findings and discussion in Chapter III.

It is possible that future Institutional Reports could provide more information on assessments, since the information institutions provided on assessments of knowledge and performance skills was somewhat more specific in the reports than information on

dispositional assessments, more often naming specific assessment instruments or levels of acceptable performance. It could be that the lack of definition regarding dispositional assessments in the reports was partially due to the newness of the requirement and phase-in timeline provided by NCATE. The articulated assessment system required in Standard 2 was expected to be in full implementation by 2004, and these Institutional Reports were submitted across the time span from 2000-2004.

Buzz-words or generalities used to denote concepts in conceptual frameworks and dispositions can become “numbingly meaningless,” as one institution noted in a very forthright manner, simply too abstract to provide guidance unless explained in detail. The discussion, therefore, not only reports quantitative information on how often certain dispositions occurred, but attempts to capture the common and unique essences of meaning woven around the terminology in the institutional narratives. Maintaining these nuances was achieved by sorting the coded excerpts by category and subcategory in Microsoft Excel® and scanning across the actual excerpts for meaning, assuring all pertinent points were included in the final framing of each particular code. Definitions distilled in this manner appear in the codebook, attached as Appendix C.

The emergent findings from the compiled data were examined for patterns of practice in defining dispositions; then compared to INTASC and the broader research. While this was, overall, a qualitative study, some quantitative analysis was conducted on the frequencies of code occurrences to assure internal validity. The levels of correlation were strong within the INTASC Principles ( $r = .73$ ), that is, between the occurrences of codes across the full text of the INTASC Principles and occurrences in the dispositions section only; and very strong within the Institutional Reports ( $r = .80$  to  $r = .86$ ), that is,



between the dispositions section and Conceptual Framework, or these sections and the total codes identified from the Institutional Reports. These strong levels of relationship gave validation to the original decision to include information pertinent to dispositions whether it occurred in the Institutional Report section on dispositions or in the Conceptual Framework. This general statement should not be taken to mean that individual codes were always similar in occurrence across the sections of documents, only that the general occurrence of the codes overall was similar. There were some individual codes in which occurrences were not at all similar across the sections of the documents, and this dissimilarity was examined through nonparametric Chi square statistics and graphing the descriptive frequencies.

A Chi square analysis was conducted to determine whether the frequency distribution was similar across the sections of the documents scanned. Frequencies in each subcategory were summed and various sections compared. There was not a significant difference in the frequency of distribution of codes across the subcategories when comparing the dispositions-only portions of the Institutional Reports and the dispositions-only sections of the INTASC Ten Core Principles. This indicated a strong agreement between the sampled NCATE Institutional Reports' framing of dispositions and the INTASC Ten Core Principles' stated expectations for new teacher dispositions.

There was a significant difference ( $\chi^2 = 25.19, p > .01, 8 df$ ) between the Institutional Report Conceptual Frameworks and Institutional Report dispositions. The differences, mirrored in the charted results in Figures 2-10, were predominantly due to subcategory II.4.a Structure for Learning, and to a lesser extent II.2.c. Interpersonal Values and II.3.1. Character. The greatest differences were apparent in comparing the

code subcategories in the full text of the INTASC Principles and the combined Conceptual Framework and dispositions sections of the Institutional Reports ( $\chi^2 = 51.27$ ,  $p > 0.1$ , 8 *df*). Once again, the difference was predominantly due to subcategory II.4.a Structure for Learning, with lesser levels of difference appearing in regard to II.2.a Personal Values, II.2.b. Interpersonal Values, and II.3.1. Character. In general, these differences appeared to be due to how, and whether, the framers of the documents defined certain dispositions apart from skills, and the purpose and level of analysis represented by the documents themselves. These general differences, and the nuances of similarities and differences for individual codes are discussed later; in Table 6: *Rank-order Comparison of the 25 Most Frequently Occurring Codes in the INTASC Ten Core Principles and the Sample of NCATE Institutional Reports*; and in graphs by subcategory and code within the discussion of *Codes Categorized: Second Analysis* (Figures 2 through 10).

The presentation of the findings follows in Chapters III and IV in two-article format. Chapter III focuses on presentation of the data regarding identified dispositions and the examination of those findings relative to the dispositions literature base. Chapter IV compares the identified dispositions to research on student learning from cognitive science to see how the dispositions stressed by education schools may impact the ways students engage with the learning environment and ultimately learn. Chapter IV includes discussion of how dispositional characteristics that may be influential on student learning factors could be studied further. Chapter V summarizes the main conclusions and recommendations from both Chapters III and IV.

## CHAPTER III

### TEACHER DISPOSITIONS: CURRENT PRACTICES AT THE SAMPLED NCATE-ACCREDITED INSTITUTIONS

Inclusion of the phenomenon of teacher dispositions in both the accreditation standards of the National Council for the Accreditation of Teacher Education (NCATE, 2002) and the Interstate New Teacher Assessment and Support Consortium's (INTASC) Ten Core Principles (CCSSO, 2000) has prompted increased scrutiny of what type of dispositional characteristics are likely indicators of successful practice. Chapter III presents findings from the qualitative analysis of dispositions reported as valued by a randomized sample of colleges of education accredited by NCATE, and a comparison of these dispositions to the broader literature base. Data were collected from the Institutional Reports these institutions submitted to NCATE, from the sections related to the institution's Conceptual Framework and Standards 1 and 2.

The term "disposition" as it is presented here is not the same as "personality" or "operational style," or the vernacular definition of the word "disposition." The NCATE and INTASC definitions of dispositions focus on specific ways potential teachers think about students, teaching practices, and the purposes of schooling in the broader context; those things that ultimately govern their attitudes toward students and peers, their design of learning experiences, and their behaviors in the classroom and within the profession.

## Research Parameter Addressed

Chapter III addresses the first research parameter: What are the current commonalities and differences across practice at institutions of teacher education reviewed under the NCATE standards in regard to dispositions of teacher education candidates; and how do the identified dispositions compare to the broader literature base on dispositions? The discussion reports not only quantitative information on how often certain dispositions occurred, but attempts to capture the common and unique essences of meaning woven around the terminology in the institutional narratives. This detail was maintained by sorting the coded excerpts by category and subcategory in Microsoft Excel<sup>®</sup> and scanning across the actual excerpts for meaning and nuance, assuring all pertinent points were included in the final framing of each particular code. Definitions distilled in this manner appear in the codebook, attached as Appendix C.

### Presentation of Findings and Dispositions Literature Review

Given the diversity of types, sizes and missions of institutions represented in the sample, the dispositional qualities expected of potential teachers showed striking similarity across institutions and a strong reflection of the precepts in the INTASC Ten Core Principles. The primary area of difference was in how the institutions framed and perceived these dispositional qualities within the language of their unique missions and philosophical foundations. For example, the disposition that a teacher should persist in helping all of the students in his/her charge be successful was sometimes expressed in the familiar phrase “all students can learn,” sometimes in terms of equity and social justice for the traditionally underserved, sometimes as a religious belief in the dignity and worth of all human beings, and sometimes as an endorsement to value the vast array of

innovative contributions very different individuals can make within the complexity of the classroom environment and society writ large. This variety is discussed within the presentation of findings and is also apparent in the codebook descriptions in Appendix C.

Some of the institutions recorded very concise articulations of the dispositions they felt important and had a clear idea of exactly what they felt constituted a “disposition,” such as “accepts each student as a person worthy of respect.” Other language was more ambiguous, often mingling skills and dispositions together. For instance, an institution articulated as a desired disposition that the candidates accurately assess students who may need special accommodations, rather than articulating that the candidates be disposed to the belief that all students be provided appropriate accommodations if needed for opportunity to learn. This ambiguity may be understandable, again, because the Institutional Reports are written with concrete evidence in mind, that is more easily represented in a demonstration or action than as an attitude or belief, about which an evaluator may ask, “How do you know the candidate accepts each student as a person worthy of respect?” Clarification of this issue begs asking the question again, “Exactly what is a disposition, and how does it differ from what an individual knows and can do; does it *need* to differ?” That question turned out to be very important to the implications for further study and is revisited at the end of Chapter III.

#### *Dispositions Identified within the NCATE Institutional Reports*

A total of 1,203 occurrences of 95 individual codes were identified from the 25 reports before merging duplicates, 827 after merging, and were used in the subsequent categorization process and analysis. The 95 codes were grouped into 9 subcategories

within 4 main categories for comparison to the broader literature base. Definitions associated with these codes were paraphrased from the actual language in the Institutional Reports and appear in the codebook in Appendix C.

Table 3. Alphabetical Listing of 95 Disposition Codes Identified

### ALPHABETICAL LISTING OF CODES IDENTIFIED

1. academic	33. empowerment	65. perspective
2. accommodating	34. engaging	66. planning
3. active learning	35. enthusiasm	67. pluralistic
4. adaptive	36. equity	68. positives
5. advocacy	37. ethical	69. problem-solver
6. agency	38. facilitator/guide	70. professional
7. alignment	39. fairness	71. professionally grounded
8. all students	40. faith	72. progressive
9. analytical	41. global	73. public education
10. assessment	42. heritage	74. reasoned
11. authentic	43. high expectations	75. reflective
12. caring	44. humanistic	76. research
13. character	45. improvement	77. resilient
14. cognitive	46. initiative	78. resourceful
15. collaborative	47. innovative	79. respect
16. collegial	48. inquiry	80. responsible
17. commitment	49. inspiration	81. responsive
18. communication	50. integration	82. role model
19. community	51. integrity	83. safety
20. complexity	52. interpersonal	84. self-motivated
21. confidentiality	53. intrapersonal	85. sensitivity
22. constructivist	54. leadership	86. service
23. contextual	55. learner-centered	87. social justice
24. creative	56. liberal arts	88. supportive
25. critical thinking	57. life-long learning	89. stewardship
26. culture	58. motivator	90. synthesis
27. curious	59. multiple approaches	91. teacher/learner relationship
28. current	60. open	92. technology
29. democratic	61. passion for learning	93. thoughtful
30. developmental	62. pedagogy	94. vision
31. dignity	63. persistence	95. work ethic
32. diversity	64. personal well-being	

Codes most commonly associated with the concept of dispositions, such as ‘caring’, ‘ethical’, ‘interpersonal’ and ‘respect’ had more occurrences in the sections on dispositions. Codes that reflected both goals of the institution and goals for individuals, such as a belief in striving for excellence in academics and pedagogy or valuing diversity,

tended to have more occurrences in the Conceptual Frameworks. Five codes: 'enthusiasm', 'fairness', 'safety', 'supportive', and 'work ethic'; that appeared in the dispositions sections of the reports did not also appear in the Conceptual Frameworks. Four codes that appeared in the Conceptual Frameworks, but not the dispositions sections were representative of structure and philosophy: 'heritage', 'planning', 'pluralistic' and 'progressive'.

It should be noted that five codes: 'academic', 'assessment', 'pedagogy', 'diversity' and 'technology', were reflected strongly across all of the institutions, which is not surprising, since these are key themes in the NCATE Conceptual Framework structure and infused throughout the standards. It was clear when scanning the full text of the Institutional Reports, these five codes occurred in all 25 cases in multiple forms.

What was interesting about the institutions' approach to the diversity strand was that the institutions showed their own unique perspectives in valuing diversity. There was evidence in the narratives that valuing diversity was not merely a rubber stamp of the standards' requirement, but that the institutions had thought deeply about what diversity, inclusiveness, and commitment to the larger society meant to them through the eyes of their own values and conceptual frameworks. These ideals were reflected primarily in the code for 'diversity', but also in 'perspective', 'culture', 'dignity', and 'respect':

- understand, appreciate, and work effectively with others whose cultural experiences are different from their own;
- diversity recognized as a strength, valued and respected at the individual, social, cultural, and global levels;
- curriculum diversity; recognize content contributions of diverse groups;
- good will, respect and equality;

- knowledge of different cultural and ethnic groups within the world community and of influences on one's life, sense of fair-mindedness, resiliency;
- sensitive to community and cultural norms, customs and values;
- appreciation of diversity in learning preferences;
- respectful of achievement and socioeconomic differences;
- increasingly diverse and inclusive community of learners in a changing, technology-driven environment;
- appreciation of human diversity and aesthetics;
- engages in inclusion;
- striving for a democratic society in which diversity and inclusion are affirmed in all realms social and political;
- value ethnic and multicultural experiences; aware of self and responsibility within a multicultural community;
- appreciating the worth, integrity, and dignity of each individual;
- cognizant of critical issues related to ethnicity, race, social class, gender and individual differences;
- understands how culture frames learning;
- rejection of bigotry and hatred; promotion of justice, honor, and mutual trust;
- open-minded; accepts and welcomes diversity, open to new ideas; and
- encourage study/understanding of dialectic/diverse approaches to education.

Diversity and technology were reflected both as a physical or human resource emphasis and in attitudes or beliefs expected of teacher candidates. Technology as a disposition included phrases such as:

- believes in the importance of media literacy;
- developmentally appropriate instructional strategies, materials, and technology reflecting individual, cultural, and home environmental needs; and
- willingly uses technology in plans for effective learning environments and experiences.



The term ‘assessment’ often occurred in the Conceptual Framework in regard to the overall assessment system of the education unit as well as in regard to the candidate’s thinking about the appropriate roles of assessment. The occurrences noted in the dispositions data represent the latter; e.g. valuing multiple assessments in evaluating students’ progress. These reflected candidates’ attitudes toward assessment. As noted earlier, the education unit’s assessments of dispositions could not be effectively distinguished from their assessments of candidate knowledge and performances or pedagogical skills.

*Frequencies of Code Occurrences*

With the disclaimers noted above in mind, the 25 most commonly occurring dispositional codes across the 25 institutions are presented in Table 4. The codes appear in rank order by frequency. The top 25 commonly occurring codes were determined after duplicate codes within the same institution were merged.

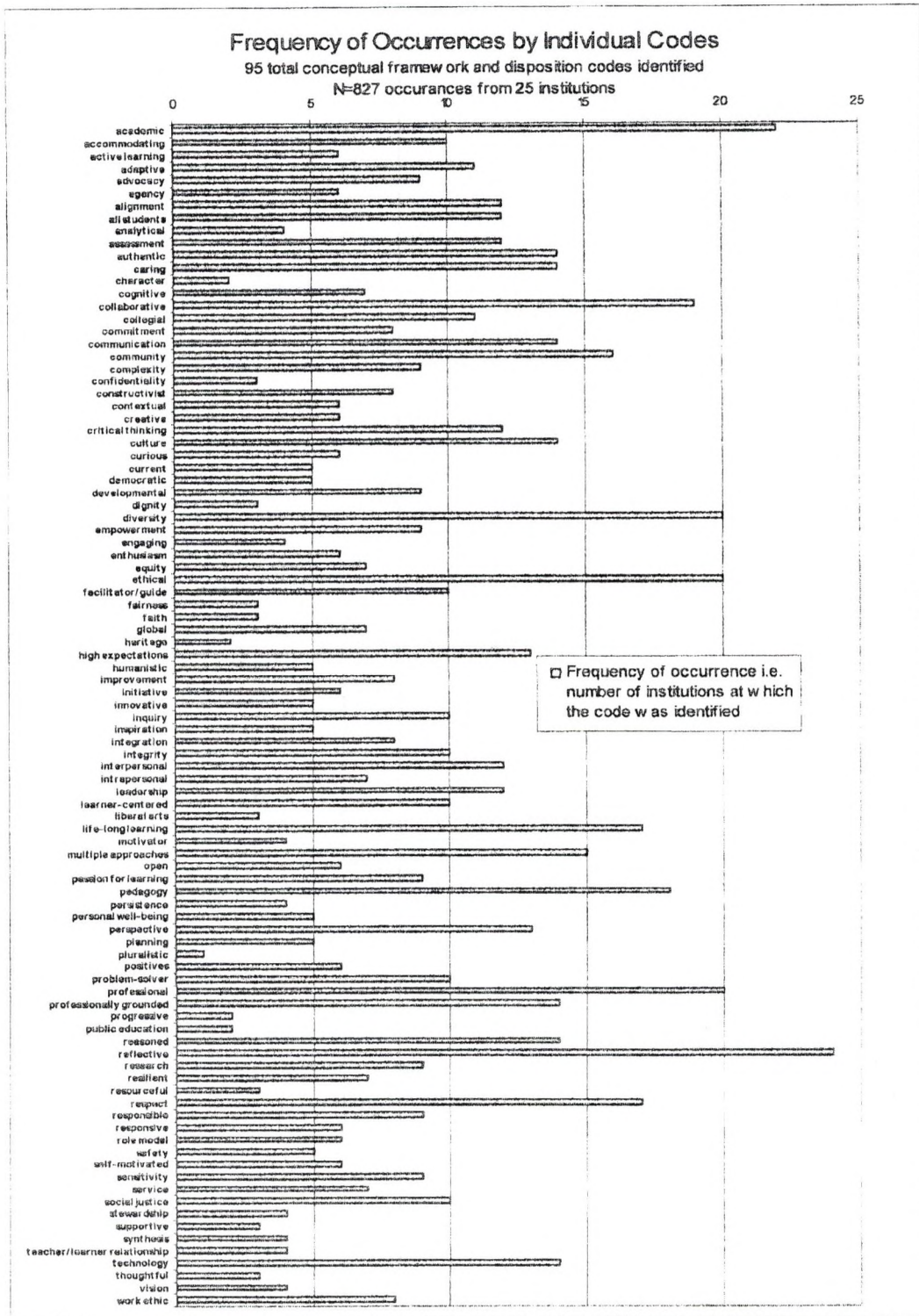
Table 4. Twenty-Five Most Commonly Occurring Dispositional Codes across the 25 Institutions Sampled.

TWENTY-FIVE MOST COMMONLY OCCURRING DISPOSITIONAL CODES ACROSS THE 25 INSTITUTIONS SAMPLED.

- |                       |                             |                       |
|-----------------------|-----------------------------|-----------------------|
| 1. reflective         | 10. community               | 19. high expectations |
| 2. academic           | 11. multiple approaches     | 20. perspective       |
| 3. professional       | 12. professionally grounded | 21. critical thinking |
| 4. collaborative      | 13. reasoned                | 22. interpersonal     |
| 5. diversity          | 14. caring                  | 23. leadership        |
| 6. ethical            | 15. communication           | 24. assessment        |
| 7. pedagogy           | 16. culture                 | 25. alignment         |
| 8. life-long learning | 17. authentic               |                       |
| 9. respect            | 18. technology              |                       |

Frequencies for each individual code are represented in Figure 1. These individual rankings are also based on the number of institutions at which the code occurred after duplications within the Conceptual Frameworks and dispositions sections within each institution were merged.

Figure 1. Frequency of Disposition Occurrences Alphabetically by Individual Codes.



### Codes Categorized: First Analysis

Categories related to the individual themselves, their dispositions toward others, the work, and the profession emerged quite naturally in the initial analysis. Categories and subcategories identified from this perspective are outlined below and presented with the disposition codes in Table 5:

1. Dispositions regarding self
  - a. Self as a knowledgeable individual
  - b. Self as a person of professional character
  - c. Self as an actor with agency to produce change
2. Dispositions regarding students and others
  - a. Guiding beliefs about students and others
  - b. Actions toward students and others
3. Dispositions regarding approach to the work of education
  - a. Approach to “teacher work”
  - b. Approach to “student work”
4. Dispositions regarding the profession and purpose of education
  - a. Framing professionalism
  - b. Framing purpose

It was interesting that this first, most obvious, emergence of categories followed a ‘levels of analysis’ mindset, much as one would see if conducting an actual accreditation visit or evaluating a program curriculum. This structure should not have been surprising, since the reports are written for the purpose of providing evidence for such reviews.

Table 5: Disposition Codes That Emerged from the Qualitative Analysis of NCATE Institutional Reports: Initial Groupings by Category and Sub-category

DISPOSITION CODES THAT EMERGED FROM THE QUALITATIVE ANALYSIS OF NCATE INSTITUTIONAL REPORTS: INITIAL GROUPINGS BY CATEGORY AND SUB-CATEGORY			
1. Dispositions Regarding Self	2. Dispositions Regarding Students and Others	3. Dispositions Regarding Approach to the Work of Education	4. Dispositions Regarding the Profession and Purpose of Education
<u>1.a. SELF AS A KNOWLEDGEABLE INDIVIDUAL</u> academic analytical creative life-long learning reasoned	<u>2.a. GUIDING BELIEFS ABOUT STUDENTS AND OTHERS</u> accommodating all students cognitive collaborative collegial contextual developmental high expectations learner-centered perspective respect	<u>3.a. APPROACH TO "TEACHER WORK"</u> assessment commitment communication confidentiality current enthusiasm equity fairness improvement innovative pedagogy persistence respect planning research technology	<u>4.a. FRAMING PROFESSIONALISM</u> advocacy alignment complexity ethical leadership professional professionally grounded stewardship synthesis vision
<u>1.b. SELF AS A PERSON OF PROFESSIONAL CHARACTER</u> character integrity intrapersonal open passion for learning personal well-being reflective role model self-motivated work ethic	<u>2.b. ACTIONS TOWARD STUDENTS AND OTHERS</u> caring dignity engaging empowerment facilitator/guide inspiration interpersonal motivator positives teacher/learner relationship responsible safety sensitivity supportive thoughtful	<u>3.b. APPROACH TO "STUDENT WORK"</u> active learning authentic constructivist critical thinking curious inquiry integration multiple approaches	<u>4.b. FRAMING PURPOSE</u> community culture democratic diversity faith global heritage humanistic liberal arts pluralistic progressive public education service social justice
<u>1.c. SELF AS AN ACTOR WITH AGENCY TO PRODUCE CHANGE</u> adaptive agency initiative problem-solver resilient resourceful responsive			

One can almost trace the assessment documents that would be reviewed through these categories, from 1) the knowledge-base entrance exams and philosophy statements candidates submit upon entrance into teacher education, through 2) orientation to the culture of the teaching environment, 3) skill development in methods and actual teaching experiences, to 4) broad reflection on the larger purpose and original foundations of those experiences and, finally, preparation for continued involvement as an active professional in the field.

### *Comparisons of the Emergent Codes to the INTASC Principles*

The overall codes identified from the NCATE Institutional Reports were evaluated for consistency and compared back to the INTASC Ten Core Principles. The Table 6 data were collected and coded from the Conceptual Framework and the disposition section of Standard 1 in the Institutional Reports, those two sections combined, and across the full text of the INTASC Principles and from the INTASC sections on dispositions only.

**Table 6: Rank-order Comparison of the 25 Most Frequently Occurring Codes in the INTASC Ten Core Principles and the Sample of NCATE Institutional Reports**

RANK-ORDER COMPARISON OF THE 25 MOST FREQUENTLY OCCURRING CODES IN THE INTASC TEN CORE PRINCIPLES AND THE SAMPLE OF NCATE INSTITUTIONAL REPORTS					
	INTASC: From Full Text of Ten Core Principles	Institutional Reports: Conceptual Framework and Standard 1 & 2	Institutional Reports: Conceptual Frameworks Section Only	INTASC: From Dispositions Section Only	Institutional Reports: Dispositions Section Only
1.	assessment	reflective	academic	collaborative	reflective
2.	learner-centered	academic	reflective	respect	respect
3.	pedagogy	collaborative	authentic	empowerment	diversity
4.	reflective	diversity	pedagogy	learner-centered	ethical
5.	collaborative	ethical	collaborative	developmental	professional
6.	multiple approaches	professional	accommodating	commitment	collaborative
7.	engaging	pedagogy	technology	positives	caring
8.	developmental	life-long learning	perspective	assessment	life-long learning
9.	responsive	respect	life-long learning	reflective	community
10.	communication	community	professionally grounded	supportive	all students
11.	diversity	multiple approaches	reasoned	responsive	communication
12.	planning	professionally grounded	culture	multiple approaches	interpersonal
13.	cognitive	reasoned	diversity	life-long learning	high expectations
14.	professionally grounded	caring	ethical	communication	academic
15.	inquiry	communication	professional	diversity	collegial
16.	complexity	culture	facilitator/guide	engaging	work ethic
17.	academic	authentic	assessment	all students	multiple approaches
18.	interpersonal	technology	multiple approaches	complexity	pedagogy
19.	community	high expectations	developmental	high expectations	professionally grounded
20.	positives	perspective	critical thinking	academic	reasoned
21.	empowerment	critical thinking	community	cognitive	culture
22.	problem-solver	interpersonal	commitment	adaptive	integrity
23.	respect	leadership	advocacy	critical thinking	responsible
24.	adaptive	assessment	leadership	open	alignment
25.	critical thinking	alignment	learner-centered	sensitivity	complexity

### *Comparison of the Initial Categories to the Disposition Literature*

When the main categories of disposition codes were compared to the literature, the categories paralleled almost exactly the categories outlined in Arthur W. Combs's thirty years of work studying what he termed the 'caring professions' (Combs, 1974; Wasicsko, 2002). Combs identified 'perceptions' that set apart effective from ineffective teachers, grouped according to the following categories:

1. perceptions about the subject matter;
2. perceptions about self;
3. perceptions about others;
4. perceptions about the teaching task; and
5. general frame of reference.

When the data from the NCATE Institutional Reports were analyzed in this study, codes for what could be termed dispositions about the subject matter fell out across the categories of self (e.g. academic), others (e.g. high expectations), work (e.g. inquiry and research), and framework (e.g. professionally grounded) as well as in the first category: 1.a. Self as a Knowledgeable Individual. This dispersion indicates multiple ways to perceive subject matter in terms of one's own expertise, expectations framed for students, the methods by which the subject matter is approached and learned, and the need for continued professional interaction with peers and research as the subject matter evolves.

Dispositions about the work of teaching itself that emerged in this study included how the individual approaches "teacher work" and how they design and analyze "student

work.” This distinction may indicate a perception of the work of education as more interactively constructivist and reflective, and less as a teacher-performed task.

Emphasis on collaboration and communication skills reflects knowledge of adult learning in relation to colleagues, parents and the larger education community and the need to connect with the world outside the classroom to make schooling meaningful for all students (Knowles, 1998; Vella, 1994). Emphasis on both teacher work and student work reflects today’s emphasis on analysis of cause and effect in evidence-based learning and micro-development of skills (NCATE, 2002; Schwartz, 2001).

Self as a knowledgeable individual and person of character are concepts that have been reflected in state teacher licensure requirements for over a century (NASDTEC, 2003), but self as an actor with agency to produce change may be a more recent phenomenon for those who teach in P-12 settings. Ideas about personal agency and a framework for professionalism reflect education’s desire for coming-of-age as a profession with a unified vision for excellent practice that was not necessarily in place fifty years ago (Jensen, 2003a; Lieberman, 1956).

Usher (2002) later re-evaluated Comb’s work and distilled the following five important teacher dispositions, which he presented at the First Annual Symposium on Educator Dispositions in Richmond, Kentucky in 2002:

1. empathy;
2. positive view of others;
3. positive view of self;
4. authenticity; and
5. meaningful purpose and vision.

Usher's working definition of dispositions was: "The qualities that characterize a person as an individual: the controlling perceptual (mental, emotional, spiritual) qualities that determine the person's natural or usual ways of thinking and acting" (Usher, 2002).

#### Codes Categorized: Second Analysis

In light of the primary purpose of this study, to more clearly identify and categorize teacher dispositions in order to better evaluate and nurture desirable dispositions in teacher preparation, it seemed an approach focused on the individual's identity and development may be more useful to that end. The initial, accreditation-oriented groupings could have arisen partially from the structure of the Institutional Reports themselves or from the researcher's prior experience with accreditation.

With the central concept of individual development in mind, another perspective on categorization emerged. Similar developmental concepts were grouped together, regardless of whether they existed in the levels of analysis of self, others, work, or the profession. The resultant groupings are more person-oriented, and less organization or analysis-oriented. The second analysis, represented in Table 7, fell out along lines based in developmental and cognitive science with main categories clustering around the cognitive, emotional, social, and contextual. This model could serve a more constructivist, rather than organizational, approach to teacher development.

1. Dispositions in the cognitive realm
  - a. Knowledgeable
  - b. Thinking skills
2. Dispositions in the realm of values and emotions
  - a. Personal values



- b. Interpersonal values
- c. Community values
- 3. Dispositions in the social realm
  - a. Character
  - b. Leadership
- 4. Dispositions in the contextual realm
  - a. Structure for learning
  - b. Philosophy

This model bears out the precept that dispositional knowledge and abilities, like other knowledge and abilities, are constructed within the individual through interaction with the environment. The four main categories in Table 7 are somewhat different from those that presented in Table 5. Category II.1 still deals with many aspects of self, but with a focus on the cognitive. Category II.2 includes values that inevitably have deep connections to emotional systems. These emotion/value attributes reach outward, including others as in the initial model. Category II.3 embodies characteristics that govern others' social perception of the individual. These socially-grounded dispositional factors impact the individual's ability to operate effectively within the educational environment. Category II.4 reflects the structure and foundations for the environment in which meaning is constructed.

Table 7: Second Qualitative Analysis of Disposition Codes from the NCATE Institutional Reports: Groupings by Category and Sub-category using a Developmental Model

SECOND QUALITATIVE ANALYSIS OF DISPOSITION CODES FROM THE NCATE INSTITUTIONAL REPORTS:  
GROUPINGS BY CATEGORY AND SUB-CATEGORY USING A DEVELOPMENTAL MODEL

II.1. Cognitive	II.2. Emotional	II.3. Social	II.4. Contextual
<u>II.1.a. Knowledge</u> academic cognitive current liberal arts life-long learning passion for learning professionally grounded research	<u>II.2.a. Personal Values</u> caring dignity faith personal well-being service social justice stewardship supportive	<u>II.3.a. Character</u> accommodating character commitment confidentiality enthusiasm ethical integrity persistence positives professional resilient responsible self-motivated work ethic	<u>II.4.a. Structure for Learning</u> active learning assessment authentic contextual improvement integration learner-centered multiple approaches pedagogy planning technology
<u>II.1.b. Thinking Skills</u> adaptive analytical creative critical thinking curious innovative inquiry intrapersonal problem-solver reasoned reflective synthesis thoughtful	<u>II.2.b. Interpersonal Values</u> collaborative collegial communication fairness interpersonal open respect responsive sensitivity teacher/learner relationship	<u>II.3.b. Leadership</u> advocacy agency empowerment engaging facilitator/guide initiative inspiration leadership motivator resourceful role model safety	<u>II.4.b. Philosophy</u> alignment all students complexity constructivist developmental humanistic high expectations perspective pluralistic progressive public education vision
	<u>II.2.c. Community Values</u> community culture democratic diversity equity global heritage		

The model reflects the interactive balance that is the basis of human growth and development, the internal interacting with the external, revising mental representations that govern subsequent actions and consequences, continuing across the lifespan (Fischer, 1978; Karmiloff-Smith, 1992; Knowles, 1998). The age at which most candidates enter teacher education is within a key period for moral development, making this prime period for many dispositions identified (Fischer, Yan, & Stewart, 2003; Kohlberg, 1984). There is a slight shift in this model within the main categories, leaning now less toward skill development

and more toward internal and philosophical aspects. While the initial model is very useful from an accreditation standpoint, where concrete evidence of ability is required, this second perspective with a mindset toward development may prove useful in teasing out how to better evaluate and “grow” dispositions perceived as desirable.

Analyses of the total and individual code frequencies are not dependent on whether the initial, accreditation-oriented model or second, development-oriented model is applied. Subsequent discussions of categories and subcategories will be based on the developmental model.

#### *Further Comparisons to the Dispositions Literature Base*

A number of comprehensive overviews of literature on dispositions have taken place within the last five years due to the increased focus on this facet of preparation. Stronge’s (2002) *Qualities of Effective Teachers* is perhaps best known among educators because of its extensive circulation by the Association for Supervision and Curriculum Development (ASCD). Stronge (2002) identified important dispositions of effective teachers under the heading of “the teacher as a person,” synthesizing dispositions that appeared across 34 published works, some of which were research studies and some of which were reflective arguments or comparative studies of research.

Other overviews were presented at the *First Annual Symposium on Educator Dispositions* in Richmond, Kentucky in 2002, including Usher’s reflection on Comb’s work mentioned earlier and the following review by Taylor and Wasicsko (2000) in *The Dispositions to Teach*, which included 46 references. Taylor and Wasicsko’s definition of dispositions included: “the personal qualities or characteristics that are possessed by individuals, including attitudes, beliefs, interests, appreciations, values, and modes of

adjustment” (Taylor & Wasicsko, pg. 2). They advocated that meaningful teaching is determined by the necessary and inevitable interplay of knowledge, pedagogical skill and dispositions, and provided a summary of literature on definitions, represented in Table 8. The first seven columns are from Taylor and Wasicsko, and the final, right-hand column is from Stronge’s (2002) compilation.

In order to provide a visual comparison to the dispositional codes identified in this analysis of NCATE Institutional Reports, those codes that correspond to the Taylor and Wasicsko data appear in Table 8 in brackets [ ]. All of the ideas on dispositions framed in the Wasicsko (2000) and Strong (2002) compilations could be matched to a code identified in the NCATE Institutional Reports. Overall the comparisons to prior research showed a very similar range of comments regarding dispositions, although varying concepts were stressed in different studies. This comparison to prior studies shows evidence of general consensus and a continuing emphasis on key dispositional factors from varied perspectives.

Table 8. Dispositions in Literature Summarized by Taylor and Wasicsko (2000) and Stronge (2002).

SUMMARY OF DISPOSITIONS LITERATURE SYNOPSISIZED BY TAYLOR AND WAISCKO (2000) AND STRONGE (2002)  
 Related disposition codes from the NCATE Institutional Report data have been inserted as reference points in brackets [ ].

Demmon-Berger (1986)	Leithwood (1990) Reiman and Thies-Sprinthall (1998)	Good and Brophy (1994)	Cotton (1995)	Collinson (1996)	Wubbles, Levy, Brekelmans (1997)	Combs (1975):	Stronge (2002)
<ul style="list-style-type: none"> <li>• strong grasp of subject matter [academic]</li> <li>• use of systematic instruction techniques [pedagogy]</li> <li>• high expectations of students and themselves [high expectations]</li> <li>• willingness to tailor teaching to students' needs [accommodating]</li> <li>• belief in their own efficacy [agency]</li> <li>• use of varied teaching strategies [multiple methods, pedagogy]</li> <li>• use of preventative discipline [positives caring]</li> <li>• use of a democratic approach [democratic]</li> <li>• task-oriented [planning]</li> <li>• concerned with perceptual meanings rather than facts and events [inquiry]</li> <li>• comfortable interactions with others [interpersonal]</li> <li>• good management skills [planning]</li> <li>• accessibility to students outside of class [accommodating]</li> <li>• flexibility and imagination [resilient, open, creative]</li> </ul>	<ul style="list-style-type: none"> <li>• reflective [reflective]</li> <li>• capable of understanding the assumptions, beliefs, and values behind choices [perspective]</li> <li>• capable of balancing the student's intellectual achievements and interpersonal learning in the classroom [multiple approaches]</li> <li>• used a collaborative approach with students to control the classroom [collaboration, democratic]</li> <li>• encouraged creativity and flexibility to create interactive classroom [creative, innovative, engaging]</li> </ul>	<ul style="list-style-type: none"> <li>• set high, realistic goals [high expectations]</li> <li>• present information in ways to meet student needs [multiple approaches, accommodating]</li> <li>• monitor student progress [assessment]</li> <li>• provide opportunities for students to apply what they learn [authentic]</li> </ul>	<ul style="list-style-type: none"> <li>• clear standards for classroom behavior [planning]</li> <li>• clear and focused instruction [planning, pedagogy]</li> <li>• effective questioning techniques [pedagogy]</li> <li>• provide feedback [assessment, communication]</li> <li>• use variety of assessment strategies [assessment, multiple approaches]</li> <li>• positive interactions with students [positives, interpersonal]</li> </ul>	<ul style="list-style-type: none"> <li>• professional knowledge [academic]</li> <li>• interpersonal knowledge [interpersonal]</li> <li>• continuous learning [life-long learning]</li> <li>• reflective [reflective]</li> <li>• ethic of caring [caring, ethical]</li> <li>• strong work ethic [work ethic]</li> <li>• curiosity [curious]</li> <li>• creativity [creative]</li> <li>• flexibility [resilient, open]</li> <li>• display of care and compassion [caring]</li> <li>• respect of self and others [respect]</li> <li>• courage [initiative]</li> <li>• pride of effort</li> <li>• dedication [commitment]</li> <li>• doing one's best [high expectations]</li> </ul>	<ul style="list-style-type: none"> <li>• strong student-teacher relationships [student/teacher relationships]</li> <li>• allow student freedom and give them responsibility [facilitator/guide, empowerment]</li> <li>• skilled in analyzing student's needs and meeting those needs [assessment, reflective, accommodating]</li> <li>• empathetic but in control [sensitive, leadership]</li> </ul>	<ul style="list-style-type: none"> <li>• perception of self as able, positive [agency]</li> <li>• identifies with diverse groups [diversity]</li> <li>• perception of others as able, dependable, and worthy [dignity]</li> <li>• perception of education as freeing, self revealing and larger [life-long learning, empowerment passion for learning]</li> <li>• frame of reference is people-oriented, open and focused on personal meaning [interpersonal humanistic]</li> </ul>	<ul style="list-style-type: none"> <li>• caring [caring]</li> <li>• fairness and respect [fairness, respect]</li> <li>• interactions with students [teacher/student relationships]</li> <li>• enthusiasm and motivation [enthusiasm, motivator]</li> <li>• attitude toward teaching [professional]</li> <li>• reflective practice [reflective]</li> </ul>

A dendrogram was executed in CatPac II® (Table 9) to analyze the frequency of codes identified across the Taylor and Wasicsko (2000) and Stronge (2002) studies that also appeared in this study of NCATE reports. Codes that were ranked in the top 25 from the Institutional Reports and the literature review were, in alphabetical order:

academic	diversity	multiple approaches
assessment	high expectations	pedagogy
caring	interpersonal	professional
collaborative	leadership	reflective
culture	life-long learning	

Table 9. Dendrogram of Dispositions Identified in the Literature Review.

DENODOGRAM OF DISPOSITIONS IDENTIFIED IN THE LITERATURE REVIEW

WORD	FREQ	PCNT	FREQ	PCNT	ALPHABETICAL LISTING
AGENCY	5	5.6	26	31.3	ACADEMIC
ASSESSMENT	5	5.6	27	32.5	ACCOMMODATING
CARING	5	5.6	31	37.3	ADVOCACY
PEDAGOGY	5	5.6	21	25.3	AGENCY
REFLECTIVE	5	5.6	35	42.2	ASSESSMENT
ACADEMIC	4	4.5	22	26.5	CARING
ACCOMMODATING	4	4.5	25	30.1	COLLABORATIVE
CREATIVE	4	4.5	26	31.3	COMMITMENT
EMPOWERMENT	4	4.5	24	28.9	CREATIVE
HIGH EXPECTATIONS	4	4.5	24	28.9	CULTURE
INTERPERSONAL	4	4.5	23	27.7	DEMOCRATIC
LEARNER CENTERED	4	4.5	24	28.9	DIVERSITY
LIFE LONG LEARNING	4	4.5	28	33.7	EMPOWERMENT
PLANNING	4	4.5	17	20.5	FACILITATOR GUIDE
COLLABORATIVE	3	3.4	15	18.1	HIGH EXPECTATIONS
DIVERSITY	3	3.4	19	22.9	INTERPERSONAL
LEADERSHIP	3	3.4	14	16.9	LEADERSHIP
MULTI APPROACHES	3	3.4	19	22.9	LEARNER CENTERED
OPEN	3	3.4	21	25.3	LIFE LONG LEARNING
PROFESSIONAL	3	3.4	16	19.3	MULTI APPROACHES
ADVOCACY	2	2.2	8	9.6	OPEN
COMMITMENT	2	2.2	14	16.9	PEDAGOGY
CULTURE	2	2.2	13	15.7	PLANNING
DEMOCRATIC	2	2.2	14	16.9	PROFESSIONAL
FACILITATOR GUIDE	2	2.2	9	10.8	REFLECTIVE
WARDS METHOD					

*Comparisons of the Emergent Codes to Qualities Identified  
by Recognized Leaders within the Education Profession*

If educational researchers are to take a developmental approach to the evaluation and growth of desirable teacher dispositions, it is necessary to also consider the ultimate vision for best practice. It would also be logical to compare the dispositions identified in the NCATE teacher education program reports to those that recognized leaders in the profession feel made them successful and are qualities they admire in peers who do excellent and ethical work.

In a prior study of qualities of highly successful and respected educators (Jensen, 2003a) based on the interview model in *Good Work<sup>®</sup> When Excellence and Ethics Meet* (Gardner, Csikszentmihalyi, & Damon 2001); the researcher interviewed nationally recognized educational creator/leaders, gatekeepers, and respected practitioners. These individuals were asked to comment on characteristics that they valued and that they respected or could not respect in peers. Items ranked highest in an administered Q-Sort and coded interview comments, as well as characteristics of those they considered mentors and 'anti-mentors' appear in Table 10, along with codes identified in this study, in brackets [ ], that parallel their ideals.

Table 10. Responses of Leaders in Education to the Good Work<sup>®</sup> Interview and Q-Sort.

RESPONSES OF LEADERS IN EDUCATION TO THE GOOD WORK<sup>®</sup> INTERVIEW AND Q-SORT.

Respected Qualities	Respected Qualities (Cont'd)	Not Respected
<ul style="list-style-type: none"> <li>Quality of work [high expectations]</li> <li>Honesty [ethics] and integrity [integrity]</li> <li>Hard work [work ethic] and commitment [commitment]</li> <li>Making a difference [persistence]</li> <li>Personal growth and learning [academic, life-long learning]</li> <li>Sincerely caring [caring] about students' learning [learner-centered] and well-being [safety]</li> <li>"Connecting" with students [engagement, inspiration, motivation]</li> <li>Teamwork [collegial]</li> <li>Use creativity [creative] and reflection [reflective] to build alliances [collaborative]</li> <li>Consensus building [collaborative, community]</li> <li>Non-confrontational [professional, open]</li> <li>Professional behavior [professional] and professional accomplishment [professionally grounded]</li> <li>Student-centered [learner-centered]</li> </ul>	<ul style="list-style-type: none"> <li>Research-based [research], sound pedagogy [pedagogy] focused on documented student needs [assessment, learner-centered]</li> <li>Multicultural and gender equity [culture, diversity]</li> <li>Protecting students [safety]</li> <li>Independence [agency], challenge [high expectations] and vision [vision]</li> </ul> <p style="text-align: center;"><b>Mentors</b></p> <ul style="list-style-type: none"> <li>Encouragement to try new things [empowerment, innovative, support], pursue more education [academic, life-long learning]</li> <li>Gave 'permission' [empowerment] to take stands [agency, advocacy], be leaders [leadership]</li> <li>Insights into multicultural [culture] and gender [diversity] perspectives [perspective]</li> <li>Role models [role model] for effective practice</li> <li>Took stands on principle [agency, advocacy]</li> <li>Gave support [support] and autonomy [facilitator/guide]</li> <li>Advice on policy and politics [leadership]</li> </ul>	<ul style="list-style-type: none"> <li>Lack of deep commitment</li> <li>Not staying professionally sharp and current</li> <li>Not caring about/not respecting students</li> <li>Being competitive, arrogant or lazy instead of working collegially to improve education</li> <li>Not considering perspectives of all</li> <li>Disrespect for the importance of pedagogy</li> </ul> <p style="text-align: center;"><b>Anti-Mentors</b></p> <ul style="list-style-type: none"> <li>Inhibited best practice or new approaches to student needs</li> <li>Gender discrimination</li> <li>Being 'jerked around' by the next new thing without validation or consistency</li> <li>Lack of professional treatment/respect of classroom teachers</li> <li>Political attacks on education as a profession</li> </ul>

All of the positive dispositional factors articulated by these leaders were aligned with a code that had been identified in the scan of Institutional Report dispositions:

academic (2)*	engagement	persistence
advocacy (2)	ethical*	perspective*
agency (3)	facilitator/guide	professional (2)*
assessment*	high expectations (2*)	professionally grounded*
caring*	innovative	reflective*
collaborative (2)*	inspiration	research
collegial	integrity*	role model
commitment	leadership (2)*	safety (2)
community*	learner-centered (3)*	support (2)
creative	life-long learning (2)*	vision
culture (2)*	motivation	work ethic
diversity (2)*	open	
empowerment (2)	pedagogy*	

Nineteen (\*) of these associated codes were among the top 25 occurrences across the data in the NCATE Institutional Reports.



### *Reflections on the Findings and Comparison to the Dispositions Literature*

Some of the findings were predictable, as anticipated in the opening section on Assumptions. It was expected that 'academic', life-long learning', and 'pedagogy' would be in the top occurrences valued across institutions, because that, after all, is what colleges of education do. It was also expected that there would be a degree of alignment with the main themes in the NCATE standards and INTASC Ten Core Principles, as all of the institutions are accredited.

There was evidence that 'diversity' was not just a buzz-word, since concepts often related to diversity were also reflected in various ways across the codes and across institutions. 'Culture', 'equity', 'respect', 'social justice', 'perspective', and 'sensitivity' all fell within the top half of the code rankings. 'Respect' was number two on the disposition frequency list, right ahead of 'diversity' at number three.

The fact that 'reflective' was the highest ranking occurrence in both the Institutional Report (IR) codes overall and the IR dispositions list was encouraging, in light of developmental and cognitive science evidence that growth takes place in the process of examining and rethinking new material (Fischer & Bidell, 1998a,b; Karmiloff-Smith, 1992, Spitzer, 1999). Candidates were encouraged to reflect on student evidence, improving their own practice, and the purpose of their work in education overall. It was less encouraging that supporting ideas to reflect upon, i.e. 'constructivist', 'cognitive', 'developmental', 'research' and 'assessment' were half-way down both IR code ranking lists. 'Reasoned' and 'problem-solver' were both in the second quartile.

Perhaps some of the most surprising lower-ranking codes in the dispositions section were 'active learning', 'authentic', 'curious' 'contextual', 'engaging',

'improvement', 'innovative', 'inspiration', 'integration', 'learner-centered', 'motivator', and 'supportive'. It could be that these were all related manifestations of 'multiple approaches' and 'pedagogy', but these did not fall out in the upper half as did the codes related to diversity, but in the lowest quartile.

Some codes valued by the educational leaders in the *Good Work*<sup>®</sup> interviews, such as 'integrity', 'ethical', 'agency' and 'leadership', were also in the top half of the IR code rankings. Other codes that perhaps reflected how these individuals' came to achieve national leadership status, i.e. 'advocacy', 'creative', 'empowerment', 'initiative', 'open', and 'vision' occurred in the lower half.

#### Similarities and Differences in Individual Codes across the Documents

As the data were graphed and analyzed, care was taken to preserve nuances in how individual codes manifested. Although there was similarity in codes collected within the Institutional Reports and the INTASC Principles, there were noticeable differences in the occurrences of individual codes across sections of these documents. The graphs of these nuances which follow are framed in according to the subcategories in the second analysis, the developmental model. In each subcategory graph, Figures 2 through 10, there are separate lines for the proportions of codes gathered from the following areas:

- across the full text of the INTASC Ten Core Principles;
- in the dispositions section only of the INTASC Ten Core Principles;
- in the dispositions section only of the Institutional Reports (IR);
- in the Conceptual Framework only of the IR; and
- in the dispositions section and the Conceptual Framework of the IR combined.

Figure 2. Subcategory II.1.a Knowledge: Proportion of Occurrences across the INTASC Principles and Institutional Reports

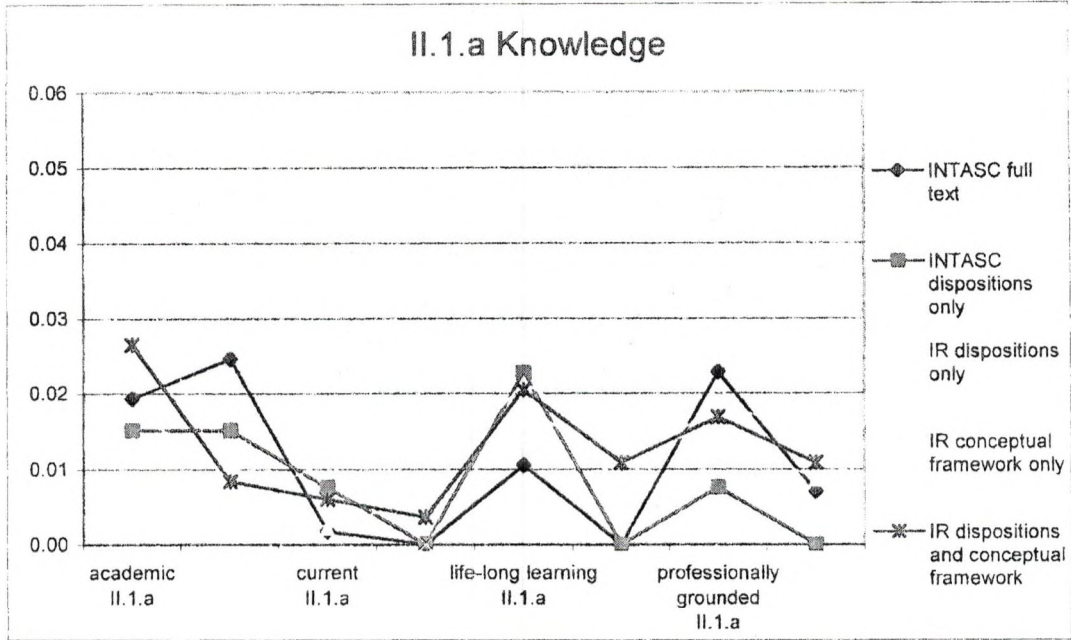
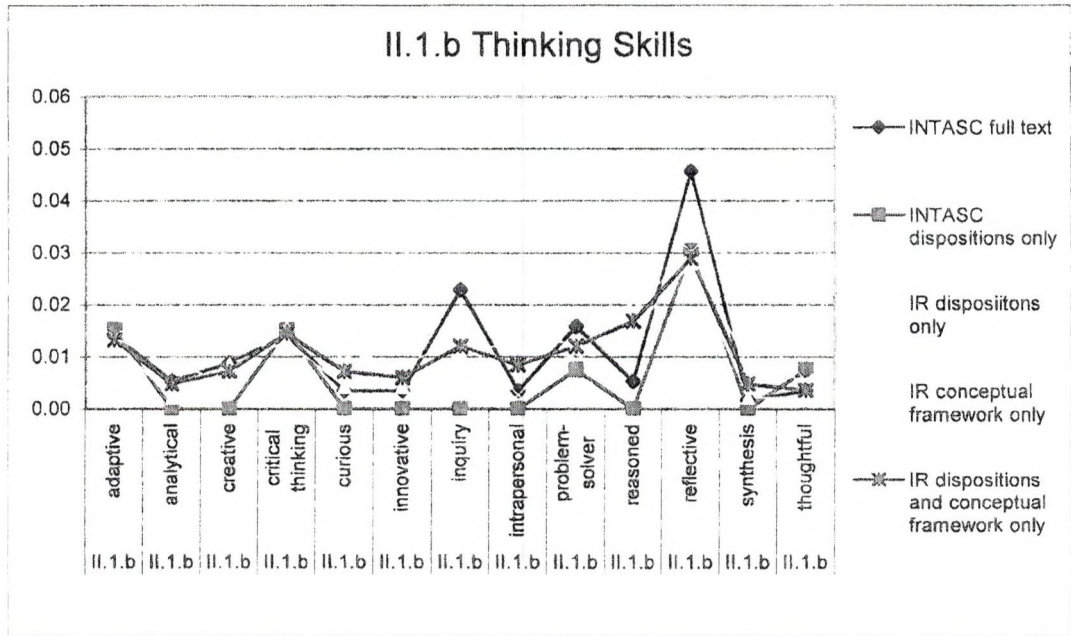


Figure 3. Subcategory II.1.b Thinking Skills: Proportion of Occurrences across the INTASC Principles and Institutional Reports

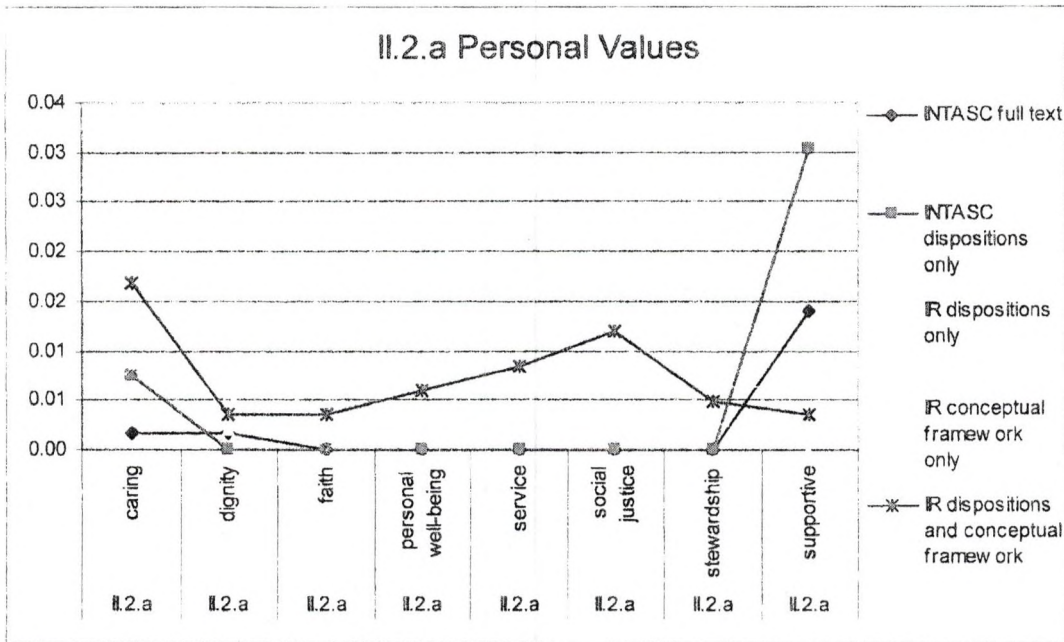


Valuing academic excellence was stressed most strongly in the Conceptual Frameworks, the importance of understanding cognitive processes most across the INTASC Principles, and 'life-long learning' and 'academic' ranked highest overall in this Subcategory II.1.a Knowledge. Staying 'current' was likely a part of 'life-long learning', and 'research' as a separate dispositional code ranked in the mid-range of occurrences.

'Reflective' was the most valued disposition, ranking high across all sections of both the Institutional Reports and the INTASC Principles. 'Thoughtful' and 'intrapersonal' could have easily been grouped with 'reflective', giving that code even more emphasis, although there were some subtle differences in how these terms were used in the reports, with 'thoughtful' leaning more toward caring or kindness, and 'intrapersonal' toward self-reflection more than reflection on one's work or toward students. 'Inquiry' split out between the INTASC full text and INTASC dispositions, indicating the CCSSO, but not the institutions, framed it as knowledge or skill rather than a dispositional characteristic. There was consensus on the importance of 'adaptive' and 'critical thinking', and to some extent 'problem-solver', even though the overall occurrences were average.

The next section of graphs is representative of column two in the overall developmental model, Category II. 2 Emotion. This category represents values that are formed over time through the deep interaction of our emotions and our cognitive processes. Category II.2 includes a. Personal Values, b. Interpersonal Values, and c. Community Values.

Figure 4. Subcategory II.2.a Personal Values: Proportion of Occurrences across the INTASC Principles and Institutional Reports



INTASC framed Personal Values (Figure 4) almost entirely in terms of being disposed toward supporting students, and institutions toward caring about students. The institutions more often expressed a broader context that included both caring about students and a sense of obligation to service or social justice. ‘Dignity’ was in a sense part of ‘caring’ as it expressed honoring and caring for all equally as a basic human value. ‘Faith’ had specific religious significance, and was noted by religiously-affiliated institutions as a foundational value and guide to purpose. ‘Personal well-being’ expressed the sentiment (more from institutions than from INTASC) that taking care of oneself is an imperative to being able to take care of others.

Figure 5. Subcategory II.2.b Interpersonal Values: Proportion of Occurrences across the INTASC Principles and Institutional Reports

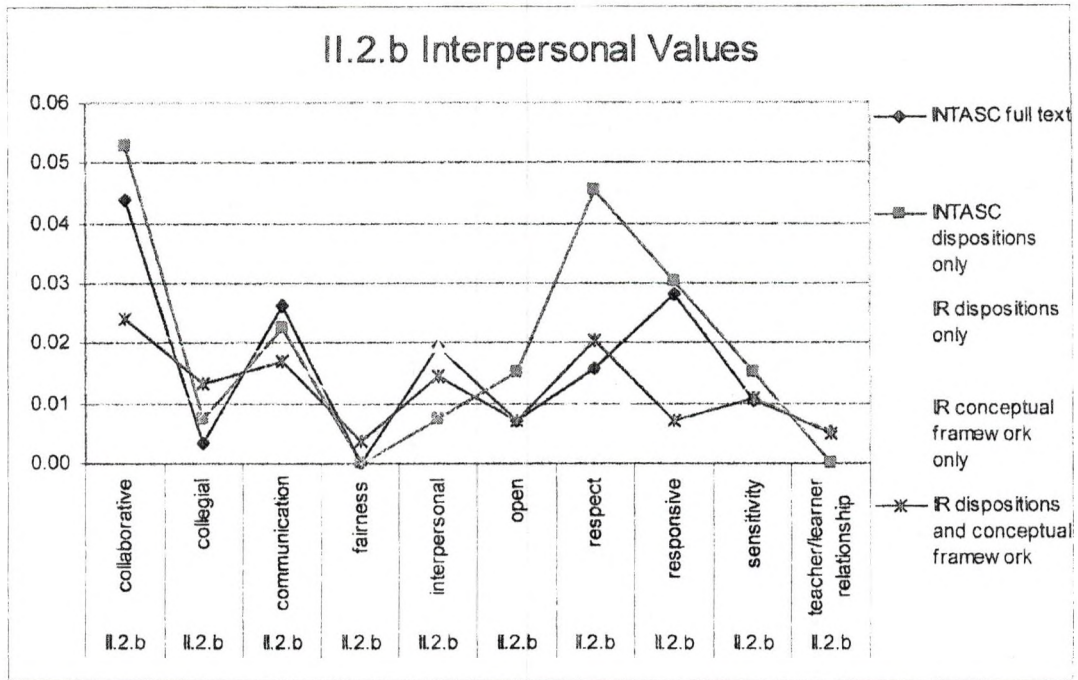
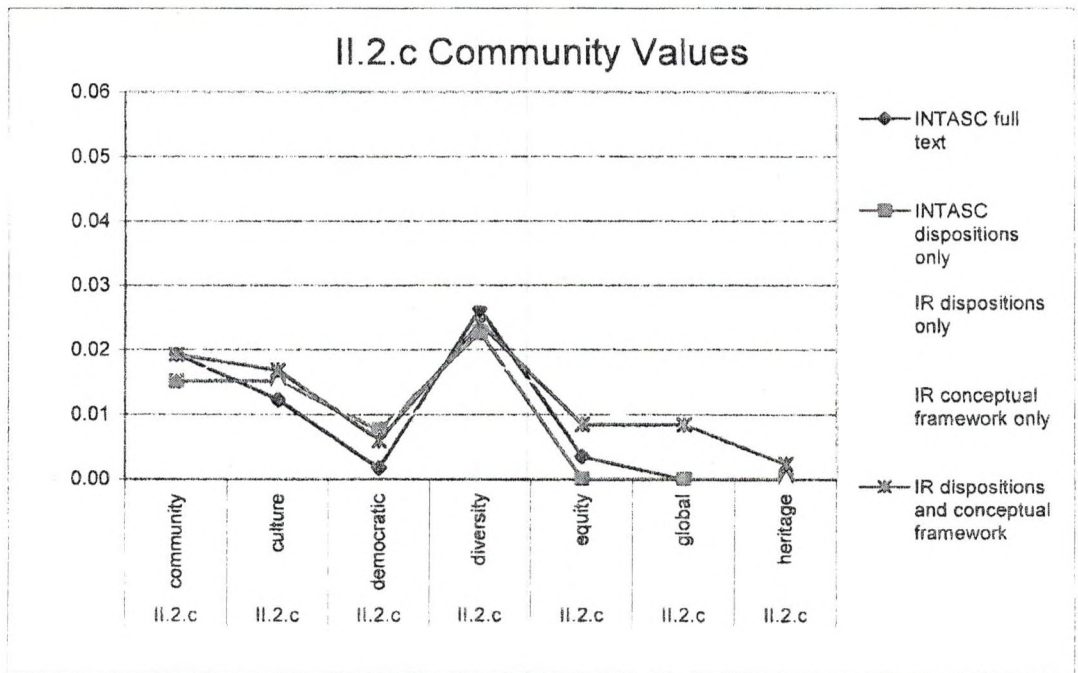


Figure 6. Subcategory II.2.c Community Values: Proportion of Occurrences across the INTASC Principles and Institutional Reports



In Subcategory II. 2.b Interpersonal Values (Figure 5), 'collaborative' and 'respect' were seminal values expressed across all five areas. 'Collegial' was similar to 'collaborative', but focused on working relationships with professional peers rather than peer and community collaboration. 'Communication' and 'interpersonal' were points of consensus at average levels. It was interesting that there was little specific mention of teacher-student positive relationships bearing on learning, but of general interpersonal skills with students, peers and community. 'Fairness', 'sensitivity', and 'open' were nuances of 'respect' and 'communication'. INTASC valued being 'responsive' as a means of moving interpersonal values into action.

A somewhat unexpected finding was a convergence in the area of II.2.c Community Values (Figure 6), given the variety of missions of the institutions in the sample and the often dialect discussions of education issues. Respect for 'diversity', 'community', 'democracy' and 'culture' were expressed at fairly uniform levels across the documentation and 'diversity' was in the top 15 rankings across all sections and the fifth most frequently occurring code overall. While there was some split in the small occurrences of the more dialectic codes 'global' and 'heritage', there was a strong overall consensus. It was clear in the narratives that the institutions were all focusing on building a sense of community in which there was a sense of mutual respect and rich, varied environment for students to learn about themselves and others.

Dispositional aspects of character (II.3.a Character, Figure 7) were separated from personal values by thinking about character in terms of how the individual appears to others. When the variation in Figure 7 is viewed from that perspective, it seems the Chief State School Officers were thinking of a teacher with character as one who would have

'commitment' to students, stay in the profession, and would concentrate on 'positives', be 'self-motivated' and 'professional'; someone you would like to have working for you. From the institution's perspective, a teacher of good character is, 'professional' and 'ethical', acting with 'enthusiasm', 'integrity', a good 'work ethic' and with 'responsibility'; someone with whom you would like to work. How would these individuals look to students, i.e. someone you would want to be your teacher if you were having difficulty? It would be interesting for both policy makers and teacher educators to rearrange these codes from that perspective, particularly 'accommodating', 'persistent', and 'resilient'.

Figure 7. Subcategory II.3.a Character: Proportion of Occurrences across the INTASC Principles and Institutional Reports

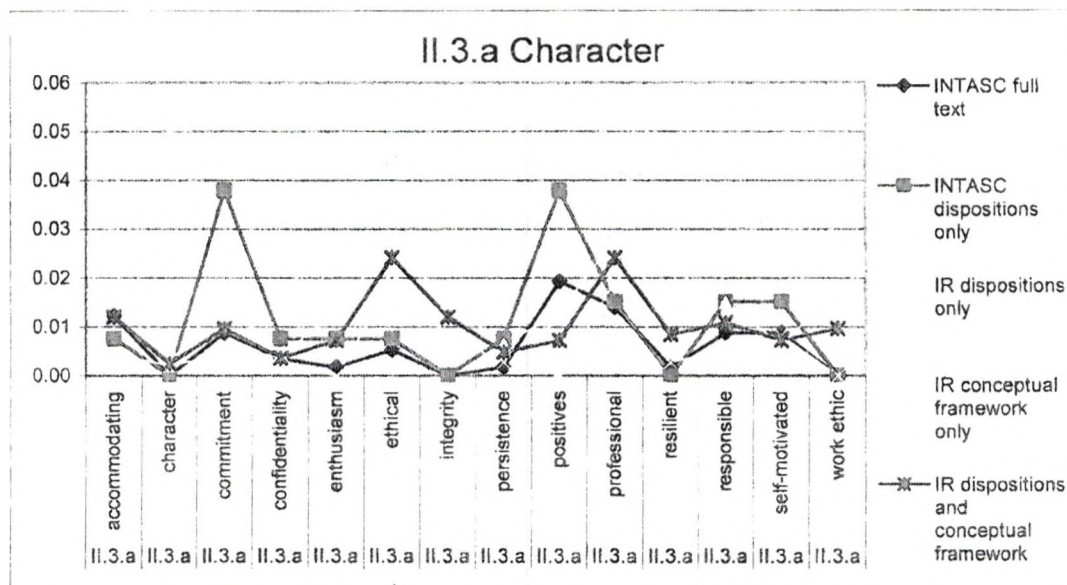
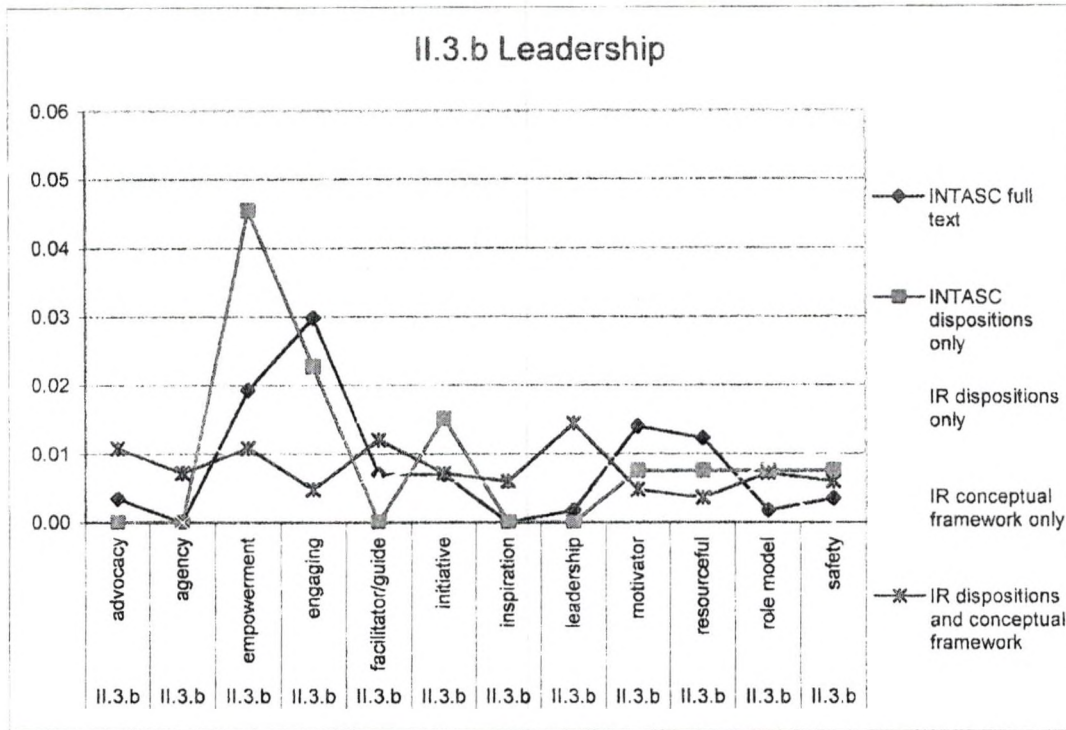


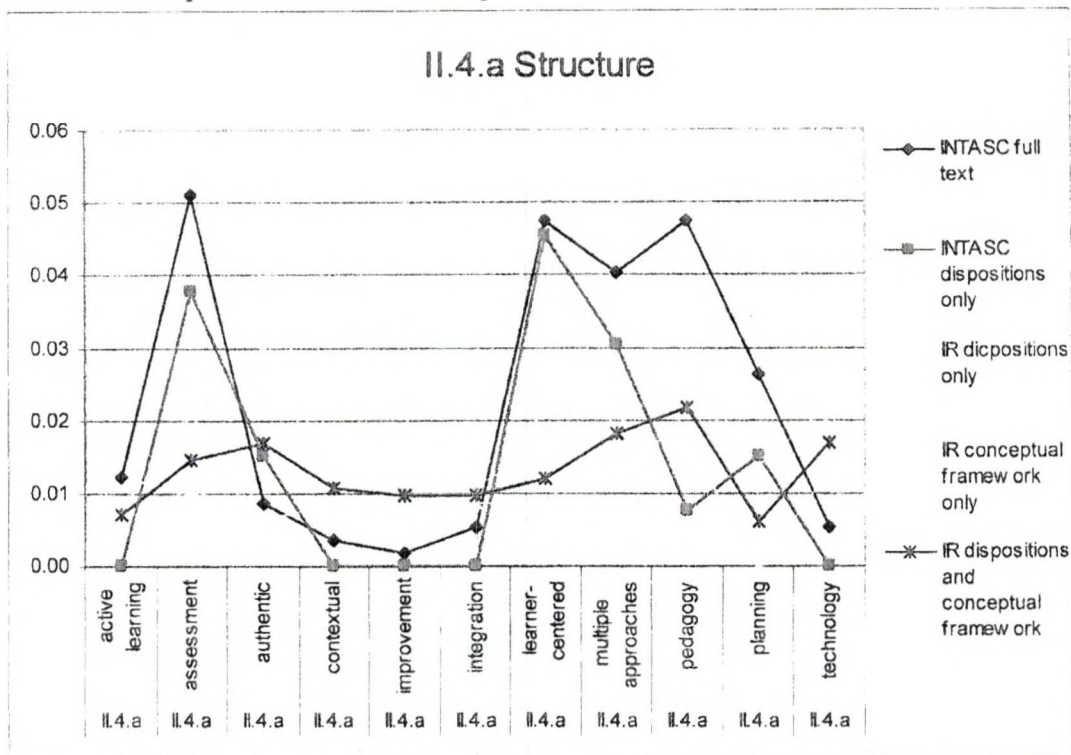


Figure 8. Subcategory II .3.b Leadership: Proportion of Occurrences across the INTASC Principles and Institutional Reports



There was a definite peak in the INTASC Principles valuing ‘empowerment’ and ‘engaging’ within the Subcategory II.3.b Leadership (Figure 8), again with emphasis on connecting students with learning. Other than a slight peak in ‘facilitator/guide’, most references to leadership from the Institutional Reports were regarding advanced programs in educational leadership. Despite a focus in the profession on encouraging teachers to lead from the classroom, it did not seem to be happening in these data. It may be useful to continue the sentiment expressed in regard to the data on character by asking how students may rearrange the data for leadership in regard to ‘advocacy’, ‘inspiration’, ‘motivator’, ‘resourceful’, ‘role model’ and ‘safety’, in addition to ‘empowerment’ and ‘engaging’.

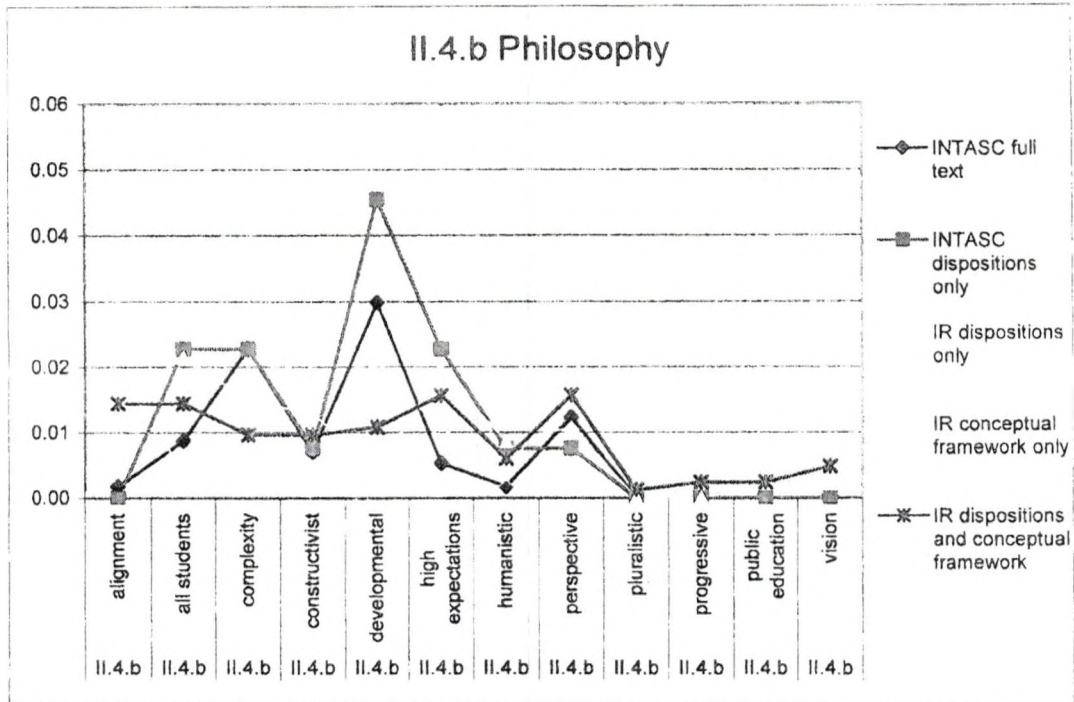
Figure 9. Subcategory II.4.a Structure for Learning: Proportion of Occurrences across the INTASC Principles and Institutional Reports



It was difficult to know exactly how to interpret the data regarding dispositions on the structure of the learning experience. There was considerable variety in the frequency of occurrences in this subcategory (II.4.a Structure, Figure 9). On one hand, the differences could be considered startling, with ‘active learning’, ‘contextual’, ‘improvement’, ‘integration’ and ‘technology’ all toward the bottom of the chart and ‘assessment’, ‘authentic’, ‘learner-centered’, ‘multiple approaches’, and ‘pedagogy’ showing considerable differences. It was clearly INTASC that stressed ‘assessment’, ‘learner-centered’ and ‘multiple approaches’ in these particular documents. On the other hand, it could be that the institutions’ focus was to articulate their philosophy on dispositions overall, not to outline how these would translate into specific classroom

practices, that would be demonstrated to the accreditation teams in the finer-grained analysis on their campus rather than the overview in their Institutional Reports.

Figure 10. Subcategory II.4.b Philosophy: Proportion of Occurrences across the INTASC Principles and Institutional Reports



Very specific statements of philosophy, such as ‘humanistic’, ‘pluralistic’, ‘progressive’, and ‘public education’ had relatively low occurrences or consensus across all 25 institutions (Subcategory II.4.b Philosophy, Figure 10). Those philosophies such as ‘developmental’, ‘all students’, ‘complexity’, ‘high expectations’ and ‘perspective’ had higher, but still moderate occurrences. INTASC again accounted for the peak in ‘developmental’. It is likely ‘all students’ was lower here because so much emphasis was placed on this concept in the community subcategory under the term ‘diversity’. It was somewhat surprising that ‘constructivist’ did not rank higher, considering the developmental literature base, although these could have been used somewhat

interchangeably. The concept of 'complexity' was well articulated by the institutions at which it occurred, but not widely mentioned. 'Perspective' was grouped as a philosophy rather than a value as it generally occurred outside of the disposition sections.

#### Discussion of the Literature Cited by the Institutions

Works cited in the References section at the end of this study are those from the literature review on dispositions and student learning factors conducted to facilitate the analysis in this study. A complete listing of the literature cited in the Institutional Reports sampled appears in Appendix E: Bibliography Scanned from Institutional Reports. Citations were included in two-thirds of the Institutional Reports reviewed. Many were complete references, others in-text citations with author and year only or acronyms referencing NCATE, INTASC or National Board for Professional Teaching Standards (NBPTS) documents. Because the references in Appendix E were gleaned from the Conceptual Frameworks and Standard 1 disposition sections of the Institutional Reports, they represent both foundational information for the Conceptual Frameworks and rationale for identified teacher dispositions. The references are presented in table format exactly as they appeared in the reports, whether complete or incomplete, to avoid making assumptions about the full citations or whether they represent disposition or conceptual framework foundations, although some are obviously inferred from the title.

About half of the institutions cited specific research studies or theorists directly and two-thirds of the institutions included references to various educational literature. When the titles and origins of material cited by the institutions were examined, it appeared the majority of the literature used reflected a basis in educational psychology, teacher performance training, and educational philosophy. There were limited citations

of articles from first-source refereed journals. The most often cited journals were Educational Leadership and Phi Delta Kappan, and most common refereed journals noted were Educational Researcher and the Journal of Teacher Education, each referenced by 6 to 8 institutions. About 20 other referred journal articles had single mentions and the remaining citations were books or book sections, the majority of which seemed to be foundations for the Conceptual Framework of the institution or how they addressed inclusion and diversity. It is likely, that if a finer-grained level of analysis were used, such as examination of course syllabi, more first-source research from refereed literature may present itself, but it did not in the Institutional Reports. It is also likely that many citations to first-source material could appear in the books and book sections referenced.

Authors who were cited by multiple (6 to 10) institutions in relationship to dispositions or student cognition in particular included the following: Nel Noddings was the only author mentioned by multiple (8) institutions with specific relationship to dispositions, specifically caring, critical thinking, and self-reflection. John Goodlad and Linda Darling-Hammond were referenced on general educational philosophy and other teacher characteristics as well as dispositions. John Dewey, Howard Gardner and Lee Shulman were referenced in relation to student cognition.

The Bibliography is a good start for mining additional sources of information on dispositions. There was not, however, any clear consensus that emerged from these data regarding a literature base for the study of teacher dispositions.

It was interesting, or perhaps it should even be alarming from one perspective or another, that the only two author names in common between the References for this study and the Bibliography from the Institutional Reports were Howard Gardner and Linda

Darling-Hammond. This comment is not to detract in any way from these individuals' very significant contributions, but to leave an open-ended query as to why there did not seem to be any other common ground in research rationales for dispositions.

#### Institutional Report Information on Disposition Assessment

All institutions accredited by NCATE are required to have a comprehensive system of assessment that includes assessments of knowledge (academic and professional), performance (applied methods and skills), dispositions, and potential to positively influence student success. Assessments are intended to be both formative (to encourage reflective growth and inform preparation practices) and summative (to determine advancement) at benchmark points of entrance, admission to professional education, admission to student teaching or clinical practice, and exit. (NCATE, 2002)

Portfolios, reflective journals and essays based on scenarios or actual classroom experiences and observations by faculty supervisors and cooperating classroom teachers are often-stated means of assessing dispositions. Most often these assessments are included as part of methods courses, practica and extended field experiences, with the observations conducted by cooperating teachers and supervising college faculty. All of these types of assessment were present in the data garnered from the Institutional Reports, which was confirmed by running the CatPac II® dendogram shown in Table 11.

Open-ended journal entries can be especially useful as an insight into candidates' dispositional characteristics. Comb's studies used clinical assessments that involve carefully trained raters inferring perceptions from observed behavior. As was noted in the overview to the Methodology section, the information on assessments of dispositions was inconclusive, as it was not possible to separate specific information related to

dispositions from the operation of the overall assessment system for knowledge, skills, dispositions, and impact on students.

Table 11. Dendrogram of Institutional Assessment Information Scanned with CatPac II<sup>®</sup>

DENDROGRAM OF ASSESSMENTS IDENTIFIED IN THE INSTITUTIONAL REPORTS					
WORD	FREQ	PCNT	FREQ	PCNT	ALPHABETICAL LISTING
DISPOSITIONS	34	9.0	163	44.1	ASSESSMENT
TEACHING	28	7.4	156	42.2	ASSESSMENTS
STUDENT	26	6.9	148	40.0	BASED
PROFESSIONAL	25	6.6	124	33.5	CANDIDATE
FIELD	22	5.9	129	34.9	CANDIDATES
ASSESSMENTS	18	4.8	108	29.2	CLINICAL
REFLECTION	17	4.5	96	25.9	DISPOSITIONS
EVALUATIONS	16	4.3	93	25.1	EDUCATION
FACULTY	16	4.3	96	25.9	EVALUATION
EXPERIENCES	15	4.0	94	25.4	EVALUATIONS
BASED	14	3.7	82	22.2	EXPERIENCES
PORTFOLIOS	14	3.7	91	24.6	FACULTY
ASSESSMENT	13	3.5	65	17.6	FIELD
PORTFOLIO	13	3.5	81	21.9	PLANS
SELF	13	3.5	83	22.4	PORTFOLIO
EDUCATION	11	2.9	62	16.8	PORTFOLIOS
REFLECTIVE	10	2.7	62	16.8	PROFESSIONAL
SUPERVISORS	10	2.7	55	14.9	REFLECTION
CANDIDATES	9	2.4	51	13.8	REFLECTIVE
CLINICAL	9	2.4	58	15.7	REMEDIATION
PLANS	9	2.4	57	15.4	SELF
REMEDIATION	9	2.4	62	16.8	STUDENT
TEACHERS	9	2.4	62	16.8	SUPERVISORS
CANDIDATE	8	2.1	56	15.1	TEACHERS
EVALUATION	8	2.1	49	13.2	TEACHING

While institutions across the study did have multiple methods for assessing candidates noted in their Institutional Reports, the reports tended to speak about the dispositional assessments more generically than the assessments for knowledge and performance. Knowledge and performance assessments often included multiple, named measurement indicators such as grade point averages, standardized tests such as PRAXIS

or specific state exams, demonstration portfolios based on published standards of specialty professional associations. Dispositional assessments were more generally or subjectively described, i.e. as reflections in journals, personal statements of educational philosophy, self-descriptions of actions taken on the basis of attitudes, summative supervisor reports, or feedback from employer surveys. The fact that dispositional assessments were described more generally rather than in terms of specific measurement instruments elicit the following assumptions:

1. The profession's measurement and analysis expertise for dispositional factors is still in a more nascent state than for knowledge and performance factors;
2. the criteria and assessments for dispositions are still evolving toward a more definitive state that could be more universally recognizable and quantifiable; and
3. that 'more definitive state' toward which dispositional assessment is evolving may well require different types of analysis instruments than for declarative and procedural demonstrations of competency.

It may also be that some institutions actually have more fine-grained, definitive instruments for the measurement of dispositions, but the level of analysis for this study, the Institutional Report, did not provide evidence at that level of detail. A few institutions did name dispositional assessment instruments that appeared to be self-developed in their Institutional Reports, but they are not named here because the low incidence of institutions naming instruments could allow individual cases to be identified.

**Conclusion: Revisiting the Question, "Exactly What Is a Disposition and How Does It Differ from What An Individual Knows and Can Do?"**

Earlier in the analysis, it was noted that institutions often framed dispositions in skills evidence language, rather than as statements of philosophy, attitude or belief, and



the question arose, “Exactly what is a disposition, and how does it differ from what an individual knows and can do? More importantly, does it *need* to differ?” The distinction that emerged overall from the data, put in terms of contemporary cognitive science, was that a disposition is an underlying mental state or ‘mind set’ with an action potential to produce particular types of responses to certain stimuli in a given context. This underlying mental state about a certain concept (represented here in the dispositional codes identified) is a complex phenomenon consisting of the individual’s own experiences and how she pictures her own abilities, intentions and potentials, how she pictures students and others’ abilities, intentions, and potentials, and the underlying complex system of values and beliefs and constant environmental influences that frame and influence her decisions.

In the mind/brain, this process that creates and refines a mental state takes place in milliseconds as perceptions flash back and forth from recognition—to emotion—to memory—to engaged cognition and back again (Damasio, 1999; Gazzaniga, 2002; LeDoux, 1996; Rose et al., 2004; Spitzer, 1999). It also takes place over the lifespan as mental representations are constantly revisited, revised or reinforced over time as a result of new experiences and continuing cognitive development (Fischer & Bidell 1998a, b; Fischer, Yan & Stewart, 2003; Gardner, 1985; Karmiloff-Smith, 1992). The eventual result of this mental state process is the buildup of an action potential (Gazzaniga, 2002); the mind/brain communicates to the rest of the body to act in a particular way, or not to act at all, based on the form of the underlying disposition about the concept and the characteristics of the situation at hand. The difference between a disposition and one’s knowledge or skill would seem, therefore, to be the action potential; it is the disposition

that ultimately determines the direction in which the knowledge and skill will carry an individual. The knowledge and skill may determine how far one can go, but it is the disposition that determines whether an action will take place, and its direction.

This distinction makes dispositions, as an action potential, an absolutely critical element in the process of teaching and learning. The process of teaching and learning in real classrooms is a constant interactive interplay of teacher and student mental state dispositions toward one another and toward the perceptual inputs that present themselves in the learning environment. If a teacher holds the underlying disposition or mental state that a student who has not achieved in the past, nevertheless, can; he will act to move in that direction. If he values continuous inquiry in search of new knowledge, he will develop and use his skills toward that end, and model that behavior with students. If a teacher gives only lip service to equity or service, her action potential to help underserved students will not materialize no matter how much knowledge and skill she possesses.

#### Next Steps for Analysis

The second point upon which contemporary cognitive science research may shed light is the curious dichotomy that, even though the dispositions expected of teachers showed some remarkable similarity across institutions, there are still very different action potential results occurring in classrooms. This difference may be due to dissimilarities in some individual codes, lack of systemic application, or the inherently contextual nature of development. While educators can probably successfully argue continuing progress toward unraveling these dichotomies, the profession is not yet to the point of approaching the dispositional attributes of beginning teachers or related implications for students in a scientific and systematic manner. The next step toward this end is to reflect upon

commonly defined dispositions in light of actual data on student success and enlist new research capabilities in human development, cognitive science, and complexity to study the dynamic process of dispositional interaction with learning.

Taylor and Wasicsko (2000), in *The Dispositions to Teach*, noted four areas of need in the further examination of the role of dispositions in teacher effectiveness:

1. define what is meant by dispositions;
2. review the research base;
3. find appropriate measurement tools; and
4. conduct additional research.

It would appear from the evidence compiled here, that the profession has a clearer common definition of desirable dispositions than they may have thought. The research base elucidating why they hold these ideals was not as clearly articulated, nor were specific, commonly accepted measurement tools for evaluating teacher dispositions. Even with some consensus on desirable dispositions, it is necessary, before considerable effort is invested in measurement tools and scales, to focus the list on those dispositions most likely to be connected with increased student benefit and study how these dispositions develop.

Chapter IV begins that process by systematically looking at each of the nine subcategories that emerged in the second analysis, the developmental model, in light of research findings in cognitive science and student achievement. While Chapter IV is far from a comprehensive analysis, it should serve to stir interest in closer analysis of dispositions as an interface and an action potential in the process of teaching and learning, and to provide some points of departure for research designs.

CHAPTER IV  
COMPARISON OF THE IDENTIFIED DISPOSITIONS TO  
STUDIES OF FACTORS IMPACTING STUDENT LEARNING

Chapter IV presents a reflective comparison of the teacher dispositions identified in the Chapter III analysis of sampled NCATE Institutional Reports to factors shown through research to impact student learning. A brief review of the purpose and methodology are provided first, followed by a condensed presentation of the Chapter III findings. Each of the categories and subcategories of identified teacher dispositions is then examined for connections to research in cognitive science. While this comparison is not intended to be a comprehensive review of relevant cognitive science research, it is hoped it will provide a starting point for thinking about teacher dispositions as a developmental phenomenon linked intricately with developmental processes in student learning, and an impetus for the framing of continued research in promising areas.

Research Parameter Addressed

Chapter IV addresses the second research parameter: How do the dispositions identified by the NCATE institutions compare to research in the realm of cognitive science regarding potential impact of those dispositions on student learning?

Reprise: Dispositions as an Interface between Teaching and Learning

Over the past twenty years, educational researchers have developed new theories about intelligence and processes by which human beings learn. These theories look at cognition and the importance of teacher-student interaction in very different ways, redefining teaching as much more than simply the skilled presentation of existing

information. Gardner's multiple intelligence theory and Goleman's compilations of research on emotional intelligence have influenced many an educators' design of student learning experiences (Gardner 1993, 1999; Goleman 1994).

Increased cognitive science research has focused attention on:

1. the neurological interplay between emotion and cognition (Frijda, 1988; LeDoux, 1996; Damasio, 1999);
2. how the recognition, strategic and affective neural systems of the brain process and evaluate information (Diamond & Hopson, 1998; Gazzaniga, 2002; Spitzer, 1999; Rose et al. 2002); and
3. how interpersonal relationships can affect cognitive processes (Fischer, Ayoub et al., 1997; Fischer & Kennedy, 1997; Fischer & Bidell, 1998a; Pianta, 1999).

This research has cast a bright light on the need to better understand how the demonstrated values, beliefs attitudes, and interpersonal skills of teachers impact the learning environment and individual students.

The central ideas in these works challenge educators (or perhaps more cogently, the paradigm of the educational system and accountability measures) to re-conceptualize thinking about intelligence, learning, and educational environments; how different students may perceive and make meaning of their experiences in very different ways, and how interpersonal and classroom climate and stability factors may have substantial impact on the learning process. This phase of the study uses these and other teaching and learning theories as a lens to examine the ideas about dispositions emerging from the qualitative examination of the NCATE college of education Institutional Reports.

The researcher had previous experience examining research related to creating effective learning environments for P-12 students and adult learners. This preparation included study of educational improvement at the P-12 level in the Masters of Education program in Educational Leadership from the University of North Dakota (UND), study of developmental cognitive science in the Mind, Brain, and Education Program at the Harvard Graduate School of Education (HGSE), and study of adult learning and college teaching in the doctoral program in Teaching and Learning: Research Methodologies at UND. The bulk of the cognitive science studies utilized in the Chapter IV comparisons were drawn from curriculum in the Mind, Brain and Education Program.

#### Reprise: Codes Categorized: Second Analysis

In light of the primary purpose of this study, to more clearly identify and categorize teacher dispositions in order to better evaluate and nurture desirable dispositions in teacher preparation, it seemed an approach focused on the individual's identity and development may be more useful to that end. The initial, accreditation-oriented groupings could have arisen partially from the structure of the Institutional Reports themselves or from the researcher's prior experience with accreditation.

With the central concept of individual development in mind, the final model for categorization presented in Chapter III emerged, the developmental model. Similar developmental concepts were grouped together, regardless of whether they existed in the levels of analysis of self, others, work or the profession. The resultant groupings are more person-oriented, and less organization or analysis-oriented. That second analysis, repeated here once again as Table 7, fell out along lines based in developmental and cognitive science with main categories clustering around the cognitive, emotional, social,

and contextual, that could serve a more constructivist than organizational approach to teacher development.

Table 7: Second Qualitative Analysis of Disposition Codes from the NCATE Institutional Reports: Groupings by Category and Sub-category using a Developmental Model

DISPOSITION CODES THAT EMERGED FROM THE QUALITATIVE ANALYSIS OF NCATE INSTITUTIONAL REPORTS: INITIAL GROUPINGS BY CATEGORY AND SUB-CATEGORY			
1. Dispositions Regarding Self	2. Dispositions Regarding Students and Others	3. Dispositions Regarding Approach to the Work of Education	4. Dispositions Regarding the Profession and Purpose of Education
<u>1.a. SELF AS A KNOWLEDGEABLE INDIVIDUAL</u> academic analytical creative life-long learning reasoned  <u>1.b. SELF AS A PERSON OF PROFESSIONAL CHARACTER</u> character integrity intrapersonal open passion for learning personal well-being reflective role model self-motivated work ethic  <u>1.c. SELF AS AN ACTOR WITH AGENCY TO PRODUCE CHANGE</u> adaptive agency initiative problem-solver resilient resourceful responsive	<u>2.a. GUIDING BELIEFS ABOUT STUDENTS AND OTHERS</u> accommodating all students cognitive collaborative collegial contextual developmental high expectations learner-centered perspective respect  <u>2.b. ACTIONS TOWARD STUDENTS AND OTHERS</u> caring dignity engaging empowerment facilitator/guide inspiration interpersonal motivator positives teacher/learner relationship responsible safety sensitivity supportive thoughtful	<u>3.a. APPROACH TO "TEACHER WORK"</u> assessment commitment communication confidentiality current enthusiasm equity fairness improvement innovative pedagogy persistence planning research technology  <u>3.b. APPROACH TO "STUDENT WORK"</u> active learning authentic constructivist critical thinking curious inquiry integration multiple approaches	<u>4.a. FRAMING PROFESSIONALISM</u> advocacy alignment complexity ethical leadership professional professionally grounded stewardship synthesis vision  <u>4.b. FRAMING PURPOSE</u> community culture democratic diversity faith global heritage humanistic liberal arts pluralistic progressive public education service social justice

It is important to reflect on how the conceptualization of a disposition as an action potential, which was brought forth in the conclusion of Chapter III as the human interface between teaching and learning, is likely to influence students in classrooms. What follows is a systematic look at each of the nine subcategories that emerged in the second

analysis, the developmental model, in light of research findings in cognitive science and student achievement, with the intent to expose promising areas for additional research.

#### Framing Discussion of the Disposition Categories in Light of Cognitive Science and Student Learning Factors

Firm connections from clinical and medical research in cognitive science to the classroom are a nascent endeavor with limited, but growing generalizable applications. The tremendous potential of new discoveries in these areas to help students makes it imperative that educators engage the cutting edge of that frontier. This section of the narrative approached further analysis of the disposition data gathered from the NCATE Institutional Reports from that perspective, reflecting upon those findings in light of cognitive science research and factors statistically shown to influence student success.

The exploratory approach taken in Chapter IV to examine dispositions alongside cognitive science is intended to expand thinking about possible connections and stimulate hypotheses for further research. A cautionary tale must also be inserted here. Many of the studies examined in Chapter IV in relation to the dispositional subcategories were drawn from generalizable research in developmental science, and some of the cognitive neuroscience findings (such as the connections between emotion and cognition) have also been forged in multiple-domain studies from varied perspectives over time. Much new cognitive neuroscience is, however, still in very early stages and is drawn primarily from populations needing diagnostic services or medical interventions (i.e. individuals with epilepsy or traumatic brain injury) or from comparative studies with animals, rather than from the general human population. Extrapolating neuroscience research with a broad brush at this point in time would metaphorically be similar to articulating general functioning of leg muscles by studying individuals with sprained ankles. If these



individuals hop on one foot to accommodate the injury, resulting in neurological or physiological changes, this would not be presumed common across the general population. Neither should educators take neuroscience findings, or even developmental and cognitive psychology findings, as automatically generalizable without first-hand knowledge about the subjects, structure and specific findings of neuroscience studies.

Bruer (1997) in examining assumptions of the public regarding synaptic pruning, critical periods, and other cognitive phenomena, warned educators and the public that many practices which evolved from naive or broad assumptions took current neuroscience discoveries “a bridge too far.” While this researcher actively encourages creative thinking about how teacher dispositions may influence student cognition, and believes many potentially fruitful avenues for research designs can emerge from this creative reflection, readers are urged to bear this cautionary tale in mind when thinking about potential research that could stem from the Chapter IV discussion.

In the following section, each of the subcategories of dispositions identified in the Institutional Reports and grouped using the developmental model should be examined by the reader through reflection on the following prompts:

1. Are there aspects of cognitive science that would lend support to endorsing these dispositions?
2. Has thinking about this category of dispositions changed, or should it change, as a result of new research in developmental science, cognitive psychology and cognitive neuroscience?
3. What are the next likely areas for productive research regarding these dispositions and student learning?

4. Can these areas best be explored through developmental science, cognitive psychology, or cognitive neuroscience?

Examination of the Disposition Categories of  
Developmental Model II in Relation to Student Learning

*Category II.1: Cognitive*

All of the dispositional characteristics noted under Category II.1 Cognitive: (a) Knowledge and (b) Thinking Skills, were not only to be possessed by the candidates, but it was expected that the candidates consider it their role to help P-12 students develop these attitudes toward knowledge as well. Belief in the ideal of academic excellence was stressed most in the Conceptual Frameworks of the institutions, as a goal for graduates and the institution. Life-long learning, creative, analytical and reasoned thought processes were framed more specifically as dispositional characteristics.

*Subcategory II.1.A. Cognitive: Knowledge*

Codes identified:

academic	liberal arts	professionally grounded
cognitive	life-long learning	research
current	passion for learning	

The conceptualization of 'academic' articulated in the Institutional Reports was not just that candidates know content, that was a given, but that they understand the importance of emphasizing central concepts important in the domain and the methods of inquiry to explore deeper understanding of the central concepts or seek new knowledge. As a disposition, 'academic' was formulated on the developmental belief that knowledge is constantly reinventing itself and growing in much the same way cognitive science and human development frame learning processes. It was also as if the knowledge base was

perceived to have the same type of recursive nature as the genetic code itself, able to recombine existing blocks into many forms and continuously evolve (Hauser, 2002), both in terms of the knowledge base itself, and in terms of candidates and students developing a mind set for continuous engagement in learning over the lifespan.

The cognitive science concept that all “knowing” (that is, the mental representations of what an individual believes to be so) is developmentally constructed within the mind/brain of the learner, gives validation to knowledge as more than a collection of information. It is also thought processes of ongoing development within the individual and within the specialty area, as noted in INTASC Principle I (CCSSO, 2000). The concept of knowledge as a disposition is to understand it as a process of continually engaging with information to form and revise new mental representations over time within the mind/brain, what theorist Karmiloff-Smith (1992) terms “representational redescription.”

Adult learning research shows evidence that adults use these same processes, and may actually regress as well as progress in new or unusual situations, showing a greater range of strategies in approaching knowledge even than children (Fischer & Bidell 1998a; Knowles, 1998). This range should be taken into account in working with the education of undergraduate and graduate students. Another reason dispositions toward effective thinking skills would be important to a teacher, a “knowledge worker” (Senge, 1999), is the vast proliferation of information that must be scrutinized, valued, organized, and used wisely by teachers.

The institutions in this study and the educational leaders in the cited Good Work® study (Jensen, 2003a), more so than the INTASC principles, also framed ‘academic’ as a

point of pride in scholarship. They portrayed a vision of teachers as scholars and knowledge workers as well as facilitators of academic growth for students. While all of the institutions embraced the disposition of scholarship and academic excellence, only two spoke with any specificity to candidates truly understanding cognitive processes and systems of the mind/brain that facilitate the processes of thinking and learning. The code 'cognitive' occurred 14 times across the text of the INTASC Principles.

There is a definite danger, especially in today's popularized context of "brain-based learning," that not having a firm awareness of the details behind research studies makes teachers vulnerable to entrepreneurship in the name of research (Bruer, 1997). On the other hand, understanding how, for example, research has shown young children's conceptualization of the number line to be a critical element in the formation of early arithmetic concepts (Griffin, Case, & Siegler, 1994) can save many a young child and young teacher hours of uninformed trial and error. Understanding the varied developmental pathways students take to grasp core science concepts (Schwartz, 2001) can help those 'multiple approaches' (articulated by many of the institutions under Sub-category II.4.a Structure) take on a validated, purposeful shape with more likelihood that they will actually clarify students' mental representations. Work by Fischer, Ayoub et al. (1997) and Karmiloff-Smith (1998) have shown that observed behavioral outcomes can also have very different underlying cognitive patterns.

It would follow that the standards movement may benefit from reflection on how domain knowledge-bases are structured from this cognitive perspective. Educational standards are the articulation of currently known, but dynamic, essential elements of knowledge, key concepts, and skills in a domain. These can be expressed along multiple

pathways for different purposes. Standards in other fields are often framed as such. For example, standards for construction materials, design, safety, and accessibility in the housing industry serve as a foundation rather than a blueprint of 'sameness' for all buildings. You could metaphorically call this concept the recursive capacity of the knowledge base. As professionals and policy makers continuously revisit standards, it would be advisable to be cognizant of:

1. the recognition, strategic, and affective systems through which the mind/brain engages with the curriculum (Damasio, 1999; Gazzaniga, 2002; Rose, 2002; Spitzer, 2002);
2. the varied processes and trajectories of cognitive development followed by individual children who are a veritable collage of different gifts and challenges (Fischer, Ayoub et al., 1997; Gardner, 1994; Karmiloff-Smith, 1997); and
3. the difference between standards and standardization, as one is recursive, the other is not.

The ideal of being 'professionally grounded' in the community of expert knowledge and research would support a deeper connection between teachers and first-source research. It would also support new trends for more interdisciplinary work between the fields of teacher education (especially in authentic classroom situations), developmental psychology, and cognitive neuroscience.

*Subcategory II.1.B. Cognitive: Thinking Skills*

Codes Identified:

adaptive

creative

curious

analytical

critical thinking

innovative

inquiry	reasoned	thoughtful
intrapersonal	reflective	
problem-solver	synthesis	

Adaptability is a part of human life from the time that infants first pick up on the nuances of the unique language or languages of the context into which they are born (Pettito et al., 2000), and it eventually becomes a hallmark of ‘innovation’ and ‘problem-solving’ across fields as diverse as aeronautics and cardiology. The ability to be ‘adaptive’ is an obvious advantage in a dynamic classroom or a fast-paced society, but it is even more pertinent to remember that our survival systems are actually hardwired to adapt to live. Neural networks are plastic enough to allow actual changes in the brain to occur as a result of adaptations called: homologous area adaptation, cross-modal reassignment, map expansion or compensatory masquerade (Gazzaniga, 2002; Spitzer, 1999). Developmental science, and increasingly, cognitive neuroscience shows that adaptive learning is a primordial survival function, and a continuous, context-driven process, not a product.

It is easy to visualize the dispositions ‘curious’, ‘creative’, ‘innovative’, and ‘inquiry’ as necessary elements leading to the ends of ‘adaptive’, ‘innovation’ and ‘problem-solving’. How well teachers and students develop their dispositions for ‘critical thinking’, ‘reasoned’, ‘analysis’ and ‘synthesis’ can determine whether one’s creativity and curiosity lead to frivolous or useful / successful outcomes.

The elements of ‘reflection’ are also important to the Subcategory II.4.b Philosophy of ‘perspective’, and to elements of ‘diversity’ identified in II.2.c Community Values. All of the dispositions identified under II.1.b Thinking Skills are also cognitive

cornerstones of 'active learning' in Category II.4.a. Structure. This interconnectedness is important when considering development as a web of skill development.

*Category II. 2: Emotional.*

Cognitive psychology and cognitive neuroscience have increasing evidence that emotion plays a crucial, interactive part in both memory and reasoned decision-making (Damasio, 1999; Gazzaniga, 2002; Rose et al., 2002), creating many of the value-laden dispositions that will be discussed within this category. Personal, interpersonal, and community values are never far from emotional triggers.

Ever since the sensational story of Phineas Gage's prefrontal brain damage and subsequent loss of rational decision-making capacity (and many social graces) drew attention to the interplay of emotion and cognition in the late 1800s (Gazzaniga, 2002, pp. 537-539), popular press has been increasingly fascinated with the concept of emotion as an important part of intelligence. Daniel Goleman's case-study-framed synopsis of emotional intelligence research, *Emotional Intelligence: Why It Can Matter More than IQ* (1994), galvanized in the minds of the general public this concept of an actual connection between emotion, cognitive function, and social function, all of which are the underpinnings of dispositional value systems.

Patients with prefrontal brain damage exhibit significant deficits in reasoned decision-making, often making totally irrational decisions repeatedly, or obsessing over the simplest details to the extent of needing institutional care. Damasio (1994) interprets this as a loss of access to emotional learning, the critical interaction between emotion and cognition. These same individuals often show no changes in IQ scores on standardized tests. In today's frenzy over standardized testing as a high stakes measure of the worth of

education, it may be wise to ponder the fact that Phineas Gage showed no real difference on standardized IQ tests, but broad dysfunction in interpersonal relations and ability to manage the ordinary business of life (Gazzaniga, 2002).

In addition, infant studies have shown that babies who show a tendency to associate change with distress (i.e. misalignment from how they perceive things *should* be) actually exhibit some impeded short and long-term memory function (with effects through age 4 to 6). Most emotions involve memory; many memories involve emotion (Harris, 1989; LeDoux, 2002). Learning revolves around memory. Deleterious effects of unabated stress on cognitive function can include eventual hippocampal and memory damage. These effects on cognition make it necessary for teachers to maintain a delicate balance, providing enough of the challenge necessary to create the emotional-cognitive struggle that strengthens learning, between the proximal and optimal levels of development (Fischer & Bidell, 1998a; Vygotsky, 1978), without pushing across the line into anxiety or frustration (i.e. freeze, flight or fight) that can ultimately inhibit engagement, memory and learning.

While many educators now embrace the basic precepts of emotional intelligence, they may not distinguish the tri-fold relationship of emotions to value systems to classrooms. The mechanisms of emotional intelligence are intricately entwined neurologically with the mechanisms for emotional regulation, memory and cognitive decision-making. Nearly every important decision involves reflection on existing value systems. Most important decisions made by teachers in schools involve all three levels, personal, interpersonal, and community values, because of the inherently social nature of schooling other people's children (Delpit, 1995).



*Subcategory II.2.a. Emotional: Personal Values*

Codes Identified:

caring	personal well-being	stewardship
dignity	service	supportive
faith	social justice	

The personal values in this subcategory, particularly ‘caring’, ‘faith’, ‘service’, and ‘social justice’, are first of all related to the concept of altruism; the development of which has been researched considerably in the social sciences and the study of emotional development (Harris, 1989; Jensen, 2003b; Lewis & Haviland-Jones, 2000).

Studies of hurting and comforting in preschool children have noted that all children seem to pick up early in life that there are moral rules that are universals and generally have some link to observable injury, and rules of convention that are contextual (set up as parameters within that context by those in power) that may not have a direct observable link to injury or direct transfer to other contexts. These propensities are beginning to be supported in studies of cognitive neuroscience as well as traditional studies of emotional development (Damasio, 1999; Harris, 1989). Neuroscience indicates that similar areas in the brain “light up” whether stimuli are experienced or perceived (Gazzaniga, 2002), that would explain why nearly all children attach significance to distress in others.

Moral rules are generally able to be verbally articulated by nearly all preschool children, even by those who have been abused and, as a result, may not actually follow the moral rules. Whether conventional rules are followed generally depends on the dispositional context, whether the rule-maker is respected and respects the children, and

whether group dynamics support the conventional rules. The tendency of abused children to act with disregard or aggression toward others in distress, and the tendency of children to exhibit more comforting behaviors if mothers explained the consequences/reasons related to behaviors (Harris, 1989) underscore the role of socialization by significant adults and peers in the early development of altruistic behavior. These same factors can also determine whether one expresses detached sympathy or involved empathy (Harris, 1989). Basic aversive arousal, wanting the dissonance to stop (Batson, 1991; Gazzaniga, 2000; Lewis and Haviland-Jones, 2000; Nichols, 2001), moves even abused children to try to stop distress, even if they may do so by making aggressive demands or physically punishing the child in distress. Teachers aware of these similarities and differences in the manner in which emotion drives behavior have a much greater chance of designing a classroom environment with positive and effective emotional valence.

Psychologist William James' comment (paraphrased in Lewis & Haviland-Jones, 2000, pg. 460) that "emotion may be dampened or enflamed by culture, but not created by it" may inadvertently come close to the mark where explanations of altruism are concerned. While biological machinery may be in place as the mechanism of generation, it is in the "dampening" or "enflaming" that the presence or absence of altruism becomes manifest. Altruism also seems to be the desired default generally set by cultures. While a "survival of the fittest" stance may benefit an individual in the short term, a "survival of the group" stance would benefit the broader species in the long term. Such a concept is certainly dispositional.

*Subcategory II.2.b. Emotional: Interpersonal Values*

Codes Identified:

collaborative	interpersonal	sensitivity
collegial	open	teacher/learner
communication	respect	relationship
fairness	responsive	

Because interpersonal relationships are so foundational to teaching and learning environments, dispositions in this subcategory are discussed most extensively. Many of the other subcategories draw on other perspectives of the research presented here.

There is a great deal of social science research evidence that the dispositions ‘collaborative’, ‘communication’, ‘open’ and ‘respect’ are highly valued, and quite necessary to maintaining good working relationships among adults in educational settings, parents, and broad support from communities (Knowles, 1998; Vella, 1994); research which spills over into the fields of group dynamics and educational leadership.

On a more fundamental level of interpersonal communication, Eckman’s identification of six core facial expressions (fear, surprise, happiness, sadness, anger, and disgust) showed these emotions to be recognized universals across world cultures. Darwin’s earlier work in the same area showed even his infant son had a seemingly innate understanding of these expressions (Gazzaniga, 2002). Even something as basic as teachers’ and peers’ facial expressions, whether intentional or unconscious, can trigger emotional reactions in the most survival-oriented systems in the brain. Some teachers have been known to refer to the disconnection of higher order thinking in moments of extreme fear or anger as ‘brain-stem freeze-up’ indicating the survival systems of ‘freeze, flight, or fight’ cause a temporary redirection of attention and physiological resources, causing a disconnect in the ability to form rational decisions, regulate social behavior, or

concentrate on abstract content. These effects are similar to the conditions discussed at the beginning of Category II.2 regarding prefrontal brain injury.

Complex emotions require more unpacking to truly understand their subtle impact in classrooms. The codes 'fairness', 'sensitivity', 'respect' and 'responsive' all came to mind when reflecting on research findings regarding the interpersonal effects of shame and guilt, in relation to either adult or student relationships. Lewis and Haviland-Jones (2002) pointed out that guilt is not likely to escalate to anger, but shame (in the American, not the Chinese sense), when pressed to an extreme often does. If teachers do not understand that shaming a student is more likely to produce anger, they are much more likely to have anger (internalized or externalized) in their classrooms. The shame/guilt/anger connection is important since the management of anger is generally related to evaluation of a goal or goal interference (in the case of shame often a social efficacy goal), and management of guilt and embarrassment is generally related to evaluation of oneself. Evaluation of oneself can be scaffolded in a positive way to produce disclosure and reorganization of behavior. Productive reorganization of guilt feelings can mediate alignment with social norms (Kochanska et al. 2002).

Pianta (1999), in his work in early childhood education, has researched a strategy called *Banking Time*, in which teachers spend 10-15 minutes of non-directive time with a student, engaged in a positive activity of the student's choice, in order to build a more positive teacher-learner relationship and enhance later learning. Similar strategies have been used successfully between student peers having difficulty regulating acceptable behavior in the classroom, gradually retraining behavioral triggers and perhaps also neural pathway action potentials.

Reflection on one's own value systems and regulation of observable emotions can have a powerful influence on the reactions of students and others and the interpersonal valence of a classroom. Simple, but powerful, examples from research show that even young children understand receiving a not-so-desirable gift with grace to avoid offending the giver, or subduing one's joy in winning to assure a friend continues to play (Harris, 1989). How much more important must 'caring', 'dignity', and 'social justice' be in assuring students continue to engage in schooling.

Gross's process model of emotion regulation delineates individuals can regulate emotions (positively or negatively, intensifying or dampening) at five process points:

1. selection of the situation (approach/avoidance of an emotion eliciting situation);
2. modification of the situation (problem-focused coping);
3. deployment of attention (distraction, concentration, or rumination);
4. change of cognitions (selecting which meaning to attach); and
5. modulation of responses (emotional expression of display and action).

Any of these could occur at unconscious/automatic or conscious/effortful levels and valuing these processes can be vital to teachers' interpersonal functioning (Gross, 1998).

Amanda Rose's work (2002) on co-rumination, particularly in females, can give thoughtful educators insights into whether girls are reorganizing and developing positive strategies through relationships with friends, or whether they are spiraling together into unproductive patterns of repetitive negativity. It would be interesting to examine whether co-rumination is a concomitant factor in the phenomenon of covert "girl bullying" that is so devastating for many adolescent girls.

The combination of being ‘interpersonal’, ‘reflective’, and ‘thoughtful’ helps teachers understand the students with whom they learn and the outcomes of student behavior and work (Sub-category II.1.b Thinking Skills). These combined characteristics also articulate what Reiman and Thies-Sprinthall described in Taylor and Wasicsko’s (2000) analysis as “capable of understanding the assumptions, beliefs, and values behind choices.” Research has found this awareness is central to children developing Theory of Mind (Astington, 1993), i.e. realizing others have separate minds that may hold ideas different than theirs, setting them on the road to successfully navigating social-emotional contexts. (Gazzaniga, 2002, p. 674; Rose et al. 2002).

Blair (2002) indicates that cognition and emotion are integrated by school age, and that this integration can be a means of predicting school readiness. This finding does not mean, however, that all children can successfully use emotional intelligence to navigate complex emotional cues or regulate themselves the school environment, or that all children who are emotionally intelligent will, over time, use those skills for pro-social purposes. Naïve views of emotional intelligence can make the mistake of assuming more understanding about the emotions of self and others automatically translates to positivity.

In a much more global examination of factors that are quite closely related to emotional intelligence, Gardner in his study of *Changing Minds* (2004) found that individuals who are able to leverage changes in the emotional and cognitive processes (and thus value systems) of others can have vastly different motives and subsequent outcomes; think Machiavelli, Shaka, Mandella, Thatcher, King, Ghandi, Hitler. ‘Caring’, ‘dignity’, ‘faith’ ‘social justice’, and ‘supportive’ are codes that personify more than high levels of interpersonal intelligence, they personify values with deep emotional roots.

Mental-state talk (i.e. I think, I believe, I know) to young children from primary caregivers and siblings has been shown to have significant influence on their early understanding of false belief tasks. These conceptualizations are foundational to emerging Theory of Mind and emotional intelligence, and to the children’s own use of linguistic terminology about mental states (DeRosnay, Pons & Harris, in press; Harris, 1994 and 2004; Jenkins et al., 2003).

Lest new teachers become overwhelmed trying to manage all of this information on emotion and interpersonal values, the codes ‘personal well-being’ and ‘stewardship’ should remind them that they can only continue to altruistically meet the needs of students if they first attend to their own wellness and the sustainability of the profession.

*Subcategory II.2.c. Emotional: Community Values*

Codes Identified:

community	diversity	global
culture	equity	heritage
democratic		

Subcategory II.2.c included terms framing the sense of community values that the institutions affirmed, that are just as deeply tied to emotional and cognitive systems as the personal and interpersonal values examined earlier, but with an added dimension of social dynamics and affiliation. It was clear from each institution’s commitment to its individual sense of purpose and philosophy throughout the Institutional Report that each felt these dispositions were foundational to a teacher’s effective functioning with diverse students and to reaching the educational goals deemed important.

Whether the institution voiced of a broader sense of social responsibility by mirroring the personal values of 'service' or 'social justice' at the institutional level, whether they expressed emotional/value affiliation through 'heritage' and 'democracy' or 'culture' and 'equity', they all felt that individuals who teach children should have a desire to build community and improve the condition of society. As noted in the findings in Chapter III, it did not appear that these consistencies were merely for the eye of the accreditation team, but that the institutions' continued focus on these themes was rooted in the values and traditions of their founding.

The discussion of research on Theory of Mind within Subcategory II.2.b validates the disposition that teachers and schools be tuned in and responsive to community values. Students and parents in a nuclear community may also hold specific senses of purpose in their mind's eye, and these may be similar to or different from those held by the institution or the candidate. The teacher's ability, particularly a novice teacher entering a new situation, to perceive the community's mental picture of the way things are could be a telling point in whether that teacher is able to "connect" professionally and interpersonally with the students and parents with which they work, and ultimately whether they feel they are a comfortable "fit" to stay in that school community over time, and whether they can work positive changes in challenges students face. This subcategory in a sense has one foot in the research related to the emotional/value dispositions, and one in the research related to the social dispositions which follow.



### *Category II.3: Social*

#### *Subcategory II.3.a. Social: Character*

##### Codes Identified:

accommodating	ethical	resilient
character	integrity	responsible
commitment	persistence	self-motivated
confidentiality	positives	work ethic
enthusiasm	professional	

As was noted in the earlier discussion of the developmental modeling of the categories, the subcategory of Character embodies characteristics that govern others' social perception of the individual and hence ability to operate effectively within the educational environment. If one looks beyond the usual attributes of a good employee or colleague, the most pertinent developmental and cognitive science research in this area, from the perspective of student benefit, is in relation to secure attachment theory.

Secure attachment base and socialization factors have tremendous impact on students' neural development, cognition, motivation, and ability to function as effective decision-makers and successful learners (Damasio, 1999; Fischer & Ayoub et al., 1997; Frijda, 1998; Gazzaniga, 2002; Harris, 1999; McCartney & Dearing, 2002). Learning is inextricably embedded in the uncoded day-by-day interactions of the developing child and his/her home, school, and community environment. No tool, whether standard or assessment, can substitute for a stable, positive environment with caring adults, a professional teacher's skill, and necessary engagement in the developmental process itself.

As was noted in the introduction, few, if any, major studies of student success have taken dispositional attributes of teachers into account in comparison to academic achievement. A notable exception was found that has truly startling implications for the education community. In a National Bureau of Economic Research working paper (Hanusheck et al., 1998) based on the substantial database in the Harvard/UTDTexas Schools Project, Hanusheck et al. asserted two telling statements about teacher quality: first that “differences in teacher quality explain at least 7.5 % of the total variation in measured achievement gains, and probably much more,” overshadowing even the effect of class size. Secondly, they found a “striking pattern” in teacher turnover rate as a factor: “correlations in school average math gain differentials for grades 4 and 5 and grades 5 and 6 rise from close to zero for high turnover schools, to between .25 and .30 for schools with between 33% and 90% of the same teachers, and finally to almost .40 for schools in which 90 % of positions are staffed by the same teachers (Hanusheck et al., 1998).” These findings are a sobering revelation when combined with the statement in *No Dream Denied* (NCTAF, 2003) that teaching is becoming an “increasingly revolving door” profession due to the deterioration of workplace desirability factors, and the importance of secure attachment. These findings certainly elevate the importance of the dispositions ‘commitment’, ‘persistence’ and ‘resilient’.

*Subcategory II.3.b. Social: Leadership*

Codes Identified:

advocacy	engaging	inspiration
agency	facilitator/guide	leadership
empowerment	initiative	motivator

resourceful

role model

safety

The concept of educators as change agents, traditionally, simply meant parents believed good teachers and, hence, a good education were key to upward mobility. Now education and the teachers who drive it are increasingly framed as a pro-active, creative force. Their role now includes helping those who did not succeed in the traditional paradigm and fashioning critical and innovative thinking skills in students who will face a rapidly changing future. It is, however, still uncommon for classroom teachers to envision themselves as having any vested agency as leaders or real change agents.

Agency and advocacy are a relatively new (within the last 30 years) component of the dispositional phenomenon. While teachers have undoubtedly always been asked to be resourceful and resilient, the contemporary era in which education must truly reach every child and society expects far more than basic literacy, requires teachers to reach out beyond the classroom walls as never before, for both resources and to draw attention to and meet the needs of their students and society. The research already cited in the preceding subcategories outlines multiple pathways for these and all the other Leadership dispositions to exercise themselves.

#### *Category II.4: Contextual*

##### *Subcategory II.4.a. Contextual: Structure for Learning*

Codes Identified:

active learning

improvement

pedagogy

assessment

integration

planning

authentic

learner-centered

technology

contextual

multiple approaches

This subcategory represents an area vital to the efforts of teachers and researchers who seek to collaborate on authentic research in actual classroom environments. Instead of discussing research on classroom learning strategies already quite familiar to educators, the discussion of research here will concentrate on new ways of studying the complexity of teaching and learning as it really occurs, *in media res*.

One of the most promising new research approaches to the study of simultaneous teacher-student growth in complex settings is dynamic modeling (Fischer & Bidell, 1998a, b; Fischer & Kennedy, 1997; Fischer, Yan & Stewart, 2003; van Geert, 1994). Since experimentation on real children in classrooms is understandably limited, dynamic models of learning scenarios, if practical and usable, can enable much broader study of the interactions that influence learning and socialization in classrooms using authentically designed simulations. In cases of new skill applications, teacher growth can be every bit as variable as student growth. Teacher-growth/student-growth interactive models could be informative to a professional development school, wherein teacher educators, pre-service, and in-service teachers can simulate the effects of various methods and strategies prior to applying them in authentic settings with students in much the same way pilots use flight simulators. Key researchers in this field are Fischer and van Geert, who describe the simulation process as 'feeding' the 'growers' in the educational 'state space', experimenting with which factors (framed on actual real-life research) will transform the growth phenomena being studied from one 'state' to the next along their various growth trajectories (van Geert, 1994).

One simple dynamic model simulation (Jensen, 2004) was based on the importance of secure attachment relationships with significant adult(s) and the Pianta

*Banking Time* intervention mentioned earlier. The Banking Time strategy involves the teacher engaging in a non-directive classroom activity of the student's choice with the student for a scheduled period of time, generally 10-15 minutes of "saving up positive experiences," that provides "food" for the growth of student relationship understanding, while the teacher's growth receives professional development "food." The intervention's purpose is to improve the way both the teacher and the student frame their relationship, fitting this model's intent to study both change in the teacher and change in the student(s), intentionally pressuring the relationship to reorganize. The valence of the relationship is measured through interviews and observations and is represented in the model as a seven-point hierarchical scale. The professional growth of the teacher and the overall affective climate in the classroom are modeled applying an equivalent scale.

The model is set up as an interactive chart in Microsoft Excel® in which initial levels, available resources (in this case time with the teacher and professional development), and learning rate can be manipulated by the researcher based on likely levels from social/emotional and change process research. The model works through multiple iterations over time to produce growth curves in the chart. Changes in parameters produced interactive changes in growth trajectories similar to what could have been expected in a real classroom. Continuing needs in the development of valid measurement scales to frame these simulations are discussed in Chapter V.

*Subcategory II.4.b. Contextual: Philosophy*

Codes Identified:

alignment	developmental	pluralistic
all students	humanistic	progressive
complexity	high expectations	public education
constructivist	perspective	vision

Since this subcategory showed consensus in the area of ‘development,’ despite some differences in core philosophies, I felt it appropriate to close the discussion in this section with a short excerpt from a prior work of mine. In the essay from which this excerpt is drawn, I was asked to reflect on the philosophies and theories of Jean Piaget, often considered to be the founder of the study of child development in the Western world. The excerpt is an imaginary reflective journal on the life of a young child named Justine, responding to Fischer’s discussion of Piaget’s foundational theories on development (Fischer, 1978). I believe this excerpt succinctly and creatively addresses both the consensus and variation of philosophies expressed in the Institutional Reports and my philosophy on future research:

I’m beginning to think that Piaget’s approach paralleled his own preferences for scientific and mathematical processes in learning, and perhaps Vygotsky’s arguments for construction through social interaction paralleled his early interests in theater and law (Vygotsky, 1978). Both perspectives were perhaps also creatures of their times, the ages of scientific reason and social revolution (Gardner, 2003). Piaget’s fundamental focus on logic and science caused him, at least in some of his work, to discount much of what was going on in Justine’s creative imagination, scripting, and music during the pre-operational period as somehow less important than the development of true logic, even though these forms may also lead her to more sophisticated ways of knowing (Nelson, 1986; Bamberger, in press). I have observed Justine day by day gaining incremental progress, moving forward and backward (from groping to planning, imagination to imitation) and sometimes sideways in domains (narrative, then song, then motion with varied sophistication), but always developing and growing. As I answer her myriad of “whys” I also realize that conversation, asking and telling, is an important part of her ability to make meaning (Harris, 1989). Her social and moral development (in realizing her imagination goes on inside her, framing how

one interacts with a grandma, and caring that Kermit “got run over”) indicate still more dimensions to cognitive and moral development as well (Kohlberg, 1984; Fischer 1998).

I have to come to two conclusions watching Justine, one is that theorists, like other human beings, tend to focus their work on those aspects of learning that make best meaning for them in their context, and the second, while Piaget gave us some wonderful tools for thinking about children’s thinking, we really must go further than assimilating the study of development in logic and language, we must accommodate, forming and re-writing theoretical scripts, combining the work of many theorists in many domains to really glimpse the dynamic wonders of the whole child. (Jensen, 2003c)

## CHAPTER V

### OVERALL SUMMARY, SYNTHESIS AND RECOMMENDATIONS

#### Summary of Key Findings on Dispositions from Chapter III

Data were gathered in a phenomenological study of Institutional Reports submitted to the National Council for the Accreditation of Teacher Education (NCATE) by colleges of education selected in a randomized, stratified sample. Codes identified within the Institutional Report data were categorized using a developmental approach based in cognitive science, with the idea that this perspective would allow more useful ways of visualizing, eventually measuring, and cultivating desirable teacher dispositions.

The difference between a disposition and knowledge or skill was determined to be that a disposition represents a propensity toward a certain action in a certain context. The distinction that emerged overall from the data, put in terms of contemporary cognitive science, was that a disposition was an underlying mental state or 'mind set' with an action potential to produce particular types of responses to certain stimuli (Damasio, 1999; Gazzaniga, 2002; LeDoux, 1996; Rose et al., 2004; Spitzer, 1999). This underlying mental state about a certain concept (represented by the dispositional codes identified) was found to be a complex phenomenon consisting of the individual's own experiences and how s/he pictures his/her own abilities, intentions and potentials, how s/he pictures students and others' abilities, intentions, and potentials, and the underlying complex system of values and beliefs and constant environmental influences that frame and influence his/her decisions.



It was interesting that the first, most obvious emergence of categories followed a 'levels of analysis' mindset, much as one would encounter if conducting an actual accreditation visit or evaluating a program curriculum:

1. Dispositions regarding self
  - a. Self as a knowledgeable individual
  - b. Self as a person of professional character
  - c. Self as an actor with agency to produce change
2. Dispositions regarding students and others
  - a. Guiding beliefs about students and others
  - b. Actions toward students and others
3. Dispositions regarding approach to the work of education
  - a. Approach to "teacher work"
  - b. Approach to "student work"
4. Dispositions regarding the profession and purpose of education
  - a. Framing professionalism
  - b. Framing purpose

This alignment with the accreditation process was not surprising, since the Institutional Reports are written for the purpose of providing evidence for such reviews.

Upon revisiting the primary purpose of this study, to more clearly identify and categorize teacher dispositions in order to better evaluate and nurture desirable dispositions in teacher preparation, it seemed an approach focused on the individual's identity and development may be more useful to that end. With the central concept of individual development in mind, another perspective on categorization emerged. Similar

developmental concepts were grouped together, regardless of whether they existed in the levels of analysis of self, others, work or the profession. The resultant groupings are more person-oriented, and less organization or analysis-oriented. This second analysis emerged along lines based in developmental and cognitive science with main categories clustering around the cognitive, emotional, social, and contextual, that could serve a more constructivist than organizational approach to teacher development.

Table 7: Second Qualitative Analysis of Disposition Codes from the NCATE Institutional Reports: Groupings by Category and Sub-category using a Developmental Model

SECOND QUALITATIVE ANALYSIS OF DISPOSITION CODES FROM THE NCATE INSTITUTIONAL REPORTS:  
GROUPINGS BY CATEGORY AND SUB-CATEGORY USING A DEVELOPMENTAL MODEL

II.1. Cognitive	II.2. Emotional	II.3. Social	II.4. Contextual
<u>II.1.a. Knowledge</u> academic cognitive current liberal arts life-long learning passion for learning professionally grounded research	<u>II.2.a. Personal Values</u> caring dignity faith personal well-being service social justice stewardship supportive	<u>II.3.a. Character</u> accommodating character commitment confidentiality enthusiasm ethical integrity persistence positives professional resilient responsible self-motivated work ethic	<u>II.4.a. Structure for Learning</u> active learning assessment authentic contextual improvement integration learner-centered multiple approaches pedagogy planning technology
<u>II.1.b. Thinking Skills</u> adaptive analytical creative critical thinking curious innovative inquiry intrapersonal problem-solver reasoned reflective synthesis thoughtful	<u>II.2.b. Interpersonal Values</u> collaborative collegial communication fairness interpersonal open respect responsive sensitivity teacher/learner relationship	<u>II.3.b. Leadership</u> advocacy agency empowerment engaging facilitator/guide initiative inspiration leadership motivator resourceful role model safety	<u>II.4.b. Philosophy</u> alignment all students complexity constructivist developmental humanistic high expectations perspective pluralistic progressive public education vision
	<u>II.2.c. Community Values</u> community culture democratic diversity equity global heritage		

Table 7 from Chapter III is repeated here as a synopsis of the findings on dispositions valued by the institutions in the sample, framed in the developmental model. Overall, there was substantial alignment between codes identified in the Institutional Reports, the INTASC Ten Core Principles (CCSSO, 2000), and the prior dispositions literature surveyed and discussed in Chapter III. Notable variations follow.

INTASC framed personal values almost entirely in terms of being disposed toward supporting students, and institutions toward caring about students. The institutions expressed a broad context that included both caring and a sense of obligation to service or social justice. A somewhat unexpected finding was a convergence in the area of community values, given the variety of missions of the institutions and the often dialectic discussions of education issues. It was clear in the narratives that the institutions were all focusing on building a sense of community in which there was a sense of mutual respect and a rich, varied environment for students to learn about themselves and others.

Dispositional aspects of character were separated from personal values by thinking about character in terms of how the individual appears to others. The INTASC Principles framed 'character' around 'someone you would like to have working for you', and the institutions around 'someone with whom you would like to work'. While both valued a learner-centered approach, structuring of 'character' and 'leadership' factors reflected the perspective of schools and peers rather than students. Despite a focus in the profession on encouraging teachers to lead from the classroom, leadership was not prominent in this data.

Considerable variety existed in the frequency of occurrences in the subcategory of Structure for Learning. On one hand, the differences could be considered startling, with

'active learning', 'contextual', 'improvement', 'integration' and 'technology' all toward the bottom of the chart and 'assessment', 'authentic', 'learner-centered', 'multiple approaches', and 'pedagogy' all over the chart. It could be that the institutions' focus was to articulate their philosophy on dispositions overall, not in outlining how these would translate into specific classroom practices, that would be demonstrated to accreditation teams in the finer-grained analysis on campus rather than in the Institutional Reports.

Little definitive information was found regarding assessments unique to the area of dispositions, with most of the information on methods of assessment at this level of analysis, the Institutional Report, common to all teacher characteristics across knowledge, skills and dispositions. Additional discussion of assessment follows in the section on Recommendations for Further Study.

#### Summary of Student Learning and Dispositions from Chapter IV

##### *Category II.1: Cognitive*

##### *Subcategory II.1.a. Cognitive: Knowledge*

All institutions valued academic excellence in concepts and inquiry as well as pure content knowledge and saw the knowledge base as a growing, changing entity. Parallels exist between the ongoing development of the knowledge base and processes of interactive learning in cognition processes (Fischer & Bidell 1998a, b; Gardner, 1985). The cognitive science concepts of representational redescription (Karmiloff-Smith, 1992) and recursion (Hauser, 2002) support the idea of constantly-developing conceptual standards rather than standardization of the knowledge base.

### *Subcategory II.1.b. Cognitive: Thinking Skills*

Adaptability is a fundamental survival and learning mechanism, with reflective and reasoned decision-making likely to lead to higher level functioning and more successful behaviors. Parallel examples in cognitive science included the plasticity of actual neural tissue (Gazzaniga, 2002; Rose et al., 2004; Spitzer, 1999) as well as the representational redescription of mental states mentioned earlier (Karmiloff-Smith, 1992).

### *Category II.2: Emotional*

Emotion's interaction with cognition is grounded in physiological, behavioral and cognitive neuroscience research (Damasio, 1999; Gazzaniga, 2002; LeDoux, 1996; Rose et al., 2004). Complex thinking and decision-making have been shown to be more dependent on this emotion-cognition connection than the type of intelligence measured in standard IQ tests (Gazzaniga, 2002). Infant studies and neuroscience show evidence of connections between emotional systems and memory. These connections between emotion and cognition, driven by interactions with the environment are foundational to the formation of our personal, interpersonal and community value systems.

### *Subcategory II.2.a. Emotional: Personal Values*

Discussion of potential research into the formation of personal values included developmental, behavioral and neuroscience research into the development of altruism (Harris, 1989; Lewis & Haviland-Jones, 2000); reflected in many of the dispositions identified within this subcategory. Psychological factors can influence children's regard for rules, and culture and environment can 'dampen or enflame' emotion's role in values development (Harris, 1989; Lewis & Haviland-Jones, 2000, pg. 460).

### *Subcategory II.2.b. Emotional: Interpersonal Values*

Because interpersonal relationships have such a pervasive influence within teaching and learning environments, this section was discussed most extensively. Many of the other subcategories also draw on perspectives from the research presented here.

Research topics explored included;

1. interpersonal elements of adult learning (Knowles, 1998; Vella, 1994);
2. the universal impact of facial expressions (Gazzaniga, 2002);
3. the important nuances in complex emotions (Lewis & Haviland-Jones, 2002);
4. the impact of positive student-teacher relationships on social and academic functioning (Pianta, 1999);
5. how interpersonal skills balance classroom valence;
6. key points at which emotion can be regulated (Gross, 1998);
7. co-rumination vs. working through conflicts (Rose, 2002);
8. Theory of Mind in relation to perspective (Astington, 1993);
9. the importance of mental state talk (DeRosnay, Pons & Harris, in press; Harris, 1994, 2004; Jenkins, 2003); and
10. socio-emotional sustainability.

### *Sub-Category II.2.c. Emotional: Community Values*

Community values build upon the elements of personal and interpersonal values, so this section referenced both prior subcategories. This discussion also looked forward into how one is perceived socially in terms of character and leadership, as these perceptions can affect an individual's functioning within the education community.

## *Category II.2: Social*

### *Subcategory II.3.a. Social: Character*

Character embodies characteristics that govern others' social perception of the individual and hence ability to operate effectively within the educational environment. Looking beyond the usual attributes of a good employee or colleague, the most pertinent developmental and cognitive science research in this area was in relation to secure attachment theory, and the critical necessity for persistence and commitment to the profession and to students (Diamasio, 1999; Frijda, 1998; Gazzaniga, 2002; Hanusheck et al., 1998; McCartney & Dearing, 2002; NCTAF, 2003).

### *Subcategory II.3.b. Social: Leadership*

Agency and advocacy were discussed as relatively new phenomena expected in teacher dispositions, stemming from increased desire for professionalism and the need to serve all students in increasingly diverse situations. This data did not reveal evidence of emphasis on teacher leadership, but prior categories provide multiple pathways for these and other Leadership dispositions to exercise themselves.

## *Category II.4: Contextual*

### *Subcategory II.4.a. Contextual: Structure for Learning*

This subcategory represents an area vital to the future attempts of teachers and researchers to combine efforts for authentic research in actual classroom environments. Instead of discussing research on classroom methods and strategies already quite familiar to educators, the discussion of research related to this subcategory concentrated on new ways of studying the complexity of the teaching and learning environment *in media res*. One of the most promising new research approaches to the study of simultaneous teacher-

growth student-growth in complex settings is dynamic modeling (Fischer & Bidell, 1998a, b; Fischer & Kennedy, 1997; Fischer, Yan & Stewart, 2003; van Geert, 1994). A concrete example was provided in the form of a simple model based on attachment and positive teacher-student relationships (Jensen, 2004).

#### *Subcategory II.4.b. Contextual: Philosophy*

While dispositions identified were relatively similar across the sample, the institutions expressed a variety of philosophical foundations for the dispositions they identified. An excerpt from an imaginary journal entry on the theories of Piaget, reflecting on the routes philosophy and theory take, was used to address both the consensus and variation of philosophies expressed in the Institutional Reports and the researcher's philosophy on the direction future research should take (Jensen, 2003c).

It may be that the reason the education profession has such difficulty evaluating and systematically 'growing' positive dispositions and dealing with varied contextual influences is the tendency to approach the problem in the same manner the traditional knowledge and skills base has always been approached. In the case of dispositions, the profession may need to follow the constructive dynamics path of developmental and cognitive scientists. It is hoped that the reflection on dispositions and cognition in Chapter IV, and recommendations which follow will spark many other ideas for studies taking that approach.

#### Conclusions and Recommendations

The most striking overall finding from this analysis is that all of the institutions noted extremely similar beliefs about dispositions despite little documentation of a common literature base of research, common measurement instruments, or assessment



evidence. A confident general consensus regarding which dispositional characteristics were vital emerged from documents written by very diverse institutions from across the nation. There was an equally striking lack of consensus, a virtual absence of any information, regarding why those beliefs were held. There was little similarity found in the literature cited by the institutions, even though 2/3 of the sampled education units articulated references, and most did not articulate references that could be considered a research basis for dispositional characteristics. Assessment evidence was almost entirely absent, with few institutions mentioning specific instruments and no validating statistical effects of benefit for candidates or students of the candidates.

It is important to state that it cannot be entirely assumed that the validation of chosen dispositions through the research literature-base and assessment results were actually absent at the institutions. These Institutional Reports were submitted at a point in time when reporting on dispositions was still a new requirement and comprehensive assessments of candidate characteristics that would include dispositional assessments was still being phased in. In addition, the level of analysis used in this study, the Institutional Report, may not have been fine-grained enough to reveal more specific information validating the institution's delineation of dispositions.

This study has articulated two major findings for teacher education institutions and NCATE as entities that have placed a strong value on the development of effective teacher dispositions. First of all, the consensus of these varied institutions on important dispositional characteristics is a substantial finding that should not be discounted by the lack of evidence relating to a common research or assessment base. Such strong consensus from varied institutions must be occurring for a reason. This finding cannot be

simply attributed to common compliance with the NCATE standards, since institutions are free to define their own perspectives on both the conceptual framework for the education unit and expected candidate dispositions. It may be that the common definitions of important teacher dispositions stem from the field of education having a strong traditional grounding in educational philosophy and educational psychology, and the profession's general valuing of what is commonly called "craft knowledge" or decades of authentic experience in classrooms coupled with collegial interactions in this very social profession.

The second major point reinforced by this study, which had also been noted by prior researchers (Taylor & Wasicsko, 2000), is the need for validation. That is, to:

1. clearly articulate the literature base that supports the need for candidates to exhibit particular dispositional characteristics;
2. establish valid and reliable measurement scales for dispositional characteristics;  
and
3. design authentic research structures that will allow educators to bring advances in cognitive science research to bear on this issue.

It is with these two major points in mind that the following recommendations are made, to researchers and to teacher educators. It is hoped that this dissertation, along with prior research cited, has better articulated a common definition of teacher dispositions, and that it provides a useful developmental model for approaching validation.

#### *Recommendations for Collaborative Synergy*

Clearer and more interactive discussion of the research literature-base for teacher dispositions is necessary for its refinement. In order to facilitate better information for

colleges of education and more synergy between professions and domains, this researcher recommends educators provide more time for collegial reflection and more creative means of creating synergy through collegial interactions within and beyond the profession. Collaborative, reflective structures must include traditional academic tools such as constant literature review, discussion and conferencing, but can also make better use of new technologies that bridge between institutions and institutions at state, national and international levels. One tool with great potential is web-based, generative architectures for real-time or asynchronous collaboration. Internet-based architectures for institutions can assist sharing and critiquing information on the development of dispositions in light of research findings from the fields of developmental, cognitive, and neuroscience research. Such a tool could be brought to bear on the issue of clarification of the research base for teacher dispositions while respecting the diversity of institution's individual perspectives.

#### *Recommendations for Further Research*

Discovering and documenting multiple pathways and webs along which desirable dispositional attributes develop is the first step in determining valid measurement tools. It is important to stress at this point that teaching and learning relationships and the environments in which they operate are as complex as the individuals within them. It bears repeating that desirable dispositional pathways will undoubtedly be variable and show multiple paths to positive ends. The following steps could be taken to move researchers forward in discovering these pathways:

1. Expand upon the reflective analysis begun in Chapter IV, relating teacher dispositions to factors shown to impact learners (whether teacher candidate

learners or P-12 learners); and seek evidence for hypotheses suggested by those reflections. Two precepts are of utmost importance here; that researchers think creatively about new hypotheses from a cognitive science perspective, and that we validate our work on teacher dispositions with evidence.

2. Examine the literature base in related domains for adaptable tools. Similar lines of research may have existing measurement scales that could be adapted through more fine-grained research to meet specific needs of teacher education. Interdisciplinary study among the fields of education, psychology, and neuroscience is vital, but insights may also be gained from broader analysis (e.g. scientific studies of reflective reasoning skills, social science research on diversity and group dynamics, engagement, empowerment and leadership skills from business and industry).
3. Conduct careful analyses of reflective journals and observations of novice and expert teachers in authentic situations to determine how particular dispositions manifest in actual teaching situations, and how they may come into confluence with other dispositional characteristics to influence sudden qualitative changes across dispositional categories. Since all development is context-specific, it is likely, as with other human developmental processes, that multiple pathways of growth in and across these dispositions would emerge. These emergent patterns could be analyzed for hierarchical developmental structure and compared and contrasted with any existing scales from other domains.
4. Merge and refine information from the first three research recommendations. Use this merger of information to critically design and test measurement instruments

for validity, reliability and flexibility across contexts. These scales, once tested, can help teacher educators, acting as facilitator/guides, scaffold the reorganization of candidates' thinking across dispositional categories toward more sophisticated levels of understanding.

5. Once useful measurement scales for dispositional characteristics are established, it would be possible to use constructive dynamic modeling to create computer simulations in which both dispositional factors and contextual factors could be manipulated to study difficult problems, such as why a one teacher may succeed with a student when others do not, and how teachers may use adaptation and resiliency to accommodate varied situations.

*Structure for the Continued Examination of  
Disposition-related Practices within College of Education Programs*

In addition to asking what researchers must do to continue empirical examination of the effects of various dispositions on learning, colleges of education need to examine their existing practice in this area in more depth. This examination can identify strengths and areas for improvement and can assist researchers in focusing on needs generated in complex, authentic candidate and classroom environments. The developmental model for dispositions outlined in Chapter III requires colleges of education work as research partners in concert, not only with academic domains, but with the fields of cognitive psychology and cognitive neuroscience for purposeful, research-driven improvement. This section approaches application of this study's findings from two perspectives, self-examination of current program design, and application of specific dispositional findings to enhance program design.

### *Self-Examination of Current Program Design*

Two of the most important dispositions identified by colleges of education in this research sample were 'reflective' and 'collaborative'. Reflective and collaborative practice does not happen automatically, or automatically include all the necessary partners. These reflective collaborations must be purposefully structured and provided with resources to become a habit of practice and produce growth. One resource that is particularly important, and often rare, is the time to examine and discuss research and evidence from artifacts. This type of interdisciplinary interaction among professional colleagues is necessary to triangulate information, validate existing effective practices, and infuse new information or generate fresh perspectives for problem-solving. The four points listed below and the probe questions which follow articulate how reflection and collaboration may be approached by education units as they continue their work to develop dispositional characteristics most likely to improve teaching and learning.

It is quite likely that institutions and education units have general structures of this type in place as a result of their existing knowledge of organizational theory and accreditation documentation requirements. It is unlikely, based on evidence from the Institutional Reports surveyed in this sample, that these structures include a specific focus on dispositions as an action potential within practice, or that medical, psychology and education units pursue these goals together in a systematic manner. There was also little evidence that arts and sciences discipline domains are similarly involved, a link that would be especially important to dispositional Category II.1 Cognitive: Knowledge and Thinking Skills, considering that skill development is context-driven and context-specific (Fischer & Bidell, 1998a, b). It would, therefore, be imperative to view the following

strategies in a new light, with the end in mind to create a developmental, action-potential view of dispositions and an interconnected web of partnerships across domains.

1. Periodically dedicate a portion of corporate reflective structures and time to examine how program elements across the campus and within the education unit support, or could better support, growth of dispositions that enhance cognitive growth in teaching and learning.
2. Purposefully build in structures and time for guided reflection on research and practice for both faculty and teacher education candidates. Adult learning research validates that faculty and candidates alike need not only awareness and permission, but support and rehearsal to implement effective habits of mind and practice that support reflective reorganization and growth.
3. Build in structures to periodically conduct more fine-grained analysis of where, and exactly how, valued dispositional are being observed and scaffolded, and with what documented outcomes.
4. Build in structures that continuously construct an institutional memory of practice and support longitudinal collection and analysis of dispositional evidence.

The following probe questions are intended to assist colleges of education in a deeper reflective analysis of their own practices relative to candidate dispositions using the developmental model and information revealed in this analysis. These questions address areas of challenge that emerged from the scan of the NCATE documents; in particular:

1. specificity in how dispositions are addressed as an action potential beyond knowledge and skill development;

2. the validation of dispositional emphases through cognitive science research evidence;
3. the design of assessment systems specific to dispositional functioning; and
4. the need to connect first-hand research and teacher education practice in a more interactive and immediate manner, across campuses and across the broader professions nationally and internationally.

The questions address these points from the perspectives of curriculum design, research foundations, and systemic assessment.

1. *Evidence of Dispositions: Curriculum Mapping*

- a. What evidence of the disposition codes identified in this study is already apparent in the structure of programs in your education unit (i.e. are the dispositions specifically mentioned or apparent in curriculum planning documents, syllabi, assessments)?
- b. What evidence of the dispositions identified in this study is currently apparent in candidate artifacts produced through activities of your programs (i.e. journals, electronic discussion boards, observations, micro-teaching videos, essays, portfolios, comments of P-12 partners)?
- c. Is there evidence of cross-campus collaboration, particularly targeted to cognitive science-based dispositional development?
- d. Does cross-campus collaboration include reflection on context-specific dispositional characteristics as action potentials toward a desired end?
- e. Is there evidence of interdisciplinary foundations in the design of the curriculum? Do those foundations include first-source, contemporary



cognitive psychology and cognitive neuroscience science research as well as developmental science research?

- f. Which dispositions identified in this study are of most importance to your program from your own faculty and college or university's perspective?
- g. Does the evidence produced through application of the prior questions support the cultivation of these valued dispositions in particular?
- h. How can existing structures for curriculum development be retooled to better serve growth of these most valued dispositions through applied reflection or broader collaboration?

2. *Validation: Research Foundations Mapping*

- a. What is the research base your education unit has cited in the design of its curriculum?
- b. What contributions did cross-campus collaboration or interdisciplinary analysis make to this research base?
- c. What in your education unit's research base is specifically related to the development of dispositional characteristics?
- d. Does that specific dispositional research include first-source, contemporary cognitive psychology and cognitive neuroscience science research as well as developmental science research?
- e. What research evidence supports the relationship of the particular dispositions upon which your education unit focuses to success within the educational environment and facilitation of student learning?

- f. How does your education unit gather longitudinal data on dispositional functioning of your candidates, in course activities and in authentic situations with students?
- g. How can your education unit's gathering of longitudinal data build upon existing research and carry the refinement of effective teaching and learning practice forward?
- h. In particular, how does your education unit's participation in ongoing, applied research on dispositions better refine the hierarchical complexity inherent in the development of dispositional characteristics that support successful practice in teaching and learning?
- i. How can the resulting data better define measurement scales and multiple perspectives toward assessment and cultivation of dispositions?

3. *Systemic Assessment Structure: Evidence Mapping*

- a. Does your unit's dispositional evidence (gathered from program structure and candidate artifacts), when looked at *en masse*, show a purposeful and systemic approach to the fostering of the desired dispositions?
- b. What can be done to strengthen evidence that the development of these dispositions is being expressly scaffolded by the curriculum, activities, actions of faculty as role models, and assessments in your programs, rather than stemming from pre-existing characteristics of the candidates themselves?
- c. In which courses or program activities do these scaffolds, activities and assessments of dispositions occur?

- d. How can you, as a faculty member responsible for delivery of these particular courses or supervision of these activities, strengthen the scaffolding of desired dispositions within them?
- e. Specifically, how can scaffolding of the desired dispositions become more systemic and purposeful, and growth be documented?
- f. How is each individual scaffold of a disposition articulated with the larger system of scaffolds, activities and assessments to assure a comprehensive approach to dispositional development?
- g. Is there an identifiable sequence of experiences and assessments specific to the support of the desired disposition(s) that creates a web of scaffolded support throughout the program, from entrance to graduation?

*Selected Examples Applying Specific Dispositional Findings  
to Enhance Program and Research Designs*

Thinking points in this section are drawn from the findings in Chapters III and IV.

These points are given as examples of how colleges of education, working with researchers, could approach further examination and application of the results from specific teacher dispositions and student learning explored in Chapter IV. It is important to frame thinking about program design with an eye toward development. In particular, how hierarchical complexity, dealing in an increasingly sophisticated manner with a particular goal, can be identified, evaluated, and scaffolded. All skill development is contextual, including thinking and reasoning skills, stemming from interactions in a particular learning environment, reorganizing existing mental representations. It is a complex interaction within and across domains.

The examples below include a statement synthesizing a finding and questions researchers and teacher educators may ask as they reflect upon dispositions within a program structure that has a developmental bearing. These questions are also intended to evoke hypotheses for scientific examination of dispositional characteristics.

1. *Reflective practice is the overall most-cited dispositional characteristic in the sampled Institutional Reports. Reflection as a disposition is supported in cognitive science research as a critical component of qualitative changes in mental representations and growth in sophistication of conceptual understanding (Fischer & Bidell, 1998a, b; Karmiloff-Smith, 1992; Spitzer, 1999).* It can be said that reflective practice was evident in the Institutional Reports through strong occurrences of this code, but the level of analysis did not reveal scales of sophistication in thinking about or applying reflective practice for specific improvement purposes, or what would constitute a favorable manifestation of the disposition.
  - a. Upon what are candidates and faculty reflecting?
  - b. How does that reflection scaffold improvement?
  - c. Does reflection include consideration of developmental, cognitive, and neuroscience research findings?
  - d. Is reflection also structured around interrelated dispositions of 'reasoned' 'critical thinking' from the perspective of a 'problem-solver'?
  - e. Can qualitatively different levels of sophistication in reflective thinking be discerned over time?

- f. How can these qualitatively different changes be described for a particular disposition or set of interconnected dispositions?
  - g. Are there systematic findings from other professions upon which educators may draw to enhance their understanding of reflective processes?
  - h. Does the education unit take advantage of opportunities to enhance the professional research base by documenting reflective practice and resulting changes over time for longitudinal examination and refinement of measurement scales?
2. *Emotion has been found to be a critical, interactive component in cognition, particularly higher-order thinking and decision-making processes (Damasio, 1999; Gazzaniga, 2002; LeDoux, 1996).*
- a. How is an understanding of the emotion-cognition connection built into your education unit's approach to dispositions and student learning, particularly dispositions in Category II.2 Emotional/Values and II.4.a Structure for Learning?
  - b. How does the understanding of basic and complex emotions manifest itself in candidates' design of classroom management, student learning activities, interventions for particular students, interactions with parents and community?
  - c. How are dispositions such as 'caring', 'supportive', 'engaging', 'motivator', 'fairness', or 'empowerment' related to this understanding of the emotion-cognition connection?

- d. Is there a point at which understanding of the emotion-cognition connection might also create a discontinuity across dispositional categories to affect a qualitative change in character, leadership, or structure subcategory sophistication?
3. *The area of greatest divergence in the findings was in Subcategory II.4.a. Structure for Learning.* Codes such as ‘active learning’, ‘authentic’, ‘curious’, ‘contextual’, ‘engaging’, ‘improvement’, ‘innovative’, ‘inspiration’, ‘integration’, ‘learner-centered’, ‘motivator’, and ‘supportive’ ranked surprisingly low in the frequency distribution from the Institutional Reports, nearly all in the lowest quartile.
    - a. The importance of these factors in developmental and cognitive science research demands that colleges examine whether these codes ranked low simply due to the level of analysis in this study, or whether they would still emerge as underemphasized in a more fine-grained analysis of program structure and candidate artifact evidence.
    - b. Do faculty and teacher candidates, as a habit of mind, incorporate research findings regarding the recognition, strategic and affective neural systems involved in cognition when considering the needs of specific learners and design of the learning environment (Rose et al., 2002)? The curriculum mapping strategy suggested in the previous section could reveal this information.

- c. A similar questioning structure to that in the first example concerning reflection can be applied to examine the dispositions in Subcategory II.4.a. in more depth.

The research agenda on teacher dispositions is really just beginning, but there are many existing resources upon which critical thinkers can creatively build, one item, one step at a time. It is hoped the reflective questions posed above will help researchers and colleges of education generate information that may reveal common, effective practices to share across the profession, compare to analogous research in other professions, and continue to fuel improvement in our understanding of important effects of dispositional characteristics.

#### EPILOGUE

As the data and the literature bases were examined, they revealed an astonishing level of professionalism expected of new teachers. This is clearly not your parents' teaching profession. Not only are today's teacher candidates called upon to exhibit excellence in their academic knowledge and pedagogical skill; they are now called upon to navigate concepts previously reserved for clinical psychologists, brain surgeons, and group dynamics consultants. They are expected from the beginning of their practice to have exemplary interpersonal and complex organizational skills, to be highly moral and socially conscious. They are to be advocates for all students, and persons of ethical character who are professionally grounded community leaders, change agents and passionate visionaries. These are high expectations for any profession, but necessary to the complex task of teaching and the undeniable importance of their charge.

## APPENDIX A

### **PROFESSIONAL STANDARDS FOR THE ACCREDITATION OF COLLEGES, SCHOOLS, AND DEPARTMENTS OF EDUCATION** National Council for the Accreditation of Teacher Education (NCATE) (2002 Edition, Excerpts)

#### **CONCEPTUAL FRAMEWORK**

The conceptual framework(s) establishes the shared vision for a unit's efforts in preparing educators to work effectively in P-12 schools. It provides direction for programs, courses, teaching, candidate performance, scholarship, service, and unit accountability. The conceptual framework(s) is knowledge-based, articulated, shared, coherent, consistent with the unit and/or institutional mission, and continuously evaluated.

The conceptual framework(s) provides the following structural elements:

- the vision and mission of the institution and unit;
- the unit's philosophy, purposes, and goals;
- knowledge bases, including theories, research, the wisdom of practice, and education policies;
- candidate proficiencies aligned with the expectations in professional, state, and institutional standards;
- the system by which candidate performance is regularly assessed.

#### **I.CANDIDATE PERFORMANCE**

##### **Standard 1: *Candidate Knowledge, Skills, and Dispositions***

Candidates preparing to work in schools as teachers or other professional school personnel know and demonstrate the content, pedagogical, and professional knowledge, skills, and dispositions necessary to help all students learn. Assessments indicate that candidates meet professional, state, and institutional standards.

[Dispositions Rubric Excerpt]

##### **Dispositions for All Candidates**

###### **Target**

Candidates work with students, families, and communities in ways that reflect the dispositions expected of professional educators as delineated in professional, state, and institutional standards. Candidates recognize when



their own dispositions may need to be adjusted and are able to develop plans to do so.

#### **Acceptable**

Candidates are familiar with the dispositions expected of professionals. Their work with students, families, and communities reflects the dispositions delineated in professional, state, and institutional standards.

#### **Unacceptable**

Candidates are not familiar with professional dispositions delineated in professional, state, and institutional standards. They do not model these dispositions in their work with students, families, and communities.

### **Standard 2: *Assessment System and Unit Evaluation***

The unit has an assessment system that collects and analyzes data on the applicant qualifications, candidate and graduate performance, and unit operations to evaluate and improve the unit and its programs.

## **II. UNIT CAPACITY**

### **Standard 3: *Field Experiences and Clinical Practice***

The unit and its school partners design, implement, and evaluate field experiences and clinical practice so that teacher candidates and other school personnel develop and demonstrate the knowledge, skills, and dispositions necessary to help all students learn.

### **Standard 4: *Diversity***

The unit designs, implements, and evaluates curriculum and experiences for candidates to acquire and apply the knowledge, skills, and dispositions necessary to help all students learn. These experiences include working with diverse higher education and school faculty, diverse candidates, and diverse students in P-12 schools.

### **Standard 5: *Faculty Qualifications, Performance, and Development***

Faculty are qualified and model best professional practices in scholarship, service, and teaching, including the assessment of their own effectiveness as related to candidate performance. They also collaborate with colleagues in the disciplines and schools. The unit systematically evaluates faculty performance and facilitates professional development.

### **Standard 6: *Unit Governance and Resources***

The unit has the leadership, authority, budget, personnel, facilities, and resources, including information technology resources, for the preparation of candidates to meet professional, state, and institutional standards.

## APPENDIX B

### INTASC CORE PRINCIPLES

Council of Chief State School Officers Washington, DC

***Principle #1: 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.***

#### *Knowledge*

- The teacher understands major concepts, assumptions, debates, processes of inquiry, and ways of knowing that are central to the discipline(s) s/he teaches.
- The teacher understands how students' conceptual frameworks and their misconceptions for an area of knowledge can influence their learning.
- The teacher can relate his/her disciplinary knowledge to other subject areas.
- ***Dispositions***
- **The teacher realizes that subject matter knowledge is not a fixed body of facts but is complex and ever-evolving. S/he seeks to keep abreast of new ideas and understandings in the field.**
- **The teacher appreciates multiple perspectives and conveys to learners how knowledge is developed from the vantage point of the knower.**
- **The teacher has enthusiasm for the discipline(s) s/he teaches and sees connections to everyday life.**
- **The teacher is committed to continuous learning and engages in professional discourse about subject matter knowledge and children's learning of the discipline.**

#### *Performances*

- The teacher effectively uses multiple representations and explanations of disciplinary concepts that capture key ideas and link them to students' prior understandings.
- The teacher can represent and use differing viewpoints, theories, "ways of knowing" and methods of inquiry in his/her teaching of subject matter concepts.
- The teacher can evaluate teaching resources and curriculum materials for their comprehensiveness, accuracy, and usefulness for representing particular ideas and concepts.
- The teacher engages students in generating knowledge and testing hypotheses according to the methods of inquiry and standards of evidence used in the discipline.
- The teacher develops and uses curricula that encourage students to see, question, and interpret ideas from diverse perspectives.

- The teacher can create interdisciplinary learning experiences that allow students to integrate knowledge, skills, and methods of inquiry from several subject areas.

***Principle #2: The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.***

*Knowledge*

- The teacher understands how learning occurs--how students construct knowledge, acquire skills, and develop habits of mind--and knows how to use instructional strategies that promote student learning.
- The teacher understands that students' physical, social, emotional, moral and cognitive development influence learning and knows how to address these factors when making instructional decisions.
- The teacher is aware of expected developmental progressions and ranges of individual variation within each domain (physical, social, emotional, moral and cognitive), can identify levels of readiness in learning, and understands how development in any one domain may affect performance in others.

*Dispositions*

- **The teacher appreciates individual variation within each area of development, shows respect for the diverse talents of all learners, and is committed to help them develop self-confidence and competence.**
- **The teacher is disposed to use students' strengths as a basis for growth, and their errors as an opportunity for learning.**

*Performances*

- The teacher assesses individual and group performance in order to design instruction that meets learners' current needs in each domain (cognitive, social, emotional, moral, and physical) and that leads to the next level of development.
- The teacher stimulates student reflection on prior knowledge and links new ideas to already familiar ideas, making connections to students' experiences, providing opportunities for active engagement, manipulation, and testing of ideas and materials, and encouraging students to assume responsibility for shaping their learning tasks.
- The teacher accesses students' thinking and experiences as a basis for instructional activities by, for example, encouraging discussion, listening and responding to group interaction, and eliciting samples of student thinking orally and in writing.

***Principle #3: The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.***

*Knowledge*

- The teacher understands and can identify differences in approaches to learning and performance, including different learning styles, multiple intelligences, and performance modes, and can design instruction that helps use students' strengths as the basis for growth.

- The teacher knows about areas of exceptionality in learning—including learning disabilities, visual and perceptual difficulties, and special physical or mental challenges.
- The teacher knows about the process of second language acquisition and about strategies to support the learning of students whose first language is not English.
- The teacher understands how students' learning is influenced by individual experiences, talents, and prior learning, as well as language, culture, family and community values.

The teacher has a well-grounded framework for understanding cultural and community diversity and knows how to learn about and incorporate students' experiences, cultures, and community resources into instruction.

#### *Dispositions*

- **The teacher believes that all children can learn at high levels and persists in helping all children achieve success.**
- **The teacher appreciates and values human diversity, shows respect for students' varied talents and perspectives, and is committed to the pursuit of "individually configured excellence."**
- **The teacher respects students as individuals with differing personal and family backgrounds and various skills, talents, and interests.**
- **The teacher is sensitive to community and cultural norms.**
- **The teacher makes students feel valued for their potential as people, and helps them learn to value each other.**

#### *Performances*

- The teacher identifies and designs instruction appropriate to students' stages of development, learning styles, strengths, and needs.
- The teacher uses teaching approaches that are sensitive to the multiple experiences of learners and that address different learning and performance modes.
- The teacher makes appropriate provisions (in terms of time and circumstances for work, tasks assigned, communication and response modes) for individual students who have particular learning differences or needs.
- The teacher can identify when and how to access appropriate services or resources to meet exceptional learning needs.
- The teacher seeks to understand students' families, cultures, and communities, and uses this information as a basis for connecting instruction to students' experiences (e.g. drawing explicit connections between subject matter and community matters, making assignments that can be related to students' experiences and cultures).
- The teacher brings multiple perspectives to the discussion of subject matter, including attention to students' personal, family, and community experiences and cultural norms.
- The teacher creates a learning community in which individual differences are respected.

***Principle #4:*** The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.

***Knowledge***

- The teacher understands the cognitive processes associated with various kinds of learning (e.g. critical and creative thinking, problem structuring and problem solving, invention, memorization and recall) and how these processes can be stimulated.
- The teacher understands principles and techniques, along with advantages and limitations, associated with various instructional strategies (e.g. cooperative learning, direct instruction, discovery learning, whole group discussion, independent study, interdisciplinary instruction).
- The teacher knows how to enhance learning through the use of a wide variety of materials as well as human and technological resources (e.g. computers, audio-visual technologies, videotapes and discs, local experts, primary documents and artifacts, texts, reference books, literature, and other print resources).

***Dispositions***

- **The teacher values the development of students' critical thinking, independent problem solving, and performance capabilities.**
- **The teacher values flexibility and reciprocity in the teaching process as necessary for adapting instruction to student responses, ideas, and needs.**

***Performances***

- The teacher carefully evaluates how to achieve learning goals, choosing alternative teaching strategies and materials to achieve different instructional purposes and to meet student needs (e.g. developmental stages, prior knowledge, learning styles, and interests).
- The teacher uses multiple teaching and learning strategies to engage students in active learning opportunities that promote the development of critical thinking, problem solving, and performance capabilities and that help student assume responsibility for identifying and using learning resources.
- The teacher constantly monitors and adjusts strategies in response to learner feedback.
- The teacher varies his or her role in the instructional process (e.g. instructor, facilitator, coach, audience) in relation to the content and purposes of instruction and the needs of students.
- The teacher develops a variety of clear, accurate presentations and representations of concepts, using alternative explanations to assist students' understanding and presenting diverse perspectives to encourage critical thinking.

***Principle #5:*** 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.

### *Knowledge*

- The teacher can use knowledge about human motivation and behavior drawn from the foundational sciences of psychology, anthropology, and sociology to develop strategies for organizing and supporting individual and group work.
- The teacher understands how social groups function and influence people, and how people influence groups.
- The teacher knows how to help people work productively and cooperatively with each other in complex social settings.
- The teacher understands the principles of effective classroom management and can use a range of strategies to promote positive relationships, cooperation, and purposeful learning in the classroom.
- The teacher recognizes factors and situations that are likely to promote or diminish intrinsic motivation, and knows how to help students become self-motivated.

### *Dispositions*

- **The teacher takes responsibility for establishing a positive climate in the classroom and participates in maintaining such a climate in the school as whole.**
- **The teacher understands how participation supports commitment, and is committed to the expression and use of democratic values in the classroom.**
- **The teacher values the role of students in promoting each other's learning and recognizes the importance of peer relationships in establishing a climate of learning.**
- **The teacher recognizes the value of intrinsic motivation to students' life-long growth and learning.**
- **The teacher is committed to the continuous development of individual students' abilities and considers how different motivational strategies are likely to encourage this development for each student.**

### *Performances*

- The teacher creates a smoothly functioning learning community in which students assume responsibility for themselves and one another, participate in decision making, work collaboratively and independently, and engage in purposeful learning activities.
- The teacher engages students in individual and cooperative learning activities that help them develop the motivation to achieve, by, for example, relating lessons to students' personal interests, allowing students to have choices in their learning, and leading students to ask questions and pursue problems that are meaningful to them.
- The teacher organizes, allocates, and manages the resources of time, space, activities, and attention to provide active and equitable engagement of students in productive tasks.
- The teacher maximizes the amount of class time spent in learning by creating expectations and processes for communication and behavior along with a physical setting conducive to classroom goals.

- The teacher helps the group to develop shared values and expectations for student interactions, academic discussions, and individual and group responsibility that create a positive classroom climate of openness, mutual respect, support, and inquiry.
- The teacher analyzes the classroom environment and makes decisions and adjustments to enhance social relationships, student motivation and engagement, and productive work.
- The teacher organizes, prepares students for, and monitors independent and group work that allows for full and varied participation of all individuals.

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

*Knowledge*

The teacher understands communication theory, language development, and the role of language in learning.

- The teacher understands how cultural and gender differences can affect communication in the classroom.
- The teacher recognizes the importance of nonverbal as well as verbal communication.
- The teacher knows about and can use effective verbal, nonverbal, and media communication techniques.

*Dispositions*

- **The teacher recognizes the power of language for fostering self-expression, identity development, and learning.**
- **The teacher values many ways in which people seek to communicate and encourages many modes of communication in the classroom.**
- **The teacher is a thoughtful and responsive listener.**
- **The teacher appreciates the cultural dimensions of communication, responds appropriately, and seeks to foster culturally sensitive communication by and among all students in the class.**

*Performances*

- The teacher models effective communication strategies in conveying ideas and information and in asking questions (e.g. monitoring the effects of messages, restating ideas and drawing connections, using visual, aural, and kinesthetic cues, being sensitive to nonverbal cues given and received).
- The teacher supports and expands learner expression in speaking, writing, and other media.
- The teacher knows how to ask questions and stimulate discussion in different ways for particular purposes, for example, probing for learner understanding, helping students articulate their ideas and thinking processes, promoting risk-taking and problem-solving,

facilitating factual recall, encouraging convergent and divergent thinking, stimulating curiosity, helping students to question.

- The teacher communicates in ways that demonstrate a sensitivity to cultural and gender differences (e.g. appropriate use of eye contact, interpretation of body language and verbal statements, acknowledgment of and responsiveness to different modes of communication and participation).
- The teacher knows how to use a variety of media communication tools, including audio-visual aids and computers, to enrich learning opportunities.

***Principle #7: The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.***

*Knowledge*

- The teacher understands learning theory, subject matter, curriculum development, and student development and knows how to use this knowledge in planning instruction to meet curriculum goals.
- The teacher knows how to take contextual considerations (instructional materials, individual student interests, needs, and aptitudes, and community resources) into account in planning instruction that creates an effective bridge between curriculum goals and students' experiences.
- The teacher knows when and how to adjust plans based on student responses and other contingencies.

*Dispositions*

- **The teacher values both long term and short term planning.**
- **The teacher believes that plans must always be open to adjustment and revision based on student needs and changing circumstances.**
- **The teacher values planning as a collegial activity.**

*Performances*

- As an individual and a member of a team, the teacher selects and creates learning experiences that are appropriate for curriculum goals, relevant to learners, and based upon principles of effective instruction (e.g. that activate students' prior knowledge, anticipate preconceptions, encourage exploration and problem-solving, and build new skills on those previously acquired).
- The teacher plans for learning opportunities that recognize and address variation in learning styles and performance modes.
- The teacher creates lessons and activities that operate at multiple levels to meet the developmental and individual needs of diverse learners and help each progress.
- The teacher creates short-range and long-term plans that are linked to student needs and performance, and adapts the plans to ensure and capitalize on student progress and motivation.



- The teacher responds to unanticipated sources of input, evaluates plans in relation to short- and long-range goals, and systematically adjusts plans to meet student needs and enhance learning.

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

*Knowledge*

- The teacher understands the characteristics, uses, advantages, and limitations of different types of assessments (e.g. criterion-referenced and norm-referenced instruments, traditional standardized and performance-based tests, observation systems, and assessments of student work) for evaluating how students learn, what they know and are able to do, and what kinds of experiences will support their further growth and development.
- The teacher knows how to select, construct, and use assessment strategies and instruments appropriate to the learning outcomes being evaluated and to other diagnostic purposes.
- The teacher understands measurement theory and assessment-related issues, such as validity, reliability, bias, and scoring concerns.

*Dispositions*

- **The teacher values ongoing assessment as essential to the instructional process and recognizes that many different assessment strategies, accurately and systematically used, are necessary for monitoring and promoting student learning.**
- **The teacher is committed to using assessment to identify student strengths and promote student growth rather than to deny students access to learning opportunities.**

*Performances*

- The teacher appropriately uses a variety of formal and informal assessment techniques (e.g. observation, portfolios of student work, teacher-made tests, performance tasks, projects, student self-assessments, peer assessment, and standardized tests) to enhance her or his knowledge of learners, evaluate students' progress and performances, and modify teaching and learning strategies.
- The teacher solicits and uses information about students' experiences, learning behavior, needs, and progress from parents, other colleagues, and the students themselves.
- The teacher uses assessment strategies to involve learners in self-assessment activities, to help them become aware of their strengths and needs, and to encourage them to set personal goals for learning.
- The teacher evaluates the effect of class activities on both individuals and the class as a whole, collecting information through observation of classroom interactions, questioning, and analysis of student work.
- The teacher monitors his or her own teaching strategies and behavior in relation to student success, modifying plans and instructional approaches accordingly.

- The teacher maintains useful records of student work and performance and can communicate student progress knowledgeably and responsibly, based on appropriate indicators, to students, parents, and other colleagues.

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

*Knowledge*

- The teacher understands methods of inquiry that provide him/her with a variety of self-assessment and problem-solving strategies for reflecting on his/her practice, its influences on students' growth and learning, and the complex interactions between them.
- The teacher is aware of major areas of research on teaching and of resources available for professional learning (e.g. professional literature, colleagues, professional associations, professional development activities).

*Dispositions*

- **The teacher values critical thinking and self-directed learning as habits of mind.**
- **The teacher is committed to reflection, assessment, and learning as an ongoing process.**
- **The teacher is willing to give and receive help.**
- **The teacher is committed to seeking out, developing, and continually refining practices that address the individual needs of students.**
- **The teacher recognizes his/her professional responsibility for engaging in and supporting appropriate professional practices for self and colleagues.**

*Performances*

- The teacher uses classroom observation, information about students, and research as sources for evaluating the outcomes of teaching and learning and as a basis for experimenting with, reflecting on, and revising practice.
- The teacher seeks out professional literature, colleagues, and other resources to support his/her own development as a learner and a teacher.
- The teacher draws upon professional colleagues within the school and other professional arenas as supports for reflection, problem-solving and new ideas, actively sharing experiences and seeking and giving feedback.

***Principle #10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.***

*Knowledge*

- The teacher understands schools as organizations within the larger community context and understands the operations of the relevant aspects of the system(s) within which s/he works.

- The teacher understands how factors in the students' environment outside of school (e.g. family circumstances, community environments, health and economic conditions) may influence students' life and learning.
- The teacher understands and implements laws related to students' rights and teacher responsibilities (e.g. for equal education, appropriate education for handicapped students, confidentiality, privacy, appropriate treatment of students, reporting in situations related to possible child abuse).

#### *Dispositions*

- **The teacher values and appreciates the importance of all aspects of a child's experience.**
- **The teacher is concerned about all aspects of a child's well-being (cognitive, emotional, social, and physical), and is alert to signs of difficulties.**
- **The teacher is willing to consult with other adults regarding the education and well-being of his/her students.**
- **The teacher respects the privacy of students and confidentiality of information.**
- **The teacher is willing to work with other professionals to improve the overall learning environment for students.**

#### *Performances*

- The teacher participates in collegial activities designed to make the entire school a productive learning environment.
- The teacher makes links with the learners' other environments on behalf of students, by consulting with parents, counselors, teachers of other classes and activities within the schools, and professionals in other community agencies.
- The teacher can identify and use community resources to foster student learning.
- The teacher establishes respectful and productive relationships with parents and guardians from diverse home and community situations, and seeks to develop cooperative partnerships in support of student learning and well being.
- The teacher talks with and listens to the student, is sensitive and responsive to clues of distress, investigates situations, and seeks outside help as needed and appropriate to remedy problems.
- The teacher acts as an advocate for students.

APPENDIX C  
CODEBOOK OF IDENTIFIED DISPOSITIONS

Cod Nm	Codes	CodeDscr	Categ SubCateg CatNum SubCatNm	IICateg IISbCat IICatNum IISbCtNm
1	<i>academic</i>	values and strives for intellectual, academic excellence; competent in the content and professional knowledge bases: essential knowledge, concepts, questions and forms of inquiry	self knowledgeable 1 1a	cognitive knowledge II.1 II.1.a
2	<i>accommodating</i>	understands individual differences, strengths and challenges; adapts methods, strategies and curriculum to enhance teaching and learning for all students	others beliefs 2 2a	social character II.3 II.3.a
3	<i>active learning</i>	believes in, structures, and stimulates active participation in learning	work student work 3 3b	contextual structure II.4 II.4.a
4	<i>adaptive</i>	is able to evaluate contextual elements that may impact learning and adapt to work effectively within varied contexts and with varied learners; this code focuses on the ability of the candidate to be flexible and adapt, whereas the code 'accommodating' focuses on meeting the identified needs of P-12 students	self agency 1 1c	cognitive thinking skills II.1 II.1.b
5	<i>advocacy</i>	is cognizant of issues with critical impact on the field of education and students; advocates for the needs and rights of students and the profession; takes initiative to promote positive change	frame profession 4 4a	social leadership II.3 II.3.b
6	<i>agency</i>	works to develop a sense of personal and professional presence in which they are empowered and empower others to create and sustain positive 'life influencing' visions and actions for constructive change	self knowledgeable 1 1c	social leadership II.3 II.3.b
7	<i>alignment</i>	dispositions exhibited are in alignment with those valued by the profession and society; dispositions valued by the profession and society were identified as being codified in professional, state and institutional standards and in commonly accepted community or cultural mores for professional and ethical practice	frame profession 4 4a	contextual philosophy II.4 II.4.b
8	<i>all students</i>	believes all students can learn and are entitled to opportunity to learn; works persistently to help all students learn; specific references included setting high standards for all learners,	others beliefs 2 2a	contextual philosophy II.4 II.4.b

		maintaining equity, meeting needs of English language learners, and religious beliefs in the worth of all persons		
9	<i>analytical</i>	analyzes observations and information within context using proven research and prior evidence to make objective decisions	self knowledgeable 1 1a	cognitive thinking skills II.1 II.1.b
10	<i>assessment</i>	realizes formative and summative assessment must be valid, reliable, give multiple views, and serve improvement in teaching and learning; this code was used in reference to assessing student learning, assessing how students approach learning, identifying possible learner strengths and difficulties for specific attention, and appropriate communications with parents regarding student progress	work teacher work 3 3a	contextual structure II.4 II.4.a
11	<i>authentic</i>	grounds teaching and learning in relevant, real-world, contextual applications as well as a sound theoretical base; also used in reference to authentic assessment	work student work 3 3b	contextual structure II.4 II.4.a
12	<i>caring</i>	exhibits sincere caring and concern for the welfare, development and growth of students, peers and others	others actions 2 2b	emotional values II.2 II.2.a
13	<i>character</i>	exhibits/builds positive strength of character; some insitutions mentioned general attributes such as integrity, courage, compassion and industry, and others character traits more specific to religious or cultural value systems such as [religion]-centered character, hospitality or modesty	self character 1 1b	social character II.3 II.3.a
14	<i>cognitive</i>	uses professional knowledge of cognitive science to understand their own and others' thinking processes and guide the design of teaching and learning experiences	others beliefs 2 2a	cognitive knowledge II.1 II.1.a
15	<i>collaborative</i>	values cooperative interaction within the profession and with parents and community for the betterment of educational practice and success of students	others beliefs 2 2a	emotional interpersonal 1 II.2 II.2.b
16	<i>collegial</i>	values interactions with colleagues and works to build positive relationships with other educators to improve learning and the profession	others beliefs 2 2a	emotional interpersonal 1 II.2 II.2.b
17	<i>commitment</i>	commitment to students and their communities, the profession, personal growth	work teacher work 3 3a	social character II.3 II.3.a
18	<i>communication</i>	communicates in written and oral form clearly, effectively, appropriately and sensitively, with consideration of context and purpose to be achieved; fosters effective communication skills in students; is also a good listener,	work teacher work 3 3a	emotional interpersonal 1 II.2 II.2.b

		fostering reflection, understanding and effective two-way communication		
19	<i>community</i>	community-minded; values positive human interactivity for the betterment of all; sees educational paradigm as a learning community and a center for ethical, social and civic activity; takes time and effort to relate positively to parents, to understand and be appropriately involved in the community context in which their students live	work teacher work 3 3a	emotional community II.2 II.2.c
20	<i>complexity</i>	understands there is a complex interaction of factors which affect the teaching and learning relationship and environment and adapts within those dynamics to influence positive outcomes	frame profession 4 4a	contextual philosophy II.4 II.4.b
21	<i>confidentiality</i>	respects the privacy and confidentiality of information in an ethical manner	work teacher work 3 3a	social character II.3 II.3.a
22	<i>constructivist</i>	believes knowledge and skill is constructed by the learner through interaction with the environment, others and reconsideration of past experiences; incorporates constructivist thinking as they reflect on instructional design and dealings with others	work student work 3 3b	contextual philosophy II.4 II.4.b
23	<i>contextual</i>	is able to accurately evaluate the important contextual elements in their teaching environment; understands how variation in the context of the learning environment influences how they should teach and students' ability to learn	frame profession 4 4a	contextual structure II.4 II.4.a
24	<i>creative</i>	uses and encourages imagination and creativity in the classroom; recognizes the importance of creativity to problem solving and innovative thinking	self knowledgeable 1 1a	cognitive thinking skills II.1 II.1.b
25	<i>critical thinking</i>	makes judgments based on objective analysis and professionally grounded beliefs about the purposes of education; can use the methods of critical inquiry pertinent to their subject areas; is able to successfully critique students' and their own performance and devise objective, logical strategies for improvement	work student work 3 3b	cognitive thinking skills II.1 II.1.b
26	<i>culture</i>	understands culture's importance and pervasive effect on persons and learning; openly respects and incorporates cultural understanding as an asset to the teaching and learning environment	frame purpose 4 4b	emotional community II.2 II.2.c
27	<i>curious</i>	inquisitive, shows active interest in seeking new knowledge about subjects, students, and ways to enhance teaching and learning, willing to examine and explore the potential of new or different ideas and innovations that could benefit students	work student work 3 3b	cognitive thinking skills II.1 II.1.b
28	<i>current</i>	stays current on new knowledge and discoveries about both content (subject matter) and pedagogy; demonstrates ongoing, life-long	work teacher work 3	cognitive knowledge II.1

		learning habits	3a	II.1.a
29	<i>democratic</i>	values and models within the educational environment the principles necessary to the stability and prosperity of a democratic society; values the freedom, integrity and respect of all individuals	frame purpose 4 4b	emotional community II.2 II.2.c
30	<i>developmental</i>	understands cognitive, social, physical, and emotional developmental processes and the importance of developmentally appropriate curriculum and activities; realizes human development is an interactive process between the individual and their environment	others beliefs 2 2a	contextual philosophy II.4 II.4.b
31	<i>dignity</i>	values others; demonstrates a respect for others' right to basic dignities and justice, values their individual differences and their work and contributions	others actions 2 2b	emotional values II.2 II.2.a
32	<i>diversity</i>	shows respect for diversity in others and the richness diversity can bring to education; includes respecting those with differing perspectives and world views, socioeconomic situations, cultures and languages, learning preferences and personal characteristics; appropriately incorporates and accomodates diversity in curriculum and activities for learning	frame purpose 4 4b	emotional community II.2 II.2.c
33	<i>empowerment</i>	empowers, lifts up students and peers, encourages and enables others to excel	others actions 2 2b	social leadership II.3 II.3.b
34	<i>engaging</i>	understands the mechanisms of human attention; actively draws students into participatory learning	others actions 2 2b	social leadership II.3 II.3.b
35	<i>enthusiasm</i>	shows visible enthusiasm toward the material taught, students, the learning environment and the work of education	work teacher work 3 3a	social character II.3 II.3.a
36	<i>equity</i>	believes in fair treatment and opportunity for all and works to positively address issues of equity	work teacher work 3 3a	emotional community II.2 II.2.c
37	<i>ethical</i>	understands society and the profession hold a very high ethical expectation for those who work with children; exhibits ethical behavior in line with social, moral and professional codes of ethics	frame profession 4 4a	social character II.3 II.3.a
38	<i>facilitator/guide</i>	sees the teacher as a facilitator or guide who develops self-motivated, active learning habits in students	others actions 2 2b	social leadership II.3 II.3.b
39	<i>fairness</i>	seeks to be fair, equitable, principled and trustworthy; treats all students and others with similar objectivity and respect	work teacher work 3	emotional interpersona l

			3a	II.2 II.2.b
40	<i>faith</i>	faith, beliefs undergird decisions and are demonstrated in actions; religiously affiliated institutions spoke of their particular beliefs and a moral dedication to help candidates and students develop a spiritual foundation and sense of service to community	frame purpose 4 4b	emotional values II.2 II.2.a
41	<i>global</i>	recognizes the reality of their integration in a global society; prepares students to understand and respect global perspectives and interact positively and successfully in a global environment	frame purpose 4 4b	emotional community II.2 II.2.c
42	<i>heritage</i>	values history and heritage as a foundation to knowledge, at the same time considers the changing shape of the future	frame purpose 4 4b	contextual community II.4 II.2.c
43	<i>high expectations</i>	sets high expectations for students, self and the teaching profession and scaffolds success toward those expectations	others beliefs 2 2a	contextual philosophy II.4 II.4.b
44	<i>humanistic</i>	values the ability of education to improve the human condition	frame purpose 4 4b	emotional philosophy II.2 II.4.b
45	<i>improvement</i>	focuses on continuous improvement of schooling and learning, using inquiry, data and reflection as tools for improvement	work teacher work 3 3a	contextual structure II.4 II.4.a
46	<i>initiative</i>	is pro-active, takes action to meet student needs, improve the learning environment, situation of students, profession and community	self agency 1 1c	social leadership II.3 II.3.b
47	<i>innovative</i>	values exploration of new ideas and techniques, uses creative approaches to problem-solving; some institutions mentioned use of new technologies in particular	work teacher work 3 3a	cognitive thinking skills II.1 II.1.b
48	<i>inquiry</i>	values, uses and teaches systematic inquiry processes across domains as a means of discovering and refining information and solving problems	work student work 3 3b	cognitive thinking skills II.1 II.1.b
39	<i>inspiration</i>	helps others find inspiration, direction, a desire for knowledge or realization of expression; while the code 'faith' was generally associated with inspiration stemming from religious beliefs, the code 'inspiration' held no particular sacred or secular connotation	others actions 2 2b	social leadership II.3 II.3.b
50	<i>integration</i>	understands and uses the inter-relatedness of disciplines to create meaningful curriculum experiences; also included integration of technology and authentic or inquiry-based strategies for learning	work student work 3 3b	contextual structure II.4 II.4.a



51	<i>integrity</i>	shows integrity, fairness, honor, and respect; also was related to personal characteristics of honesty, courage, and principled decision-making	self character 1 1b	social character II.3 II.3.a
52	<i>interpersonal</i>	exhibits strong, positive interpersonal skills in understanding and working with students, peers and others in the learning community; is perceptive of and sensitive to the thoughts and feelings of others in a manner that fosters positive relationships and a conducive learning environment	others actions 2 2b	emotional interpersona I II.2 II.2.b
53	<i>intrapersonal</i>	able to look inside themselves, understand and reflect upon their own dispositions, perspectives and abilities and make positive internal adjustments in personal attitudes and approaches	self character 1 1b	cognitive thinking skills II.1 II.1.b
54	<i>leadership</i>	exhibits qualities of character that encourage students and the profession to move forward and improve, whether leading from the classroom or school level; is able to work successfully within group dynamics and educational processes; some insitutions mentioned particular areas of leadership such as curriculum reform or building partnerships with parents and community--these were primarily in reference to advanced programs	frame profession 4 4a	social leadership II.3 II.3.b
55	<i>learner-centered</i>	practice is focused on and designed according to the characteristics, needs and outcomes of students/learners	others beliefs 2 2a	contextual structure II.4 II.4.a
56	<i>liberal arts</i>	values the philosophy of a broad, well-rounded liberal arts approach to education	frame purpose 4 4b	cognitive knowledge II.1 II.1.a
57	<i>life-long learning</i>	believes in and participates in continuous learning experiences throughout the lifespan and instills this value in students	self knowledgeable 1 1a	cognitive knowledge II.1 II.1.a
58	<i>motivator</i>	understands the psychology of human motivation; uses engagement, empowerment, affiliation, high expectations, and other motivating factors to drive students to learn	others actions 2 2b	social leadership II.3 II.3.b
59	<i>multiple approaches</i>	understands and works effectively with varied learning styles or intelligences and diverse initial abilities, building on individual strengths and providing adaptive scaffolds for challenges; the code for multiple approches was used in reference to teaching, learning, and assessment	work student work 3 3b	contextual structure II.4 II.4.a
60	<i>open</i>	seeks and evaluates new ideas, open to other perspectives, reflective listener; respects collegial dialectic discussion as a means through which the profession refines itself and grows	self character 1 1b	emotional interpersona I II.2 II.2.b

61	<i>passion for learning</i>	exhibits sincere excitement for the subject matter, teaching, helping students learn, and their own continued growth and development	self character 1 1b	cognitive knowledge II.1 II.1.a
62	<i>pedagogy</i>	exhibits pedagogical skillfulness; understands characteristics of learners and developmental processes, effectively applies varied methods and strategies of teaching; can interactively and resourcefully help students learn; values continuing professional development in the art and science of teaching itself	work teacher work 3 3a	contextual structure II.4 II.4.a
63	<i>persistence</i>	persists in helping all students and resists giving up on any student, persists in the profession and in professional growth	work teacher work 3 3a	social character II.3 II.3.a
64	<i>personal well-being</i>	recognizes the importance of their own personal well-being; physically, cognitively, psychologically, socially and spiritually; to their ability to serve students and others	self character 1 1b	cognitive values II.1 II.2.a
65	<i>perspective</i>	understands their own perspectives and how they relate to perspectives in their students' environment, the profession, society, the world; is able to articulate an accurate account of perspectives that may be different than their own, why those perspectives may exist, and how differences in perspective may effect students and learning in their classrooms	others beliefs 2 2a	contextual philosophy II.4 II.4.b
66	<i>planning</i>	demonstrates a belief in the importance of proactive, collaborative and systematic planning, based in knowledge of students, formative evaluations, and reflective, professional judgement about curriculum and ongoing strategies to help students improve	work teacher work 3 3a	contextual structure II.4 II.4.a
67	<i>pluralistic</i>	multiple perspectives valued in all aspects of education	frame purpose 4 4b	emotional community II.2 II.4.b
68	<i>positives</i>	focuses on strengths and effort of students and positives in approaching teaching, not deficits; seeks solutions that avoid or overcome obstacles and build self-efficacy in students and peers	others actions 2 2b	social character II.3 II.3.a
69	<i>problem-solver</i>	uses a solution-oriented approach to improvement; can effectively identify or pose problems and use strategizing, inquiry and research to solve problems	self agency 1 1c	cognitive thinking skills II.1 II.1.b
70	<i>professional</i>	exhibits professional attitudes and behaviors; traits noted as professional included integrity, high standards of practice in both content and pedagogy, positive interpersonal skills, ethical behavior, reflective objectivity, and an attitude of caring, service and commitment to students and the profession of teaching	frame profession 4 4a	cognitive character II.1 II.3.a

71	<i>professionally grounded</i>	values the foundational history of teaching and learning research and practice, as well as the dialectic discussion and experimental practice that refines and builds the foundations of the profession; includes awareness of critical educational issues and knowing and incorporating professionally developed standards	frame profession 4 4a	cognitive knowledge II.1 II.1.a
72	<i>progressive</i>	recognizes teaching as an adaptive profession, responsive to new needs, experiences, research discoveries and contexts	frame purpose 4 4b	contextual philosophy II.4 II.4.b
73	<i>public education</i>	values free public education as a means of maintaining principles of freedom and opportunity for all individuals across society	frame purpose 4 4b	contextual philosophy II.4 II.4.b
74	<i>reasoned</i>	reasoned decision-maker and planner; considers information and empirical evidence objectively to validate judgements about curriculum, issues, strategies and other aspects of practice	self knowledgeable 1 1a	cognitive thinking skills II.1 II.1.b
75	<i>reflective</i>	exhibits the habit of thinking deeply about the characteristics of their students, dynamic elements of the learning environment, resources, their own beliefs and strategies, and observed outcomes; uses that reflection to constantly reinforce or revise their own practice to improve student learning	self character 1 1b	cognitive thinking skills II.1 II.1.b
76	<i>research</i>	values educational research, including action research, as a foundation and a means of improving practice; critically evaluates research findings and uses the best available to guide practice	work teacher work 3 3a	cognitive knowledge II.1 II.1.a
77	<i>resilient</i>	flexible, able to adapt to and cope with a variety of contexts and situations positively and effectively; think on their feet	self agency 1 1c	social character II.3 II.3.a
78	<i>resourceful</i>	able to find, use and adapt resources to meet the needs of students and improve the profession	self agency 1 1c	cognitive leadership II.1 II.3.b
79	<i>respect</i>	respects dignity, work, contributions of students, colleagues and others; creates a model of mutual respect in the classroom	others beliefs 2 2a	emotional interpersonal 1 II.2 II.2.b
80	<i>responsible</i>	takes responsibility for well-being of self, students, profession and larger community; can be relied upon; models responsible behavior in carrying out teaching duties; fosters responsibility in students	others actions 2 2b	social character II.3 II.3.a
81	<i>responsive</i>	is sensitive to teaching and learning needs; actively responds to the needs of students, educators and the larger community; is responsive to suggestions for improvement in	self agency 1 1c	cognitive interpersonal 1 II.1

		their own practice		II.2.b
82	<i>role model</i>	realizes and takes seriously their status as a positive role model to students and others in the profession	self character 1 1b	social leadership II.3 II.3.b
83	<i>safety</i>	works to assure a physically and emotionally safe environment in which students can learn	others actions 2 2b	social leadership II.3 II.3.b
84	<i>self-motivated</i>	takes independent action to learn and improve their knowledge and practice and respond to needs in the classroom	self character 1 1b	cognitive character II.1 II.3.a
85	<i>sensitivity</i>	approaches community and cultural norms with sensitivity to how these affect students and their learning, peers and their teaching, parents and their support; approaches learner challenges with sensitivity and positive strategies	others actions 2 2b	emotional values II.2 II.2.b
86	<i>service</i>	willingly gives service to profession, community, for betterment of others and instills the value of service to others in students	frame purpose 4 4b	emotional values II.2 II.2.a
87	<i>social justice</i>	recognizes the importance of education to democratic stability and social justice for all students and all people; works to raise social consciousness and advocate for the needs of students	frame purpose 4 4b	emotional values II.2 II.2.a
88	<i>stewardship</i>	sees their role as a steward who supports and nurtures positive, sustainable learning environments that give students and peers a context in which they can be successful across time; exhibits a reverence for sustaining the craft of teaching	frame profession 4 4a	emotional values II.2 II.2.a
89	<i>supportive</i>	actively supports students through changes to empower their learning; supports successful practice by others	others actions 2 2b	emotional values II.2 II.2.a
90	<i>synthesis</i>	exhibits ability to look across factors and resources and pull together information and strategies valuable to learning; connects theory and practice with a coherent approach	frame profession 4 4a	cognitive thinking skills II.1 II.1.b
91	<i>teacher/learner relationship</i>	understands the importance of positive teacher-student interpersonal interactions to learning, motivation and development of positive social skills	others actions 2 2b	emotional interpersonal 1 II.2 II.2.b
92	<i>technology</i>	recognizes the importance of technology in today's world and uses it appropriately and effectively to enhance teaching and learning	work teacher work 3 3a	contextual structure II.4 II.4.a

93	<i>thoughtful</i>	listens to, observes, and considers ideas, needs of others reflectively and responsively	others actions 2 2b	cognitive thinking skills II.1 II.1.b
94	<i>vision</i>	articulates and demonstrates a positive vision for the role of education in bettering the lot of individuals and society	frame profession 4 4a	contextual philosophy II.4 II.4.b
95	<i>work ethic</i>	demonstrates mature and responsible approach to work in professional appearance, poise, dependability, preparation, effort and persistence	self character 1 1b	social character II.3 II.3.a

## APPENDIX D

### DISPOSITION CODES IDENTIFIED IN THE TEXT OF THE INTASC PRINCIPLES

#### INTASC CORE PRINCIPLES

Council of Chief State School Officers  
Washington, DC (CCSSO, 1992)

#### DISPOSITION CODES

Identified in 2000-04  
sampled NCATE reports

***Principle #1: 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.***

#### *Knowledge*

- The teacher understands major concepts, assumptions, debates, processes of inquiry, and ways of knowing that are central to the discipline(s) s/he teaches.
- The teacher understands how students' conceptual frameworks and their misconceptions for an area of knowledge can influence their learning.
- The teacher can relate his/her disciplinary knowledge to other subject areas.

academic  
inquiry  
creative  
pedagogy  
authentic  
responsive

academic  
inquiry  
professionally grounded  
pedagogy  
perspective  
assessment  
  
interdisciplinary

#### *Dispositions*

- The teacher realizes that subject matter knowledge is not a fixed body of facts but is complex and ever-evolving. S/he seeks to keep abreast of new ideas and understandings in the field.
- The teacher appreciates multiple perspectives and conveys to learners how knowledge is developed from the vantage point of the knower.
- The teacher has enthusiasm for the discipline(s) s/he teaches and sees connections to everyday life.
- The teacher is committed to continuous learning and engages in professional discourse about subject matter knowledge and children's learning of the discipline.

academic  
current  
responsive

learner-centered  
perspective  
cognitive  
constructivist  
enthusiasm  
authentic  
  
commitment  
life-long learning  
professionally grounded  
collaborative  
academic  
pedagogy

#### *Performances*

- The teacher effectively uses multiple representations and explanations of disciplinary concepts that capture key ideas and link them to students' prior understandings.
- The teacher can represent and use differing viewpoints, theories,

multiple approaches  
cognitive  
learner-centered  
pedagogy  
diversity

"ways of knowing" and methods of inquiry in his/her teaching of subject matter concepts.

- The teacher can evaluate teaching resources and curriculum materials for their comprehensiveness, accuracy, and usefulness for representing particular ideas and concepts.
- The teacher engages students in generating knowledge and testing hypotheses according to the methods of inquiry and standards of evidence used in the discipline.
- The teacher develops and uses curricula that encourage students to see, question, and interpret ideas from diverse perspectives.
- The teacher can create interdisciplinary learning experiences that allow students to integrate knowledge, skills, and methods of inquiry from several subject areas.

***Principle #2: The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.***

***Knowledge***

- The teacher understands how learning occurs--how students construct knowledge, acquire skills, and develop habits of mind--and knows how to use instructional strategies that promote student learning.
- The teacher understands that students' physical, social, emotional, moral and cognitive development influence learning and knows how to address these factors when making instructional decisions.
- The teacher is aware of expected developmental progressions and ranges of individual variation within each domain (physical, social, emotional, moral and cognitive), can identify levels of readiness in learning, and understands how development in any one domain may affect performance in others.

***Dispositions***

- The teacher appreciates individual variation within each area of development, shows respect for the diverse talents of all learners, and is committed to help them develop self-confidence and competence.

perspective  
accommodating  
inquiry  
analytical  
academic  
professionally grounded  
research  
engaging  
active learning  
inquiry  
reasoned  
facilitator/guide  
critical thinking  
diversity  
perspective  
reflective  
interdisciplinary  
pedagogy  
inquiry  
professionally grounded  
cognitive  
developmental  
pedagogy  
interpersonal

cognitive  
constructivist  
pedagogy  
learner-centered

learner-centered  
developmental  
interpersonal  
ethical  
cognitive  
complexity  
pedagogy

developmental  
professionally grounded  
assessment  
multiple approaches  
reflective  
teacher-learner relationship

accommodating  
developmental  
respect  
diversity  
commitment  
empowerment  
supportive  
high expectations

- The teacher is disposed to use students' strengths as a basis for growth, and their errors as an opportunity for learning.

positives  
assessment

*Performances*

- The teacher assesses individual and group performance in order to design instruction that meets learners' current needs in each domain (cognitive, social, emotional, moral, and physical) and that leads to the next level of development. assessment
- The teacher stimulates student reflection on prior knowledge and links new ideas to already familiar ideas, making connections to students' experiences, providing opportunities for active engagement, manipulation, and testing of ideas and materials, and encouraging students to assume responsibility for shaping their learning tasks.
- The teacher accesses students' thinking and experiences as a basis for instructional activities by, for example, encouraging discussion, listening and responding to group interaction, and eliciting samples of student thinking orally and in writing.

assessment  
developmental  
learner-centered  
complexity

motivator  
facilitator/guide  
reflective  
constructivist  
active learning  
engaging  
inquiry  
critical thinking  
empowerment

learner-centered  
cognitive  
communication  
engaging  
reflective  
assessment

***Principle #3: The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.***

learner-centered  
multiple approaches  
creative  
pedagogy  
diversity

*Knowledge*

- The teacher understands and can identify differences in approaches to learning and performance, including different learning styles, multiple intelligences, and performance modes, and can design instruction that helps use students' strengths as the basis for growth.
- The teacher knows about areas of exceptionality in learning—including learning disabilities, visual and perceptual difficulties, and special physical or mental challenges.
- The teacher knows about the process of second language acquisition and about strategies to support the learning of students whose first language is not English.
- The teacher understands how students' learning is influenced by individual experiences, talents, and prior learning, as well as language, culture, family and community values.
- The teacher has a well-grounded framework for understanding cultural and community diversity and knows how to learn about and incorporate students' experiences, cultures, and community resources into instruction.

assessment  
multiple approaches  
reflective  
responsive  
pedagogy  
positives

diversity  
accommodating  
adaptive

diversity  
accommodating  
adaptive  
responsive  
pedagogy

complexity

culture  
community  
diversity  
responsive  
resourceful  
pedagogy



*Dispositions*

- The teacher believes that all children can learn at high levels and persists in helping all children achieve success.
- The teacher appreciates and values human diversity, shows respect for students' varied talents and perspectives, and is committed to the pursuit of "individually configured excellence."
- The teacher respects students as individuals with differing personal and family backgrounds and various skills, talents, and interests.
- The teacher is sensitive to community and cultural norms.
- The teacher makes students feel valued for their potential as people, and helps them learn to value each other.

all students  
 high expectations  
 persistent  
 learner-centered  
 supportive  
 empowerment  
 diversity  
 respect  
 multiple approaches  
 commitment  
 high expectations  
 respect  
 diversity  
 multiple approaches  
 positives  
 sensitivity  
 community  
 culture  
 respect  
 empowerment  
 role model  
 humanistic  
 positives

*Performances*

- The teacher identifies and designs instruction appropriate to students' stages of development, learning styles, strengths, and needs.
- The teacher uses teaching approaches that are sensitive to the multiple experiences of learners and that address different learning and performance modes.
- The teacher makes appropriate provisions (in terms of time and circumstances for work, tasks assigned, communication and response modes) for individual students who have particular learning differences or needs.
- The teacher can identify when and how to access appropriate services or resources to meet exceptional learning needs.
- The teacher seeks to understand students' families, cultures, and communities, and uses this information as a basis for connecting instruction to students' experiences (e.g. drawing explicit connections between subject matter and community matters, making assignments that can be related to students' experiences and cultures).
- The teacher brings multiple perspectives to the discussion of subject matter, including attention to students' personal, family, and community experiences and cultural norms.
- The teacher creates a learning community in which individual

learner-centered  
 developmental  
 multiple approaches  
 pedagogy  
 positives  
 sensitivity  
 accommodating  
 multiple approaches  
 accommodating  
 assessment  
 collaborative  
 resourceful  
 culture  
 community  
 responsive  
 perspective  
 multiple approaches  
 community  
 culture  
 collaborative

differences are respected.

**Principle #4: The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.**

#### *Knowledge*

- The teacher understands the cognitive processes associated with various kinds of learning (e.g. critical and creative thinking, problem structuring and problem solving, invention, memorization and recall) and how these processes can be stimulated.
- The teacher understands principles and techniques, along with advantages and limitations, associated with various instructional strategies (e.g. cooperative learning, direct instruction, discovery learning, whole group discussion, independent study, interdisciplinary instruction).
- The teacher knows how to enhance learning through the use of a wide variety of materials as well as human and technological resources (e.g. computers, audio-visual technologies, videotapes and discs, local experts, primary documents and artifacts, texts, reference books, literature, and other print resources).

#### *Dispositions*

- **The teacher values the development of students' critical thinking, independent problem solving, and performance capabilities.**
- **The teacher values flexibility and reciprocity in the teaching process as necessary for adapting instruction to student responses, ideas, and needs.**

#### *Performances*

- The teacher carefully evaluates how to achieve learning goals, choosing alternative teaching strategies and materials to achieve different instructional purposes and to meet student needs (e.g. developmental stages, prior knowledge, learning styles, and interests).
- The teacher uses multiple teaching and learning strategies to engage students in active learning opportunities that promote the development of critical thinking, problem solving, and performance capabilities and that help student assume responsibility for identifying and using learning resources.

community  
dignity  
respect  
diversity  
multiple approaches  
pedagogy  
critical thinking  
problem-solver  
academic  
authentic

cognitive  
critical thinking  
creative  
problem-solver  
innovative  
academic  
pedagogy  
pedagogy  
multiple approaches  
interpersonal  
active learning  
interdisciplinary

pedagogy  
resourceful  
collaborative  
technology

developmental  
critical thinking  
problem-solver  
authentic  
responsive  
adaptive  
learner-centered

assessment  
alignment  
multiple approaches  
learner-centered  
developmental  
cognitive  
engaging  
multiple approaches  
engaging  
active learning  
critical thinking  
problem-solver  
empowerment  
responsible  
resourceful

- The teacher constantly monitors and adjusts strategies in response to learner feedback.
- The teacher varies his or her role in the instructional process (e.g. instructor, facilitator, coach, audience) in relation to the content and purposes of instruction and the needs of students.
- The teacher develops a variety of clear, accurate presentations and representations of concepts, using alternative explanations to assist students' understanding and presenting diverse perspectives to encourage critical thinking.

***Principle #5: 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.***

***Knowledge***

- The teacher can use knowledge about human motivation and behavior drawn from the foundational sciences of psychology, anthropology, and sociology to develop strategies for organizing and supporting individual and group work.
- The teacher understands how social groups function and influence people, and how people influence groups.
- The teacher knows how to help people work productively and cooperatively with each other in complex social settings.
- The teacher understands the principles of effective classroom management and can use a range of strategies to promote positive relationships, cooperation, and purposeful learning in the classroom.
- The teacher recognizes factors and situations that are likely to promote or diminish intrinsic motivation, and knows how to help students become self-motivated.

***Dispositions***

- The teacher takes responsibility for establishing a positive climate in the classroom and participates in maintaining such a climate in the school as whole.
- The teacher understands how participation supports commitment, and is committed to the expression and use of democratic values in the classroom.
- The teacher values the role of students in promoting each

assessment  
 reflective  
 responsive  
 learner-centered  
 facilitator/guide  
 responsive  
 academic  
 pedagogy  
 learner-centered  
 interpersonal  
 pedagogy  
 planning  
 communication  
 multiple approaches  
 diversity  
 perspective  
 critical thinking  
 motivator  
 engaging  
 positives  
 active learning  
 empowerment

motivator  
 professionally grounded  
 planning  
 multiple approaches  
 pedagogy  
 interpersonal  
 leadership  
 collaborative  
 complexity  
 reflective  
 interpersonal  
 positives  
 collaborative  
 responsive  
 self-motivated  
 motivator  
 empowerment

responsible  
 positives  
 collaborative  
 community  
 initiative  
 engaging  
 commitment  
 democratic  
 collaborative

other's learning and recognizes the importance of peer relationships in establishing a climate of learning.

- The teacher recognizes the value of intrinsic motivation to students' life-long growth and learning.
- The teacher is committed to the continuous development of individual students' abilities and considers how different motivational strategies are likely to encourage this development for each student.

*Performances*

- The teacher creates a smoothly functioning learning community in which students assume responsibility for themselves and one another, participate in decision-making, work collaboratively and independently, and engage in purposeful learning activities.
- The teacher engages students in individual and cooperative learning activities that help them develop the motivation to achieve, by, for example, relating lessons to students' personal interests, allowing students to have choices in their learning, and leading students to ask questions and pursue problems that are meaningful to them.
- The teacher organizes, allocates, and manages the resources of time, space, activities, and attention to provide active and equitable engagement of students in productive tasks.
- The teacher maximizes the amount of class time spent in learning by creating expectations and processes for communication and behavior along with a physical setting conducive to classroom goals.
- The teacher helps the group to develop shared values and expectations for student interactions, academic discussions, and individual and group responsibility that create a positive classroom climate of openness, mutual respect, support, and inquiry.
- The teacher analyzes the classroom environment and makes decisions and adjustments to enhance social relationships, student motivation and engagement, and productive work.
- The teacher organizes, prepares students for, and monitors independent and group work that allows for full and varied participation of all individuals.

interpersonal

self-motivated  
life-long learning  
empowerment

developmental  
all students  
reflective  
motivator  
engaging

planning  
responsible  
engaging  
reasoned  
collaborative

engaging  
motivator  
perspective  
reflective  
self-motivator  
inquiry  
authentic

planning  
resourceful  
active learning  
equity  
engaging

planning

facilitator/guide  
collaborative  
responsible  
positives  
respect  
supportive  
inquiry

assessment  
reflective  
reasoned  
interpersonal  
teacher/student relationship  
motivator  
engaging

planning  
assessment  
multiple approaches  
engaging  
all students

**Principle #6: The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaborative, and supportive interaction in the classroom.**

*Knowledge*

- The teacher understands communication theory, language development, and the role of language in learning.
- The teacher understands how cultural and gender differences can affect communication in the classroom.
- The teacher recognizes the importance of nonverbal as well as verbal communication.
- The teacher knows about and can use effective verbal, nonverbal, and media communication techniques.

*Dispositions*

- **The teacher recognizes the power of language for fostering self-expression, identity development, and learning.**
- **The teacher values many ways in which people seek to communicate and encourages many modes of communication in the classroom.**
- **The teacher is a thoughtful and responsive listener.**
- **The teacher appreciates the cultural dimensions of communication, responds appropriately, and seeks to foster culturally sensitive communication by and among all students in the class.**

*Performances*

- The teacher models effective communication strategies in conveying ideas and information and in asking questions (e.g. monitoring the effects of messages, restating ideas and drawing connections, using visual, aural, and kinesthetic cues, being sensitive to nonverbal cues given and received).
- The teacher supports and expands learner expression in speaking, writing, and other media.
- The teacher knows how to ask questions and stimulate discussion in different ways for particular purposes, for example, probing for learner understanding, helping students articulate their ideas and thinking processes, promoting risk-taking and problem-solving, facilitating factual recall, encouraging convergent and divergent thinking, stimulating curiosity, helping students to question.
- The teacher communicates in ways that demonstrate a sensitivity to cultural and gender differences (e.g. appropriate use of eye contact, interpretation of body language and verbal statements, acknowledgment of and responsiveness to different modes of communication and participation).
- The teacher knows how to use a variety of media communication tools, including audio-visual aids and computers, to enrich learning opportunities.

communication  
active learning  
inquiry  
collaborative  
supportive

communication  
cognitive  
communication  
culture  
diversity  
interpersonal  
communication  
communication  
technology

communication  
empowerment  
developmental

multiple approaches  
communication

thoughtful  
responsive

culture  
communication  
sensitivity  
all students

communication  
interpersonal  
inquiry  
sensitivity  
assessment

communication

pedagogy  
engaging  
inquiry  
empowerment  
problem-solver  
cognitive  
curious

communication  
sensitivity  
culture  
diversity  
responsive

communication  
technology

*Principle #7: The teacher plans instruction based upon knowledge of subject matter, students, the community, and curriculum goals.*

planning  
academic  
pedagogy  
community  
professionally grounded

*Knowledge*

- The teacher understands learning theory, subject matter, curriculum development, and student development and knows how to use this knowledge in planning instruction to meet curriculum goals.
- The teacher knows how to take contextual considerations (instructional materials, individual student interests, needs, and aptitudes, and community resources) into account in planning instruction that creates an effective bridge between curriculum goals and students' experiences.
- The teacher knows when and how to adjust plans based on student responses and other contingencies.

cognitive  
academic  
professionally grounded  
developmental  
pedagogy  
responsive  
complexity  
contextual  
planning  
assessment  
responsive

*Dispositions*

- **The teacher values both long term and short term planning.**
- **The teacher believes that plans must always be open to adjustment and revision based on student needs and changing circumstances.**
- **The teacher values planning as a collegial activity.**

planning  
reflective  
responsive  
open  
learner-centered  
complexity  
planning  
collegial

*Performances*

- As an individual and a member of a team, the teacher selects and creates learning experiences that are appropriate for curriculum goals, relevant to learners, and based upon principles of effective instruction (e.g. that activate students' prior knowledge, anticipate preconceptions, encourage exploration and problem-solving, and build new skills on those previously acquired).
- The teacher plans for learning opportunities that recognize and address variation in learning styles and performance modes.
- The teacher creates lessons and activities that operate at multiple levels to meet the developmental and individual needs of diverse learners and help each progress.
- The teacher creates short-range and long-term plans that are

collaborative  
planning  
creative  
professionally grounded  
developmental  
engaging  
cognitive  
inquiry  
curious  
problem-solver  
constructivist  
planning  
multiple approaches  
pedagogy  
creative  
multiple approaches  
developmental  
diversity  
all students  
supportive  
planning

linked to student needs and performance, and adapts the plans to ensure and capitalize on student progress and motivation.

- The teacher responds to unanticipated sources of input, evaluates plans in relation to short- and long-range goals, and systematically adjusts plans to meet student needs and enhance learning.

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

*Knowledge*

- The teacher understands the characteristics, uses, advantages, and limitations of different types of assessments (e.g. criterion-referenced and norm-referenced instruments, traditional standardized and performance-based tests, observation systems, and assessments of student work) for evaluating how students learn, what they know and are able to do, and what kinds of experiences will support their further growth and development.
- The teacher knows how to select, construct, and use assessment strategies and instruments appropriate to the learning outcomes being evaluated and to other diagnostic purposes.
- The teacher understands measurement theory and assessment-related issues, such as validity, reliability, bias, and scoring concerns.

*Dispositions*

- **The teacher values ongoing assessment as essential to the instructional process and recognizes that many different assessment strategies, accurately and systematically used, are necessary for monitoring and promoting student learning.**
- **The teacher is committed to using assessment to identify student strengths and promote student growth rather than to deny students access to learning opportunities.**

*Performances*

- The teacher appropriately uses a variety of formal and informal assessment techniques (e.g. observation, portfolios of student work, teacher-made tests, performance tasks, projects, student self-assessments, peer assessment, and standardized tests) to enhance her or his knowledge of learners, evaluate students' progress and performances, and modify teaching and learning strategies.
- The teacher solicits and uses information about students' experiences, learning behavior, needs, and progress from parents, other colleagues, and the students themselves.
- The teacher uses assessment strategies to involve learners in self-

learner-centered  
assessment  
reflective  
accommodating  
positives  
motivator  
resilient  
planning  
reflective  
adaptive  
synthesis  
assessment  
reflective  
developmental  
learner-centered

assessment  
multiple approaches  
cognitive  
developmental  
analytical  
reflective

assessment  
analytical  
learner-centered  
professionally grounded  
assessment  
research  
professionally grounded

assessment  
multiple approaches  
learner-centered

assessment  
positives  
developmental  
empowerment

assessment  
multiple approaches  
learner-centered  
reflective  
adaptive  
pedagogy

assessment  
collaborative  
complexity  
assessment

assessment activities, to help them become aware of their strengths and needs, and to encourage them to set personal goals for learning.

- The teacher evaluates the effect of class activities on both individuals and the class as a whole, collecting information through observation of classroom interactions, questioning, and analysis of student work.
- The teacher monitors his or her own teaching strategies and behavior in relation to student success, modifying plans and instructional approaches accordingly.
- The teacher maintains useful records of student work and performance and can communicate student progress knowledgeably and responsibly, based on appropriate indicators, to students, parents, and other colleagues.

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

*Knowledge*

- The teacher understands methods of inquiry that provide him/her with a variety of self- assessment and problem-solving strategies for reflecting on his/her practice, its influences on students' growth and learning, and the complex interactions between them.
- The teacher is aware of major areas of research on teaching and of resources available for professional learning (e.g. professional literature, colleagues, professional associations, professional development activities).

*Dispositions*

- **The teacher values critical thinking and self-directed learning as habits of mind.**
- **The teacher is committed to reflection, assessment, and learning as an ongoing process.**
- **The teacher is willing to give and receive help.**
- **The teacher is committed to seeking out, developing, and continually refining practices that address the individual needs of students.**

engaging  
self-motivated  
reflective

assessment  
reflective  
multiple approaches

assessment  
reflective  
adaptive  
planning  
pedagogy  
learner-centered

assessment  
communication  
professional

reflective  
professional  
interpersonal  
intrapersonal  
life-long learning  
learner-centered  
community  
collaborative

intrapersonal  
problem-solver  
reflective  
learner-centered  
complexity  
teacher/student relationship  
professionally grounded  
collaborative  
professional  
research  
academic  
pedagogy  
life-long learning

critical thinking  
cognitive  
self-motivated

reflective  
assessment  
life-long learning

collaborative  
supportive  
open

commitment  
resourceful  
initiative



- **The teacher recognizes his/her professional responsibility for engaging in and supporting appropriate professional practices for self and colleagues.**

reflective  
 adaptive  
 learner-centered  
 professional  
 responsible  
 engaging  
 supportive  
 collaborative  
 ethical

**Performances**

- The teacher uses classroom observation, information about students, and research as sources for evaluating the outcomes of teaching and learning and as a basis for experimenting with, reflecting on, and revising practice.
- The teacher seeks out professional literature, colleagues, and other resources to support his/her own development as a learner and a teacher.
- The teacher draws upon professional colleagues within the school and other professional arenas as supports for reflection, problem-solving and new ideas, actively sharing experiences and seeking and giving feedback.

assessment  
 research  
 inquiry  
 reflective  
 adaptive  
 responsive  
 professionally grounded  
 professional  
 collaborative  
 life-long learning  
 open  
 initiative  
 professional  
 collaborative  
 reflective  
 problem-solver  
 open  
 innovative  
 reflective  
 community  
 collaborative  
 supportive  
 learner-centered

***Principle #10: The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.***

**Knowledge**

- The teacher understands schools as organizations within the larger community context and understands the operations of the relevant aspects of the system(s) within which s/he works.
- The teacher understands how factors in the students' environment outside of school (e.g. family circumstances, community environments, health and economic conditions) may influence students' life and learning.
- The teacher understands and implements laws related to students' rights and teacher responsibilities (e.g. for equal education, appropriate education for handicapped students, confidentiality, privacy, appropriate treatment of students, reporting in situations related to possible child abuse).

community  
 contextual  
 complexity  
 complexity  
 equity  
 diversity  
 confidentiality  
 professional  
 ethics  
 safety

**Dispositions**

- **The teacher values and appreciates the importance of all aspects of a child's experience.**

complexity  
 respect

- The teacher is concerned about all aspects of a child's well-being (cognitive, emotional, social, and physical), and is alert to signs of difficulties.
- The teacher is willing to consult with other adults regarding the education and well-being of his/her students.
- The teacher respects the privacy of students and confidentiality of information.
- The teacher is willing to work with other professionals to improve the overall learning environment for students.

caring  
assessment  
safety  
developmental

collaborative

confidentiality  
respect  
professional

collaborative  
complexity

*Performances*

- The teacher participates in collegial activities designed to make the entire school a productive learning environment.
- The teacher makes links with the learners' other environments on behalf of students, by consulting with parents, counselors, teachers of other classes and activities within the schools, and professionals in other community agencies.
- The teacher can identify and use community resources to foster student learning.
- The teacher establishes respectful and productive relationships with parents and guardians from diverse home and community situations, and seeks to develop cooperative partnerships in support of student learning and well being.
- The teacher talks with and listens to the student, is sensitive and responsive to clues of distress, investigates situations, and seeks outside help as needed and appropriate to remedy problems.
- The teacher acts as an advocate for students.

collegial  
improvement

complexity  
collaborative  
learner-centered

resourceful  
learner-centered

respect  
collaborative  
community  
learner-centered

thoughtful  
sensitivity  
collaborative  
problem-solver  
initiative  
advocacy

advocacy

## APPENDIX E

### BIBLIOGRAPHY SCANNED FROM THE INSTITUTIONAL REPORTS

Note: Citations were included in two-thirds of the Institutional Reports reviewed in this study; many were complete references, others in-text citations with author and year only. These references were gleaned from the Conceptual Frameworks and Standard I disposition sections of the Institutional Reports, so represent both foundational information for the Conceptual Frameworks and for identified teacher dispositions. The references are presented in table format exactly as they appeared in the reports, whether complete or incomplete, so as not to draw any assumptions about the full citations.

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