Conceptions of Beginning Teacher Quality: Models for Conducting Research

Prepared for the Center on Personnel Studies in Special Education

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COPSSE research is focused on the preparation of special education professionals and its impact on beginning teacher quality and student outcomes. Our research is intended to inform scholars and policymakers about advantages and disadvantages of preparation alternatives and the effective use of public funds in addressing personnel shortages.

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CONTENTS

ABSTRACT

Defining teacher quality is no easy task. Reaching consensus on a definition, even among teacher educators and researchers, has proved elusive. Efforts to define teacher quality in special education are further complicated by the variety of roles special educators play in schools and by the diversity of the children they serve. Nonetheless, teacher education researchers need clear models to guide the development of dependent measures for their work. In this paper, we consider traditions of research on teaching and how conceptions of good teaching evolved as traditions changed. We present various models for understanding teacher quality in special education and analyze their conceptual richness and technical soundness for use in research. The models are evaluated in terms of their usefulness for addressing research questions within the five genres for studying teacher education identified by Kennedy (1991).

INTRODUCTION

Research increasingly shows that teacher quality is the essential factor in student learning (Darling-Hammond, 1999; Wenglinsky, 2000). On the surface, this fact may seem useful when making decisions about how to improve schools and student learning. Unfortunately, the term *teacher quality* means different things to different groups (e.g., legislators, parents, teacher educators, researchers). The term even carries different meanings within these groups. For example, educators in general education and special education have a history of approaching teacher quality differently. In recent years, however, the work of the two groups has begun to intersect, creating potential for the fields to consider teacher quality in similar ways. This paper reviews the trajectory of general and special teacher education conceptions of teacher quality and uses this context to present models for understanding teacher quality in special education. Further, the discussion critiques the appropriateness of the models for conducting research in special education teacher quality. Finally, the paper reviews teacher quality as it relates to specific populations in special education. The summary provides recommendations for future research on teacher quality in special education.

METHODOLOGY: RELEVANT LITERATURE

For this research synthesis, a number of strategies were used to locate relevant literature through electronic databases (predominantly ERIC and PsychINFO) for studies and policy papers published since 1990. As a first strategy, we cross-referenced possible major and minor descriptor terms with the ERIC Thesaurus to determine the most specific descriptor terms possible. Our initial terms and the approximate number of abstracts identified were *teacher effectiveness* (20,000), *teacher competencies* (12,000), and *teacher evaluation* (260). Some obvious terms (e.g., *teacher quality* and *teacher effectiveness*) were not listed as keywords in the ERIC Thesaurus.

Second, we conducted searches to reduce the number of possible abstracts by using descriptors. combinations of the following descriptors: *teacher effectiveness, teacher competencies, teacher evaluation,* and *teacher collaboration* with *educational quality, teacher improvement, knowledge base for teaching, teaching skills, teacher competency testing, teacher education, special education, general education,* and *teamwork*. Because of the volume of documents, general searches were limited to 1990-2001. Publications within this period provided the most current information on teacher quality and information for ancestral searches. Additional electronic database searches were done with these keywords: *Praxis II, TIES, COKER*, *Observations adj keyed*, and *CARF*.

Third, web site searches were conducted for: The Council for Exceptional Children (CEC), Interstate New Teacher Assessment and Support Consortium (INTASC), The National Board for Professional Teaching Standards (NBPTS), The National Center for Education Statistics (NCES), The Study of Personnel Needs in Special Education (SPeNSE), Teachers of English to Speakers of Other Languages (TESOL), The National Commission on Teaching and America's Future (NCTAF), and various university-related sites.

THE LANDSCAPE OF TEACHER QUALITY IN GENERAL AND SPECIAL EDUCATION

Everyone has heard anecdotes about great teachers and their impact. Although such descriptions have a long, rich history, the history of researching teaching and qualities that produce great teachers is relatively short. Early studies of teachers and the factors accounting for quality in teaching were conducted in the 1940s, 1950s, and into the 1960s when most researchers focused on personal characteristics and experience variables (e.g., verbal ability, warmth, intelligence, educational background, and knowledge of subject) (Cochran-Smith, 2001; Shulman, 1986). Although a few such variables have continued to be discussed in the literature as connected empirically to teacher quality, this line of research diminished in the mid-1960s, giving way to new approaches to the study of teachers and their teaching.

The 1960s and 1970s could be considered boom years for research on teaching when many researchers concentrated on the search for specific teacher actions that would connect directly to student learning (Cochran-Smith & Lytle, 1990; Shulman, 1986). This *process-product* line of research on teaching, which was based on behavioral psychology and child development, focused on breaking complex tasks into easily identified parts (Berliner, 1989; Shulman, 1986). The findings of this research tradition and variations continue to influence teaching and teacher education today. For example, effective teachers were found to: (a) teach classroom rules and monitor their expectations, (b) provide clear explanations and ample instructional time, (c) maximize the opportunity for students to respond during instruction and seatwork, (d) use a brisk pace to present lessons and present new material in small steps, and (e) provide regular feedback (Berliner, 1984; Christenson, Ysseldyke, & Thurlow, 1989; Englert, Tarrant, & Mariage, 1992; Good, 1979; Medley, 1978; Rosenshine, 1986; Shulman, 1986).

The findings of process-product studies greatly influenced school reform agendas during this period. The language of *effective teaching* and *effective schools* was peppered with such terminology as *time on task* and *brisk-paced lessons.* Even at state levels, large-scale programs that included evaluations of teachers on effective teaching components (e.g., time on task) were implemented. The use of teaching research to influence reform agendas, although positive in some ways, greatly concerned many educators because of what was seen as an over-simplification of research findings and a failure to dig more deeply into the meaning of the findings (Doyle, 1983; Shulman, 1986). The findings were often reduced to short statements for teacher evaluation instruments to be administered by school principals who may not have understood the research basis for the practices being evaluated.

The growing knowledge base on effective teaching and concerns over the use of process-product findings expanded research into the complexities of teaching, classrooms, and schools (Berliner, 1989; Doyle, 1983). Referred to by several terms—*learning-to-teach research, classroom ecology research*, and *interpretive research*—this large, varied program of research focused on understanding the complexities of teachers' actions and interactions with students and contexts (Cochran-Smith & Lytle, 1990; Kagan, 1992; Kagan, 1988; Wideen, Mayer-Smith, & Moon, 1998). In contrast to process-product research, these lines of research are grounded in cognitive psychology and represented by a diversified array of approaches to the study of teaching (Berliner, 1989). During the 1970s, 1980s, and into the 1990s, the literature grew rich with research on teacher planning/decision-making (Borko & Niles, 1987; Reynolds, 1992;

Shavelson, 1983), teacher thinking (Carter, 1990; Reynolds, 1992), teacher beliefs (Pajares, 1992; Richardson, 1996; Wideen et al., 1998), and novice versus expert teaching (Berliner, 1986; Leinhardt, 1983; Reynolds, 1992), among other topics.

During this period, research on teacher knowledge of subject matter and of teaching and learning expanded (Darling-Hammond, 1999; Kennedy, 1996). Research focused on learning how to teach a discipline (e.g., reading or math vs. generic teaching), application of cognitive science, and use of cooperative groups or socially mediated instruction, to name a few.

Similar to process-product research and accompanying reform agendas earlier, these expanded lines of research influenced school reform and subsequent practices. The 1970s and 1980s brought a new wave of school reform that focused on concepts as *teacher empowerment* and *site-based management* (Firestone & Bader, 1991; Rowan, 1990). The strength and influence of this wave even led to great debates about the worth of process-product research findings (Gage & Needels, 1989; Nuthall & Alton-Lee, 1990).

Even as research on teaching accumulated and the field gained greater insights into teacher quality, growing dissatisfaction with schools and teachers by policymakers and the public led to a third wave of research and school reform. Much of this dissatisfaction grew from evidence that federal programs and reform efforts made little difference in the achievement gaps between poor ethnic minority groups and wealthier students. Led by *A Nation at Risk* (Gardner, Larsen, Baker, Campbell, Crosby, Foster, Jr., et al., 1983) and ending with *What Matters Most: Teaching for America's Future* (Report of the National Commission on Teaching and America's Future [NCTAF], 1996), reform reports focused on higher standards for schools, teachers, and teacher education.

The standards focus of the 1980s and 1990s, which sought to professionalize the field, resulted in: (a) major revision of the standards used by the National Council for the Accreditation of Teacher Education (NCATE); (b) national standards for beginning teaching (INTASC); and (c) national standards for accomplished teaching (NBPTS) (Darling-Hammond & Cobb, 1996). At issue was strengthening the major quality control mechanisms for the profession: accreditation, licensure, advanced certification. Like other professions (e.g., medicine), it was assumed that stronger quality control mechanisms would assure better quality teachers.

Currently, accountability and performance standards dominate the teacher quality agenda. Standards are being revised (e.g., NCATE, 2000) to focus on *outputs*—holding institutions accountable for providing data to show that their teacher candidates can do what the institution claims they can do—rather than *inputs*—specifying which courses teacher candidates take, and other similar expectations. Even federal requirements (i.e., Title II) are in place to collect data from states on the quality of candidates exiting teacher education programs and entering the teaching profession.

Teacher Education Research and Reform

Each phase of research on teaching and school reform has been accompanied by calls for change and reform in teacher education (Zeichner, 1999). The process-product era contributed to the pressure on teacher educators to teach components found effective in the literature and being used to evaluate teachers. Competencies and competency-based approaches dominated state

guidelines for licensure and offerings in teacher preparation. Similarly, the outcomes of the research grounded in cognitive psychology resulted in a focus on such components as content knowledge and specialized content pedagogy. Most recently, standards-based reform has held colleges, schools, and departments of education accountable to show with data that their candidates can do what the unit promises.

Like teaching, the process of teacher education has a research base. Research findings support the approaches used to prepare a quality teacher to enter the classroom (Humphrey, Adelman, Esch, Riehl, Shields, & Tiffany, 2000; Kagan, 1992; Kennedy, 1996; Putnam & Borko, 2000; Wilson, Floden, & Ferrini-Mundy, 2001; Yarger & Smith, 1990). For example, we know that field experiences are an important component of a teacher education program (Putnam & Borko). Most importantly, research evidence is growing that teachers who are fully prepared in university teacher education programs and fully licensed by the state are more successful with students than teachers who enter the profession via other pathways (Darling-Hammond & Cobb, 1996).

The Intersection of Special Education and General Education

To what extent has special education been part of the research programs on teaching? To what extent has general education drawn on the research programs in special education? How near or far are the fields of special education and general education in their conceptions of and approaches to teacher quality? Although the answers to these questions are not simple, a review of literature and current practice reveals that the distances between the fields have narrowed in recent years.

When research programs on teaching were flourishing in the general education community in the 1960s, 1970s, and 1980s, special educators were consumed with advocating and assuring the rights of students with disabilities. Research in special education focused on identifying specialized methods for teaching students with disabilities and exploring the efficacy of different settings for students with disabilities. Focus on specialized methods occurred within groups affiliated with different disability categories, often following different research and teacher education paths. With a focus on categories (e.g., learning disabilities, mental retardation, severe disabilities), special educators often worked (and still work) in independent communities where the work of one group seldom influences the work of another. The disconnectedness within special education added to the overall disconnection from general education—a field with very different research goals. Although several initiatives in the 1970s and 1980s encouraged connections between special and general education (e.g., federally funded initiatives such as Dean's Grants), differences in research goals persisted.

Given the different paths that general and special education followed, it is apparent why their dominant research programs were slow to influence each other. As process-product research gained momentum in the general education community, some special education researchers drew on this research program to conduct similar studies in special education (Englert, 1983; Englert, 1984a, 1984b; Englert & Thomas, 1982; Gersten & Woodward, 1990; Morsink, Soar, Soar, & Thomas, 1986; Rieth & Evertson, 1988; Sindelar, Smith, Harriman, Hale, & Wilson, 1986). The results of these studies and special education's research base on learning and instruction built a powerful case for the value of the direct instruction approach for students in high-incidence categories (e.g., learning disabilities).

In addition to process-product research, special education researchers borrowed from other research traditions (e.g., Brantlinger, 1996; Fuchs, Fuchs, & Bishop, 1992; Nowacek & Blanton, 1996) in similar ways. This line of inquiry has not produced findings as consistent as results following the process-product program. Although special education has been influenced by both process-product research and other broad programs of inquiry, researchers have conducted far fewer special education studies and only after the programs were well underway in general education.

As explorations of teacher quality shifted to an accountability/standards focus, it was apparent that the standards in special education and general education differed greatly. Standards developed by national groups for beginning teachers (INTASC) and for advanced teacher certification (NBPTS) were broadly stated and driven by principles. Standards in special education (Council for Exceptional Children [CEC], 1998) were lengthy listings of knowledge and skills, including sets of knowledge and skills for the various categories (e.g., learning disabilities) in the field.

The move to address teacher quality by focusing on standards was part of general education's wake-up-call that **all** teachers are responsible for teaching **all** students, including students with disabilities. For example, NCATE's 1983 revised standards required all teacher education programs to include content on teaching students with disabilities. In addition to existing federal requirements (e.g., PL 94-142) to teach students with disabilities in the least restrictive environment, such changes in standards made it clear that general educators needed to draw on the special education knowledge base. Like special educators, general educators had rarely used special education research and practice to inform their own research and practice.

Recent revisions of national teaching and teacher education standards have highlighted how the fields of general and special education have begun to intersect. In addition to NCATE, other national standards (INTASC and NBPTS) make it clear that **all** teachers are responsible for **all** students in their classrooms, including those with disabilities. Likewise, special education's national standards have been revised (CEC, 2001) to place greater emphasis on the need to know the knowledge base in general education (e.g., possess knowledge of content areas similar to that of general educators). It is debatable whether these standards are put into practice at the level intended. For example, general education's use of a term like *all* can be so broad that interpretations will vary from one location to another.

DEFINING AND MEASURING TEACHER QUALITY

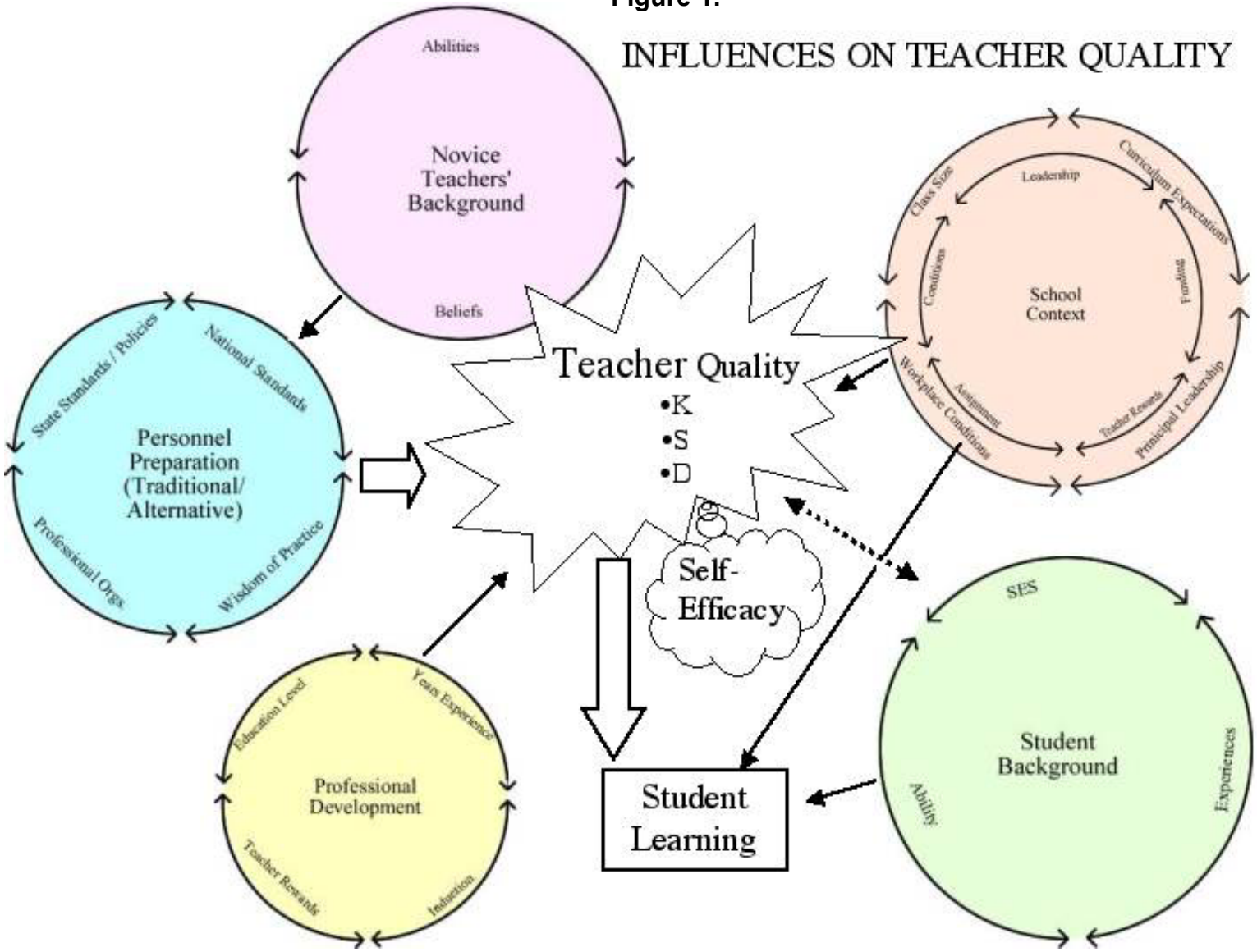
Defining teacher quality is no easy task. Reaching consensus on a definition, even among teacher educators and researchers, is likely to be impossible. Definitions of good teaching range in their focus, e.g., the actions of the teacher, the knowledge a teacher possesses, or the creativity of the teacher. As noted by Porter (1989), "the more that is known about good teaching, the more complicated good teaching appears to be" (p. 344).

It goes without saying that any good definition of teacher quality should include a focus on student learning and the teacher's ability to influence learning positively. Further, the teacher's ability to influence student learning always involves teachers' thinking and observed performances that link to student learning. Complicating any definition are many other factors (e.g., school and community factors, the teacher's background, and teacher preparation) that may directly or indirectly contribute to student learning. (Refer to **Figure 1** for an illustration of influences on teacher quality.)

The shifting goals of schooling are adding to the complexity of definitions of teacher quality (Porter, 1989). The goals expected of schools depend, in part, on the political climate, the priorities for federal funding, and other external influences dominating thinking about schooling at any given time. The role of policy makers at every level—national, state, and local—cannot be underestimated. For example, a recent policy brief by Reichardt (2001) addressed the levers or strategies that policy makers might use at various stages of a teacher's career (i.e., preservice, recruitment and selection, inservice, and retention) to influence teacher quality. As one example, the levers that affect the quality of preservice education include: (a) scholarships, loans, and loan forgiveness as incentives to enter teaching; (b) licensure/certification requirements; (c) accreditation of teacher preparation programs; and (d) models of exemplary practices and programs.

Regardless of how difficult it is to encompass the concept of teacher quality, researchers and teacher educators need clear models to continue to build strong research programs with measures and approaches that can be used to understand teacher quality more fully. Such models have been more clearly articulated in general education than in special education. Given special education's history of limited research on teacher quality, exploration of existing models and development of new models for special education are imperative. This grows in importance as general and special education teachers work more collaboratively in schools.

Figure 1.


INFLUENCES ON TEACHER QUALITY
Abilities
Novice Teachers' Background
Beliefs
Personnel Preparation (Traditional/ Alternative)
State Standards / Policies
National Standards
Professional Orgs
Wisdom of Practice
Teacher Quality
•K
•S
•D
Self-Efficacy
School Context
Class Size
Curriculum Expectations
Leadership
Conditions
Funding
Workplace Conditions
Assignment
Teacher Rewards
Principal Leadership
Professional Development
Education Level
Years Experience
Teacher Rewards
Induction
Student Learning
Student Background
SES
Ability
Experiences

MODELS AND MEASURES OF BEGINNING TEACHER QUALITY

In this section, we evaluate models and measures of beginning teacher quality for conducting research in special education. The five we evaluate are process-product measures, teacher evaluation checklists, standards, large-scale surveys, and commercially available observations. We discuss the general problem of teacher assessment and the particular problem created by the use of student achievement as a measure of teacher quality. Although some consider it a gold standard (Greenwood & Maheady, 1997; Walsh, 2001), we consider alternatives, or what Kennedy (1999) described as "approximations to indicators of student outcomes" (p. 345). For each model and measure previously introduced, we consider the teacher education research genres (Kennedy, 1996) to which it applies and evaluate it against a set of criteria for technical adequacy and practicality.

The use of student outcomes, particularly achievement, as a measure of teacher quality enjoys strong support from both education professionals (Greenwood & Maheady, 1997) and the policy community (Walsh, 2001). The widespread and ready availability of standardized achievement test scores, the fruit of state policy on high-stakes assessment, has fostered interest in their use as an outcome measure in research on teacher quality. Although policy makers have always been interested in the impact of their initiatives on student learning, it was previously difficult to generate an adequately large database for analysis. High-stakes assessment has changed all that.

In a discussion of policy research measures, Kennedy (1999) commented on the difficulty of linking policy initiatives to student outcomes (especially when the outcome of interest is complex student learning) and described approximation methods. She argued that scores on standardized achievement tests, although first-order approximations, fail to represent complex student learning fully. Another first-order approximation, classroom observations may be better, particularly when the observation reports describe "the kind of intellectual work that teachers are asking of their students" (p. 346). However, observations suffer from other shortcomings. There are no standard observation practices. Due to the time that observation requires, typically only small samples of teacher performance are obtained.

As a consequence, according to Kennedy, researchers tend to rely on second-level approximations, or "situated descriptions of teaching" (p. 349). Second-level approximations include vignettes (with teachers' responses) and teachers' daily logs. Questionnaires and interviews constitute third-level approximations, and personal testimonies are fourth-level approximations. Each level has advantages and disadvantages. However, the more removed a measure is from complex student outcomes, advantages are limited to the practical considerations of ease of administration and low cost and technical adequacy is compromised. In Kennedy's framework, the measures we consider in this paper are either first-level (process-product measures, checklists, and PRAXIS III) or third-level (Schools and Staffing Survey [SASS] and SPeNSE) approximations.

Kennedy's argument about complex student learning is only one criticism of the use of standardized test scores in assessing school or teacher quality. Of equal concern, especially for teachers, is the relationship between previous learning and test scores in any given year. Clearly,

students who score poorly on standardized tests are likely to score poorly again in the future. Teachers in classrooms with low-achieving students will compare unfavorably with colleagues with high-achieving students, regardless of the quality of their teaching in a given year. Teachers rightly complain that judgments based exclusively on scores from single administrations of achievement tests disadvantage teachers with large numbers of low-performing students.

In special education, the problem becomes more difficult, because classroom teachers and special educators share responsibility for educating most students with disabilities. Thus, determining which teacher is responsible for what learning may be impossible to do reliably. Furthermore, special education teachers' roles vary from school to school and, for some teachers, from student to student. A special education teacher may work with a single group for much of the day, work with several groups of students for short periods in a resource room, or consult with some students' classroom teachers in planning accommodations and adaptations. We do not know what can be learned about the quality of special education teachers' work from the achievement test scores of their students. With the possible exception of special education teachers in self-contained classes, the relationship between special education teacher quality and student outcomes is tenuous.

In this paper, the models and measures of beginning teacher quality that we consider are approximations of student outcomes. We wish a more definitive link were established between what special education teachers do and how much their students learn. At the same time, we recognize the importance of identifying approximations that are accurate and credible for teachers, researchers, and policy makers alike.

Evaluation Criteria

The six criteria that we use to evaluate the models and measures of beginning teacher quality are *utility, credibility, comprehensiveness, generality, soundness*, and *practicality*. These criteria are represented as U, C, CO, G, S, and P in **Table 1**. A plus (+) indicates that the criterion is regarded as a strength; minus (-) indicates a weakness; and plus-minus (±) indicates both positive and negative evidence. The table lists specific examples of five general classes of models and measures, appropriate research genres, and the criteria used to evaluate each model.

Some criteria are pragmatic. With regard to *utility*, we need to know whether models and measures have been used by other researchers. With a previously used measure, we can benefit from colleagues' experience with it, and their insight and advice may help us decide on appropriate measures for our own research. For *practicality,* also a pragmatic consideration, we need to understand costs, training requirements, and the developmental work required to adapt an existing model or measure for our own purposes. All other considerations being equal, *cheap*, *easy-to-master*, and *readily adaptable* are preferred qualities.

Some of our criteria are technical in nature. *Soundness* is the extent to which a measure is reliable and valid. *Credibility* is face validity, distinguished from *soundness* to highlight the relativity of the notion. Although models and measures must be credible to the researchers using them, we are equally concerned with the credibility of a given model or measure for other stakeholder groups—most importantly, teachers, administrators, policy makers, and families. In

this sense, *credibility* may be inferred from what we know about how a model or measure was developed and validated. We may infer *credibility* for stakeholder groups to the extent that they were involved in the development or validation process.

Table 1. Models and Measures of Beginning Teacher Quality

MODEL	EXAMPLES	RESEARCH GENRE					CRITERIA USED TO EVALUATE MODELS					
		1	2	3	4	5	U	CR	CO	G	S	P
Process-Product	COKER Stallings (1980)		✓		✓	✓	+	±	-	+	+	-
Teacher Evaluation Checklists	Englert, Tarrant, & Mariage checklists (1992)*		✓		✓	✓	-	±	+	+	-	-
	Stanovich & Jordan (1998)** and Haager et al. (2003)**		✓		✓	✓	±	±	+	±	+	-
Standards	CEC Knowledge and Skills [1] INTASC[1]		✓	✓		✓	±	+	+	+	-	-
Representations of Teacher Quality in Large-Scale Surveys	SASS SPeNSE	✓		✓			+	-	-	+	+	+
Commercially Available Observation	PRAXIS III		✓		✓	✓	±	+	+	+	+	-

[1]Neither CEC nor INTASC currently offers an assessment process.

Key: 1 = Searches for factors that influence student outcomes
2 = Comparative studies of licensed and unlicensed teachers
3 = Follow-up surveys
4 = Experiments
5 = Case studies of change over time

U = utility; CR = credibility; CO = comprehensiveness; G = generality; S = soundness; P = practicality

* designed for student evaluation

** designed for research

Generality and *comprehensiveness* refer to a model's theoretical foundation. *Generality* requires us to consider how well a single model of beginning teacher quality represents the full range of contexts in which a special education teacher may work. Does the model fairly represent the work of consulting teachers, resource room teachers, and teachers in self-contained classes? Does the model fairly represent the work of teachers of students with high-incidence disabilities as well as students whose disabilities are more significant? Models that allow for comparability across contexts simplify the aggregation of research findings. *Comprehensiveness* is derived from the richness and breadth of the model or measure. A better model or measure taps knowledge and dispositions in addition to skills. A better model or measure includes management skills, reflection, and decision-making in addition to discrete teaching performances. Finally, a better model or measure incorporates the work that teachers do with each other, families, and communities.

In addition to discussing technical, pragmatic, and conceptual criteria for models and measures of beginning teacher quality, we will consider the research genres in which each fits. As noted previously, we describe teacher education research genres using Kennedy's (1996) framework as a guide.

Teacher Education Research Genres

Kennedy described five traditions in teacher education research, considering within each genre the teacher education elements studied and the measures typically used. She also analyzed the credibility of the logic underlying each. The five genres are: (a) identification of factors that influence student outcomes, (b) comparative studies of licensed and unlicensed teachers, (c) follow-up surveys, (d) experiments, and (e) case studies of change over time.

Factors that influence student learning. Studies of factors that influence student learning commonly use large-scale multiple regression models to analyze the statistical relationships between a set of predictor variables (including teacher education variables, e.g., licensure) and a criterion variable (e.g., reading achievement). Such studies focus on the "policy parameters" (Kennedy, 1996, p. 124) of teacher education (e.g., number of required credits), and student achievement is typically the criterion of interest. An effort is made to identify variables that contribute to achievement and those that do not. In spite of limitations with the genre, studies of factors that influence student learning have the distinct advantage in the current policy context of using achievement as the criterion.

Comparisons. Comparisons of licensed and unlicensed teachers typically involve observations of classroom practice or performance on teacher assessments. In studies of this genre, differences favoring fully qualified teachers are expected. Such comparisons test the value of teacher preparation explicitly. One problem with this logic is that teacher education is treated as a consistent and uniform phenomenon, which it clearly is not. Furthermore, comparative studies also presume substantial differences in preparation, although even unlicensed teachers often have some teacher preparation.

Follow-up studies. Follow-up studies are familiar to all readers of special education teacher education research. Researchers operating within this genre presume that teachers themselves are

reliable sources of information about their practices and how they were acquired. Such studies may focus on components of teacher education and thereby allow for more precision than either of the first two genres in which teacher education is considered to be uniform and consistent. Follow-ups that involve telephone or paper-and-pencil surveys can be administered widely for little cost. With large samples that permit stratification, teacher groups can be differentiated on key subject variables (e.g., graduates of 4-year vs. 5-year programs). Follow-up studies typically are conducted with graduates of a single teacher education program and are most useful for faculty there.

Experiments. In experimental studies of teacher education, a skill is taught in different fashions with different groups. Differences in skill performance may be attributed to differences in teacher education pedagogy. Experimental studies enjoy several advantages, including clear focus on teacher education components and assessment of outcomes (e.g., the skill being taught). Among the disadvantages, such studies focus on training discrete, narrowly defined skills, which are part—but not the sum of—teacher quality. Absent from experimental research are cognition, reflection, and decision-making—the elements that are thought to make effective teaching a coherent whole.

Case studies. In case studies of teacher and teacher candidate change, candidates are examined at the beginning and end of their programs, and possibly more often. Differences on these assessments are used to describe the process through which a teacher develops. Candidates' knowledge, attitudes, and beliefs are assessed. If cost were no consideration, observations of classroom practice also could be used within this genre. In good case study research, theory is used to generate and organize questions and to suggest directions for change.

Models and Measures

The five traditions of assessing beginning teacher quality are: (a) empirical representations of effective practice derived from process-product research; (b) more complete and holistic representations, exemplified by checklists developed by Englert and her colleagues (1992) and others (Stanovich & Jordan, 1998); (c) standards; (d) representations of effective practice from large-scale surveys, e.g., SASS, SPeNSE; and (e) PRAXIS III, the Educational Testing Service's (ETS) observation system for classroom teachers. We measure these traditions against our six evaluation criteria and consider the genres for which each would be appropriate.

Observations of effective practice in process-product research. In the typical process-product study, teachers are observed at work in their classrooms. Teaching and classroom interactions typically are described in a series of low-inference behavioral categories, often mutually exclusive and exhaustive, so that any event may be coded in only one way. The manner in which the stream of classroom instructional events and interactions is parsed reflects an empirical or theoretical conception of teaching. Code frequencies or durations are aggregated across teachers and related to achievement measures. Relationships between patterns of classroom performance (or interactions) and student outcomes are determined statistically.

To illustrate, in Algozzine, Morsink, and Algozzine's (1988) study of instruction in self-contained special education classrooms, the researchers used the Classroom Observation Keyed

for Effectiveness Research (COKER). Medley, Coker, and Soar (1984) described the COKER as an objective, low-inference process for observing the ongoing flow of student/teacher interaction. Based on its history of use in general education process-product research and information from the manual, Algozzine et al. judged the COKER to be technically adequate for their purposes. The system requires trained observers who code all of the *keys* they observe in a given time period. In the COKER lexicon, *keys* are statements describing discrete teacher actions—what others might call competencies, performances, or behaviors. For example, one key under *Learner Reinforcement and Involvement* is "maintains environment in which students are actively involved, working on task." (Medley et al., 1984, p. 162). In this study, trained observers conducted 12 5-minute observations/classroom, a total of 60 minutes. The COKER is a complex system, and Algozzine et al. used three of its *Competency Dimensions*: (1) Instructional Strategies, Techniques, or Methods (7 keys), (2) Communication with Learners (5 keys), and (3) Learner Reinforcement and Involvement (5 keys). On the basis of these COKER observations, Algozzine et al. reported that the teachers in their study performed adequately, but not differently, based on the classifications of their students.

Process-product measures like the COKER seem well suited to comparison studies of licensed and unlicensed teachers and longitudinal studies of change, although using such complex systems would be costly and labor-intensive. Process product measures like the COKER can be used in experiments, as in Stallings' (1980) work on beginning reading instruction. Teachers were assessed before and after an intervention designed specifically to affect how they allocated time across the same categories being observed.

We have alluded to the high cost of repeated administrations of process-product measures and other factors that limit their *practicality*. For example, extensive training is required for COKER observers, and the need to repeat training over the duration of a longitudinal study further diminishes its *practicality*. Furthermore, whether an established system will be sensitive to the changes that a particular program is intended to produce is unknown. The credibility of a process-product measure like the COKER may derive from professional consensus, research on effective teaching, or theory. COKER keys, originally developed through professional consensus, were validated in subsequent research (Medley et al., 1984). Its use in special education classrooms required a leap of faith by Algozzine et al. (1988), but the generality of the system was borne out by its utility to the authors. As a limitation, conceptions of teacher quality derived from the COKER—or from process-product measures in general—are based on observations of teachers' actions and fail to tap other dimensions of what we know to be complex performance.

Overall, process-product measures have strengths and weaknesses. Foremost among their strengths are the potential for highly reliable measurement of the relationships between items on the observation system and key criterion variables, e.g., achievement. Among the weaknesses of process-product measures is the reliance on teachers' actions to the exclusion of internal events available through interviews, logs, and other measures. Their use also can be impractical, particularly when extensive training is required for reliable administration or research designs that necessitate repeated observations over time.

Checklists for expanding concepts of effective practice. In 1992, Englert, Tarrant, and Mariage described a series of detailed, moderate-inference checklists they developed for evaluating field experience students. Taken together, Englert et al.'s checklists constitute a rich, detailed model of beginning teacher quality. In this section, we consider both the original

checklists and a research adaptation developed by Stanovich and Jordan (1998) for their study of the relationship of teachers' and principals' beliefs about inclusion and effective teaching practices.

The first four checklists described by Englert et al., which derived from process-product relationships, covered classroom management (15 items), time management (10 items), lesson presentation (27 items), and seatwork management (9 items). All items were scored on a 1-5 scale, ranging from *Needs Work* (1), through *Satisfactory* (2-3), and *Excellent* (4-5). The authors offered no guidance about how long an observation must be conducted before reliable judgments can be made, nor did they provide other evidence of technical adequacy.

To these process-product checklists, Englert et al. added additional items that "involve analyses of the qualitative dimensions of instruction and the social contexts in which students are instructed" (pp. 69-70). This enriched process-product conceptions by adding items derived from four principles of effective teaching: (a) instruction should be embedded in meaningful and purposive contexts, (b) classroom dialogue may be used to promote self-regulated learning, (c) teachers must demonstrate responsiveness to students' instructional needs and interests, and (d) in classroom learning communities, "student-to-student and teacher-to-teacher discourse. . . foster deeper conceptual understandings" (p. 80). To incorporate these constructivist principles, Englert et al. added an *Observation Checklist for Examining the Contexts for Higher-order Learning* corresponding to the four principles: meaningful contexts (4 items), classroom dialogues (11 items), responsive instruction (8 items), and classroom community (5 items).

Stanovich and Jordan (1998) adapted Englert et al.'s checklists by identifying items that would be most readily and predictably observed in a half day, using 8 of Englert et al.'s items to constitute a classroom management scale, 8 to create a time management scale, and 11 to create a lesson presentation scale. They also added 4 items on the degree of inclusion. Trained observers rated teachers' performance on these 31 items after a half-day observation. Items were scored as *consistent*, *inconsistent*, or *not observed*. Total scores were used as the criterion measure of effective teaching. All teachers were rated by two observers, and agreement between observer pairs averaged nearly 80 %. *The English-Language Learner Classroom Observation Instrument* (Haager, Gersten, Baker, & Graves, 2003) was designed specifically for observing literacy instruction by teachers of English language learners. This instrument, whose roots also may be found in process-product research and has been validated for research purposes, will be discussed in the section on culturally diverse and English-language learners.

Checklists of this sort lend themselves to the same kinds of teacher education studies as process-product observational measures, to which they are closely akin. These seem appropriate for use in comparative studies, experiments, and case studies of change. Stanovich and Jordan's adaptation and use enhance the utility of the original checklists, which seem impractically long and elaborate for research purposes. Furthermore, Stanovich and Jordan demonstrated that their abbreviated versions can be used reliably and that short form total scores were related to two criterion measures: teacher attitudes and school culture.

The Englert et al. paper was the most frequently cited paper to appear in *Teacher Education and Special Education* through 1995 (Tulbert, Sindelar, Correa, & La Porte, 1996), suggesting its

strong credibility in an audience of teacher educators. By intention, the full-length checklists are more comprehensive than process-product measures, including considerations of contextual factors, interactions, and community, notably missing from behavioral observation systems and the abbreviated version of Stanovich and Jordan. The checklists would seem to have wide applicability in assessing teachers of students with high-incidence disabilities. Englert's important work advanced special education thinking about what constitutes effective teaching. The ideas she and her colleagues introduced a decade ago seemed quite radical indeed. At a practical level, however, the checklists have never been widely used for research purposes, Stanovich and Jordan's work notwithstanding.

Standards for teacher quality. The CEC began promulgating teaching standards in the early 1990s and in 2001 published a revised edition of *The CEC Standards for the Preparation of Special Educators*. This document begins with narrative descriptions of 10 content standards: foundations; development and characteristics of learners; individual learning differences; instructional strategies; learning environments and social interactions; communication; instructional planning; assessment; professional and ethical practice; and collaboration. Each content standard is then described in terms of the knowledge and skill competencies it comprises.

Fifty-four (54) knowledge and 72 skill statements make up the common core. Additional sets describe generic practice with students with high-incidence (individualized general curriculum) and severe disabilities (individualized independence curriculum). Specialized practice is presented in six categorical areas and two additional areas—early childhood and transition specialist—defined by the age levels of the students served and the nature of programming appropriate to those levels. A teacher who completes a generic program for students with high-incidence disabilities is expected to be proficient with the 126 competencies in the core along with 42 knowledge and 47 skill statements in the individualized general curriculum referenced standards. A teacher preparing to work with students with specific learning disabilities (SLD) must demonstrate proficiency on 174 competencies: the core plus 27 knowledge and 21 skill statements specific to SLD.

CEC's knowledge competencies are written as general, descriptive phrases. One statement from the common core—development and characteristics of learners—reads, "Educational implications of characteristics of various exceptionalities" (CEC, 2001; *Common Core*, p. 1). Another from the specialized knowledge base in mental retardation—development and characteristics of learners—is "causes and theories of intellectual disabilities and implications for prevention" (CEC, *Learning Disabilities*, p. 1). Skill standards start with verbs and are like knowledge statements in their generality. In fact, some skill descriptions are so general as to belie their use as categorical standards. For example, teachers of students with SLD are expected to "use specialized methods for teaching basic skills" (CEC, *Independence Curriculum*, p. 3). Others are more precisely described and more clearly associated with a particular categorical area, e.g., "demonstrate appropriate body mechanics to assure student and teacher safety in transfer, lifting, positioning, and eating" seems quite specific to individualized independent curriculum referenced standards, learning environments, and social interactions.

CEC standards carefully avoid the word *competency* to refer to either skill or knowledge *items*, which is their preferred term. *Competency* carries a somewhat negative connotation in our field because of our tendency to reduce the complex performances of teaching into narrowly defined

parts and to think of teaching as an assembly of discrete skills. Although CEC knowledge and skill items are precisely defined, INTASC standards are fewer in number and more broadly conceived. INTASC standards are organized by the principle to which they are related. By virtue of CEC's effort to align their standards with those of INTASC, the 10 INTASC principles are roughly analogous to CEC's 10 content standards.

The title of INTASC's recent document for teachers working with students with disabilities, *Model Standards for Licensing General and Special Education Teachers of Students with Disabilities: A Resource for State Dialogue (2001)*, hints at its organization. Every principle is elaborated into standards for general and special education teachers and additional standards for special education teachers only. INTASC standards, first released in 1992, were designed for compatibility with standards for accomplished practice promulgated by the National Board of Professional Teaching Standards. The special education initiative began in 1997. These standards, which were developed by a committee of general and special education teachers and teacher educators, include knowledge, skills, and dispositions that build upon and are organized by the core principles. The purpose of these standards is to differentiate general from special education teachers' roles, with reference to: (a) content (Principle 1); (b) pedagogy (Principles 4-10); (c) knowledge of students with disabilities (Principles 2 and 3); and (d) contexts (Principle 10). There are 49 standards for both general education and special education teachers and an additional 49 for special education teachers.

INTASC (2001) standards: (a) emphasize that "teaching and learning are dynamic and interactive processes" (p. 2); (b) are responsive to students' contexts; and (c) encourage users to take standards as a whole "to convey a complete picture of the acts of teaching and learning" (p. 2). Unlike the CEC standards, INTASC knowledge, skills, and dispositions are not differentiated by role (e.g., early childhood and transition specialist) or disability classification. The statements are written in paragraph-length narratives of complete sentences. Typically, a principle is broken down into elements, which are elaborated in the standards. For example, for Principle 3, "the teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners" (INTASC, p. 17), the general and special education teacher standards include: (a) building awareness of disability and respect for students with disabilities, (b) recognizing that students with disabilities make up a heterogeneous group, (c) understanding families' perspectives on disabilities, and (d) recognizing that some differences may be mistaken for disability.

Because neither CEC nor INTASC standards offer an assessment process (although assessments are in the works), it is impossible to speak to the issue of their technical *soundness* or their *utility* as an approximation for student achievement. At present, standards seem most useful for guiding the development of surveys of graduates in follow-up studies and in interviews used in longitudinal studies of change. Standards have rarely been used as outcome measures in teacher education research; their use in Nevin, Thousand, Parsons, & Lilly (2000) is the only instance we found in the special education literature. However, both CEC and INTASC standards have the decided advantage of being fully comprehensive and general by design, CEC in a formal sense by dividing up knowledge and skill items and differentiating by roles. Both conceptions include important work that teachers do outside the classroom. In CEC's collaboration standard and INTASC's Principle 10, "The teacher fosters relationships with school colleagues, families, and

agencies in the larger community to support students' learning and well being" (INTASC, p. 37). Both CEC and INTASC standards, which impress us as credible, were developed with input from key stakeholders in iterative processes.

For the moment, standards have limited potential as outcome measures in teacher education research, except as a guide to survey or interview development in follow-up or longitudinal research. At the same time, the conceptions of beginning teacher quality represented in these standards are detailed, coherent, and complete. The standards do represent contemporary professional thought but lack empirical connection to student outcomes, unlike process-product measures.

Representations of teacher quality in large-scale surveys. Questions in the SASS and SPeNSE teacher surveys also constitute representations of beginning teacher quality (Schools and Staffing Survey [SASS], 2003; Study of Personnel Studies in Special Education [SPeNSE], 2003). SASS data have been collected four times since 1987 by the NCES and have been used extensively by Boe and his colleagues in analyses of teacher supply and demand (Boe, Bobbitt, & Cook, 1997; Boe, Cook, Bobbitt, & Terhanian, 1998; Boe, Cook, Kaufman, & Danielson, 1996). The SASS sample taps the universe of public and charter schools in the U. S. The SPeNSE survey was administered once to a nationally representative sample of special education teachers.

SASS. The SASS Teacher Questionnaire asks teachers to specify demographics, educational backgrounds, certification(s), and years of experience. Additional questions tap: (a) length of practice teaching, (b) first-year duties and supports, (c) mentoring, and (d) professional development. It assesses attitudes and perceptions toward job satisfaction, support, influence in school, school safety, and behavior. Teachers also are asked how well prepared they felt in their first year of teaching for management, instructional methods, technology, lesson planning, assessment, and selection/adaptation of instructional materials. Other questions focus on professional development. The Teacher Follow-up Survey is conducted in years subsequent to SASS administration, and teachers who have changed schools or left the field are surveyed along with a sample of teachers who stayed at the school.

SPeNSE. In the SPeNSE teacher survey, teachers are asked about preservice preparation and indicate the number of hours of professional development they received over the previous 12 months in each of 27 areas. Teachers also indicate their agreement on a Likert scale with statements like: "I am skillful in planning effective lessons," or "I am skillful in teaching reading or pre-reading skills." Thus, for the 27 preparation areas, teachers indicate any preservice training, specify hours of professional development, and judge their degree of mastery.

SPeNSE includes a second set of questions about professional development. Teachers are asked whether they have a personal professional development plan and whether they have participated in any of 12 professional development activities over the past year. They indicate their hours spent in professional development and benefits of these experiences (e.g., Improved your effectiveness as a teacher? Been responsive to your professional development needs?) This section of the survey ends with six more questions related to mentoring, contacts with teachers and other education professionals, reading professional journals, and association membership.

Representations of beginning teacher quality, like SASS and SPeNSE, clearly are intended for use in follow-up survey research. Their *utility* is evident, and these surveys have been used with both general and special education teachers and across special education contexts. The entire research genre is practical in that extensive data may be generated relatively inexpensively and relatively quickly. Because SASS and SPeNSE have been validated by use in previous research, these surveys are presumed to be technically sound, although the conceptions of beginning teacher quality that can be inferred are sketchy and incomplete relative to other potential measures (e.g., standards). Generally, the credibility of surveys like these is limited by the self-report format and its potential for inaccuracy and bias.

PRAXIS III. PRAXIS III (Dwyer, 1993, 1994) is "a system for assessing the teaching skills of beginning teachers" (Dwyer, 1998, p. 163) in a high-stakes assessment environment. (PRAXIS I is a test of enabling skills such as reading, writing, and arithmetic; and PRAXIS II is a test of subject matter knowledge and teaching principles.) The 19 PRAXIS criteria, which are organized into four domains, were developed from research (Reynolds, 1992), job analyses, and a multi-state validity study. The criteria were piloted in the field and refined in collaboration with practicing teachers. During its development, PRAXIS III went through five iterations.

The development process, begun in 1987 and completed in 1993, involved: (a) establishing an underlying conception of teaching, (b) developing a plan for defining teaching, and (c) linking this definition to assessments. The underlying conception of teaching emphasizes the importance of action and decision-making and the consideration of individual, school, and community contexts. Because learning is presumed to involve the active construction of knowledge, assessments must take place in classrooms. Teachers are afforded opportunities to explain their actions, and scoring allows for the reality that good teaching can take many forms. Skilled professionals are thought to make the best assessors.

The 19 criteria are organized into four domains:

- Organizing Content Knowledge for Student Learning
- Creating an Environment for Student Learning
- Teaching for Student Learning
- Teacher Professionalism.

Dwyer (1993) asserted that these criteria establish "a vision of teaching. . . derived from working closely with teachers themselves. . . relevant to teachers' own practice and concerns. . . . [and] informed by the theoretical and policy perspectives of other educators and researchers" (p. 172). PRAXIS III involves three data collection processes:

- direct observation of classroom practice (in which a running narrative is kept)
- written materials (class/teacher profiles and a lesson plan)
- interviews (before/after the observation) related to the lesson.

Trained assessors observe teachers as they teach a lesson of their choice to a group of their choice. On the evidence—the two profiles, lesson plan, running observational record, and interview protocols—assessors rate teachers on the 19 criteria. The scale used is from 1.0 to 3.5, where a rating of 2.0 represents minimally satisfactory performance. Scoring is guided by a rubric linked to the nature of the evidence. Assessor training, which requires five days, is considered essential for identifying evidence relating to criteria and to using evidence to reach judgment.

Observation systems like PRAXIS III may be used in comparative studies and in longitudinal studies of change. The generality of the criteria preclude its use in experiments unless ratings are conducted on a pre/post basis (as for process-product measures) and the intervention is designed specifically to affect performance on one or more criteria. The conception of teacher quality is highly credible, given the systematic manner with which it was developed and the participation of key stakeholders throughout. However, as an assessment for classroom teachers, PRAXIS III made no special adaptations for special education practice.

PRAXIS III has been used in one special education study (Daunic & Sindelar, 1997). In this study, the system worked well with a sample of special education teachers, and the authors concluded that "their experience supported its use in a variety of classroom contexts and its validity for assessing teachers in special education" (p. 23). They noted that the pattern of performance across the 19 criteria supported this assertion in the sense that their sample of special education teachers performed relatively well where expected and relatively less well where expected (e.g., extends students' thinking). Ratings on six criteria and two domain summary scores differentiated graduates of three distinct teacher education program types.

Thus, PRAXIS III rates high marks on *utility* and *credibility*. Furthermore, the richness of the record of evidence creates a comprehensive picture of beginning teacher quality. With regard to *soundness*, Dwyer (1998) emphasized its construct validity and argued that construct validity was the most important consideration for teacher observation systems. Furthermore, ETS developed the PRAXIS to market to states as a legally defensible process for licensing beginning teachers. The reliability of assessors' ratings is implied by the extensiveness of their training. However, PRAXIS III administration is highly costly and labor-intensive. Training also is costly and, for longitudinal studies, would need to be repeated for new assessors. Although the picture of teaching competence derived from PRAXIS III observations is rich and sound, the system may be impractical for some purposes.

Research on teaching (e.g., process-product studies) in special education focused most often on teachers of students with high-incidence disabilities (i.e., learning disabilities, mild mental retardation, and/or behavior disorders). Given this, we are satisfied that the models and measures we have presented are useful for examining teacher quality for these teachers. However, since the research and teaching agendas within special education differ, we now explore the usefulness of these models and measures for teachers of students with severe disabilities, teachers in transition programs, and teachers serving culturally diverse and English language learners.

BEGINNING TEACHERS SERVING SEVERE DISABILITIES

Knowledge Base for Beginning Teachers

The term *severe disabilities* is used to characterize individuals with an extremely broad range of educational needs (McDonnell, Hardman, & McDonnell, 2003). In many states, beginning teachers are required to provide educational services to students with moderate to profound mental retardation, multiple disabilities (e.g., mental retardation and physical disabilities, deafblind), autism, and other health impairments. Not surprisingly, these teachers must have knowledge and expertise well beyond what is typically provided in many special education preservice programs (Baumgart & Ferguson, 1991; Fox & Williams, 1992). The roles of these teachers have become more challenging in the last ten years as this group of students have been included in general education classes and the general education curriculum (The Arc, 1998; Ford, Davern, & Schnorr, 2001; Meyer, Peck, & Brown, 1991; National Association of State Boards of Education, 1992; The Association of Persons with Severe Handicaps [TASH], 2000). These teachers must not only be prepared to meet the unique educational needs of these students but must do so within typical schools and classrooms.

Although there is a significant research base on effective teaching practices for students with severe disabilities (cf. Browder, 2001; Snell & Brown, 2000; Westling & Fox, 2000), there has been surprisingly little effort to define the specific knowledge base that beginning teachers must have to serve this group of students effectively (Hardman, McDonnell, & Welch, 1998; Ryndak & Kennedy, 2000). The CEC has developed lists of knowledge and skill standards that it believes are critical for teachers who work with students identified as having severe disabilities (CEC, 2001). For example, CEC lists 10 different standards for teachers who are being trained to work with students with mental retardation or developmental disabilities. These standards are: foundations, development and characteristics of learners, individual learning differences, instructional strategies, learning environments/social interactions, language, instructional planning, assessment, professional and ethical practice, and collaboration. Each standard includes specific knowledge and skill indices that CEC notes as essential for teachers working with this group of students. However, the general organization of the CEC standards is at odds with the noncategorical nature of the term *severe disabilities*. To address this issue, CEC has also developed standards for noncategorical preservice programs that it refers to as programs with *individualized independence curricula*. The knowledge and skill indices included in this set of standards are drawn from those developed for several other categorical areas (e.g., mental retardation/developmental disabilities, physical disabilities).

Recently, the Association for Persons with Severe Handicaps (TASH*)* (2002) adopted a resolution outlining its position on the specific areas of knowledge and expertise essential for teachers working with students with severe disabilities (see the **Appendix**). The TASH standards are based on the assumption that students with severe disabilities should be educated in general education classes and should participate in the general education curriculum. Therefore, teachers must be prepared to meet students' educational needs in these settings. The standards address a wide range of areas, including curriculum, instruction, developing social supports, and collaboration. However, at this point, TASH has not articulated specific competencies for each standard.

There is no research examining the areas of knowledge and expertise typically included in preservice programs nationally for teachers of students with severe disabilities. One exception is Ryndak, Clark, Conroy, & Stuart (2001). They interviewed representatives from 33 institutions of higher education (IHEs) regarded as having exemplary programs in severe disabilities. The study was designed to identify the general configuration of masters programs in severe disabilities and the areas of expertise considered essential for beginning teachers. The interview focused on 113 specific knowledge and skill competencies divided into nine general areas of expertise, including collaboration and technical assistance, inclusion, advocacy and self-advocacy, curriculum content identification processes, effective instruction, functional assessment and behavior intervention plans, transition and transition to adult living, physical and sensory disabilities, and research. The specific interview items were drawn from previously published lists of competencies for special education teachers (e.g., CEC competencies) and a review of the literature on recommended educational practices for students with severe disabilities. The overwhelming majority of respondents from these programs agreed that knowledge and skills in these areas were essential to prepare teachers for their roles in the schools and therefore should be included in preservice training programs.

At this point, there is no consensus about what beginning teachers of students with severe disabilities should know. The result is that the specific knowledge, skills, and expertise that this group of teachers must demonstrate before they enter the profession varies significantly from state to state. It is also unclear whether widespread efforts to reform teacher education will produce a consensus about this knowledge base. Unfortunately, attention to the preparation of teachers of students with severe disabilities has been conspicuously absent from the dialogue about teacher education reform (Blanton, Griffin, Winn, & Pugach, 1997; Ford et al., 2001; Pugach & Warger, 1996; Ryndak & Kennedy, 2000). In addition, there has been virtually no discussion about what other special and general educators should know to meet the needs of students with severe disabilities when they are included in general education classes.

Research on the Preparation of Beginning Teachers

Although there is a robust research literature on recommended educational practices for students with severe disabilities, there has been very little research examining effective ways to prepare new teachers to implement these practices or to evaluate teacher competence and understand teacher quality (Baumgart & Ferguson, 1991; Kaiser & McWhorter, 1990; Ryndak & Kennedy, 2000). Several book chapters and articles have made recommendations for the design of preservice preparation programs based on analysis of research on curriculum, instructional, and behavioral support strategies to promote student learning (Baumgart & Ferguson, 1991; Fox & Williams, 1992; Whitten & Westling, 1992). Others have made recommendations for the design of preservice programs based on themes underlying the education reform movement (Eichinger & Downing, 2000; Hardman et al., 1998).

The literature also includes a number of program descriptions outlining how various teacher education programs have organized their curriculum and the educational experiences they provide teacher candidates (Gast & Wolery, 1990; Goetz, Anderson, & Doering, 1990; Keefe, Rossi, de Valenzuela, & Howarth, 2000; Lane & Canosa, 1995; O'Reilly & Renzaglia, 1994; Rainforth, 2000; Snell, Martin, & Orelove, 1997). The programs appear to share a number of

organizational features, including that the content of preservice preparation should center on preparing teacher candidates to implement empirically validated practices, that the preservice program should be competency-based and require teacher candidates to demonstrate their ability to use teaching strategies with students in typical school settings, and that beginning teachers should receive intensive, ongoing supervision from faculty members who can model recommended practices. However, published studies on the effectiveness of program models to prepare teachers for their roles in the schools and the ability of program graduates to impact student learning are few. Research on the effectiveness of preservice programs in severe disabilities has relied primarily on attitude surveys and interviews. For example, Lane & Canosa (1995) described the impact of a mentorship program for preservice teacher candidates in severe disabilities at The Johns Hopkins University. They asked 10 teacher candidates who had participated in the program over a 2-year period to rate the quality of the mentorship program in preparing them to implement several program planning, curriculum, and instructional strategies with students with severe disabilities in a written survey. The teacher candidates' mentors rated their perceptions of the impact of the program on their own practice in areas such as collaboration, peer observation, and consultation. The authors concluded that the program was effective in preparing teacher candidates for their future roles and helped practicing teachers to improve their professional skills.

Potential Application of Current Assessment/Evaluation Models

One of few models for determining teacher competence in severe disabilities is a set of performance-based standards developed by CEC. These standards are organized by a listing of what CEC describes as validated knowledge and skills. The validation procedure is based on expert opinion from surveys within the field (i.e., state leadership, university personnel, school district leadership, and practicing teachers) to determine whether a specific knowledge or skill is consistent with current practice. Teacher education programs in severe disabilities may choose to respond to one of two possible sets of performance standards in seeking program approval. The first option is oriented to a specific disability category, identifying knowledge and skills for students with mental retardation or developmental disabilities. The second option is a set of *individualized independence curriculum* standards. Described as *noncategorical*, the independence standards are heavily weighted toward medical and health aspects of conditions that affect students with disabilities.

The match between the literature on effective educational practices for students with disabilities and the CEC performance standards presents some interesting challenges for future research on teacher quality. While CEC standards are consistent with a competency-based orientation to teacher education, they are inconsistent with the extant research literature in three areas: (1) while there is some emphasis on the use of validated teaching strategies in typical school settings, most standards focus on services across a continuum of placements; (2) there is little or no orientation to teacher competence in instructional practices for self-determination, building natural support networks, and enhancing student participation in home, school and community; (3) while the research literature emphasizes the need to prepare teachers in the use of empirically validated practices, CEC standards rely heavily on expert opinion in determining knowledge and skills without requiring teacher preparation programs to document the use of research-based instruction.

A second source for determining teacher competence in severe disabilities is the INTASC draft of *Model Standards for Licensing General and Special Education Teachers of Students with Disabilities: A Resource for State Dialogue* (2001). Using INTASC's 10 core principles as a base, a committee of special and general educators developed a guide to assist states in developing and refining their standards and practices. Like CEC, INTASC sought input from education experts on the implications of using the 10 core principles for meeting the needs of students with disabilities. From this set of implications, INTASC developed key knowledge, skills, and dispositions expected of beginning general and special education teachers.

Both CEC and INTASC models address the need for special education teachers to have knowledge of expanded curriculum in areas such as communication, social development, motor skills, functional and independent living skills, and employment-related skills. However, where CEC addresses instruction within the continuum of placements, INTASC describes the special education teacher's role as "a specialist who is responsible for the integration of students with severe/multiple disabilities in general education classrooms with the support of paraprofessionals" (p. 6). INTASC also emphasizes that a specific disability does not dictate how a student will learn. It is the special education teacher's responsibility to move beyond the disability label to work directly with the family in teaching the functional skills necessary to access and participate in valued post-school outcomes (e.g., employment, personal management, self-advocacy, communication). Consistent with research on preparing beginning special education teachers, INTASC expects special education teachers to identify instructional strategies that have been validated across different learning environments (home, school, and work).

Table 2. Models and Measures of Beginning Teacher Quality in the Area of Severe Disabilities and Transition

MODEL	EXAMPLES	RESEARCH GENRE					CRITERIA USED TO EVALUATE MODELS					
		1	2	3	4	5	U	CR	CO	G	S	P
Standards Knowledge & Skills	CEC INTASC	✓		✓		✓	-	+	-	-	-	+

Neither CEC nor INTASC currently offers an assessment process.

Key: 1 = Searches for Factors That Influence Student Outcomes
2 = Comparative Studies of Licensed and Unlicensed Teachers
3 = Follow-up Surveys
4 = Experiments
5 = Case Studies of Change Over Time
U = utility; CR = credibility; CO = comprehensiveness; G = generality; S = soundness;
P = practicality

Future research on teacher quality related to educating students with severe disabilities could use measures based on CEC and INTASC standards, which meet the criteria (**Table 2**) for *credibility* (stakeholders' validation) and *practicality* (costs and training requirements). The standards fail to meet criteria related to *utility* (used by other researchers); *generality* (full range of contexts related to role assignments); *comprehensiveness* (richness and breadth); and *soundness* (reliability and validity).

A third potential source for determining teacher competence in severe disabilities is the *Proposed Resolution on Teacher Education* drafted by TASH (see previous discussion and **Table 2**). TASH's approach to teacher quality is similar to the approach of INTASC. TASH supports the need for beginning special education teachers to have a solid foundation in curriculum, instructional methods, and assessment related to serving students with severe disabilities in general education settings. Like INTASC, TASH indicates that teachers need to be prepared to teach a diverse population of learners within heterogeneous groups; collaborate with families and school/non-school personnel; promote self-determination to ensure each student's meaningful involvement within the community; and orient instruction during the transition years to post-school outcomes, including employment and supported living. TASH emphasizes the need to prepare special education teachers to provide instruction based on empirically validated knowledge within the context of general education settings for school-aged students and in natural settings for young adults.

BEGINNING TEACHERS IN TRANSITION PROGRAMS

The Knowledge Base for Beginning Teachers

Research over the last decade has identified practices associated with the successful transition of students with disabilities from school to adulthood and community life (Benz, Yovanoff, & Doren, 1997; Blackorby & Wagner, 1996; Heal & Rusch, 1995; Phelps & Hanley-Maxwell, 1997; Wehman & Revell, 1997). Among these practices are: (a) including students in the general education curriculum, especially vocational education classes; (b) referencing curriculum and instruction to the demands of adulthood; (c) planning person-centered transition; (d) securing paid employment for students prior to leaving school; (e) developing natural supports; and (f) coordinating services between education, post-secondary, and community service agencies. In addition, the knowledge base for beginning teachers working in transition programs is directly affected by amendments to the Individuals with Disabilities Education Act (IDEA) of 1990 (P.L. 101-476), which was designed to improve post-school outcomes for students with disabilities (U. S. Department of Education [USDOE], 1990). Through these amendments, Congress directed state and local education agencies (SEAs and LEAs) to provide students with a set of *transition services* that would promote their successful movement from school to adult life. The transition mandates in IDEA were further refined in amendments adopted by the Congress in 1997. IDEA 97 makes clear that SEAs and LEAs must not only provide transition services to students but to structure those services in ways that increase the likelihood that students will be able to achieve their own post-school goals (USDOE, 1997).

Several studies have identified what practitioners believe are critical areas of knowledge and skills for teachers who are supporting the transition of students with disabilities from school to community life (Blanchett, 2001; Bull, Montgomery, & Beard, 1994; deFur & Taymans, 1995; Knott & Asselin, 1999; Morgan, Moore, McSweyn, & Salzberg, 1992; Woolfe, Boone, & Blanchett, 1998). For example, deFur and Taymans reported the results of a national survey of 149 practitioners working in transition programs for youth with disabilities on the relative importance of professional competencies specific to their roles. The competency domains in the survey were identified from transition preparation programs funded by the Office of Special Education and Rehabilitation Services (OSERS). Their analysis of these personnel preparation grant projects reflected the educational practices identified for longitudinal outcome studies previously described. Survey results suggested that respondents believed that seven competency domains were critical to their professional roles, including:

- knowledge of agencies and systems change
- development and management of individualized transition plans
- working with others in the transition process
- vocational assessment and job development
- professionalism, advocacy, and legal issues
- job preparation and support
- general assessment.

Research on the Preparation of Beginning Teachers

While researchers and teacher educators have acknowledged that beginning teachers require unique knowledge and skills in the area of transition (Izzo, Johnson, Levitz, & Aaron, 1998; Kohler, 1998; Williams & O'Leary, 2001), there is a paucity of research examining how they can be prepared to use these practices. Most published reports on this issue have described elements of undergraduate and graduate preservice programs (e.g., Barnes & Bullock, 1995; Barnes, Bullock, & Currin, 1997; Flexer, Simmons, & Tankersley, 1997). These programs share a number of elements, including interdisciplinary preparation for special educators, vocational educators, and rehabilitation counselors; didactic course work focused on educational practices associated with improved post-school outcomes for students with severe disabilities; and field experiences in designing and implementing recommended transition practices with adolescents and young adults with disabilities. However, no studies have specifically examined the relative effectiveness of these strategies or the various preparation models.

Potential Application of Current Assessment/Evaluation Models

One of the few models for determining teacher competence in transition is the performance-based standards model developed by the CEC (2001). CEC standards for beginning teachers in the area of transition are imbedded within the knowledge and skills base for the common core and individual areas of specialization (e.g., learning disabilities, emotional disturbance, mental retardation). CEC has also developed a set of standards for a *transition specialist* that goes beyond the core and specialization areas. Standards are organized according to what the CEC describes as *validated* knowledge and skills. The validation procedure is based on *expert* opinion from surveys within the field (i.e., state leadership, university personnel, school district leadership and practicing teachers) to determine whether a specific knowledge or skill is consistent with current practice.

The CEC common core performance standards are cross-age (K-12), and the only specific reference to transition knowledge and skills is found in Standards 3 and 4. Standard 3 references the need for teacher candidates to understand the impact of a learner's abilities, attitudes, interests, and values on career development. Standard 4 requires that beginning teachers use strategies to promote successful transitions for individuals with exceptional learning needs (ELN). However, the term *successful transitions* is broadly defined and focuses on cross-age transition periods (e.g., elementary to middle school, middle to high school, school to adult life.)

CEC specialization standards are also cross-age, and any reference to transition knowledge and skills is highly variable and dependent on the specialization. For example, in the area of learning disabilities, there are no specific knowledge and skills in transition practices; however, there are three references to transition in accessing the general curriculum standards. Standard 4 requires that beginning teachers know the resources and techniques used to transition individuals with disabilities into and out of school and post-school environments. Standard 7 requires knowledge of model career, vocational, and transition programs for individuals with disabilities. Standard 10 requires teachers to have the skills necessary to collaborate with team members to plan transition to adulthood that encourages full community participation.

Clearly, CEC views competence in effective transition practices as a specialty area that goes beyond the knowledge and skills of the beginning teacher. CEC performance standards for the transition specialist, which are consistent with the research literature, focus heavily on transition law and policy, development and implementation of transition plans, collaboration among school and adult service agencies, and employment preparation.

A second source for determining teacher competence in transition is the INTASC draft of *Model Standards for Licensing General and Special Education Teachers of Students with Disabilities: A Resource for State Dialogue* (2001). Using the INTASC 10 core principles as a base, a committee of special and general educators developed a guide to assist states in developing and refining their standards and practices. Input was sought from education experts on the implications for the use of the 10 core principles for meeting the needs of students with disabilities. From this set of implications, INTASC developed key knowledge, skills, and dispositions expected of beginning general and special education teachers.

INTASC requires that beginning general and special education teachers have a base of knowledge and skills in the area of transition. To implement this requirement, teacher competencies are imbedded within the 10 core principles. In Principle 1, teachers are required to recognize that some students will need an expanded curriculum in areas such as employment-related instruction. These teachers should also know about federal disability legislation, including IDEA requirements for the development of transition plans. In addition, special education teachers must know how to provide transition support from secondary school settings to post-secondary and work settings as well as promote participation in all aspects of community life. Principle 2 emphasizes the need for special education teachers to understand learning from a lifespan perspective, working with the family to broaden expectations of each student's ability to function independently as an adult. Principle 3 requires that special education teachers be able to work closely with families from diverse cultures to ensure that transition planning does not conflict with established values and beliefs. Principle 4 requires special education to identify instructional strategies that have been successful across different learning environments, including home, workplace, and community. Finally, Principle 8 emphasizes the use of assessment procedures that document student learning across multiple environments, including work and community settings.

Future research on teacher quality as it relates to transition could include measures based on CEC and INTASC standards, which meet the criteria discussed earlier (**Table 2**) for *credibility* (stakeholders' validation) and *practicality* (costs and training requirements). However, they fail to meet criteria related to *utility* (used by other researchers); *generality* (full range of contexts related to role assignments); *comprehensiveness* (richness and breadth); or *soundness* (reliability and validity).

BEGINNING TEACHERS SERVING CULTURALLY DIVERSE AND ENGLISH LANGUAGE LEARNERS

The Knowledge Base for Beginning Teachers

There is a significant literature on preparing preservice teachers for educating culturally and linguistically diverse (CLD) students. The bulk of this work has focused on the design and implementation of multicultural teacher education for elementary and secondary teachers (Bennett, 2001; Dilworth, 1992; Fox & Gay, 1995; Grant, 1994; Zeichner, 1996; Zeichner, Grant, Gay, Gillette, Valli, & Villegas, 1998). Multicultural education includes the skills of intercultural understanding and interaction, integrating cultural content into the school subjects, and building positive attitudes (Birkel, 2000). Researchers describe the characteristics of successful multicultural teaching as *culturally appropriate, culturally competent, culturally congruent, culturally compatible, or culturally responsive* (cf. Bennett, 2001, p. 186). Culturally relevant pedagogy focuses on reversing the underachievement of students of color and on teachers' abilities to communicate and interact with their culturally diverse learners (CDLs) and English language learners (ELLs) and families (Delpit, 1995; Harry, Kalyanpur, & Day, 1999). It refers to the type of educator or clinician who can educate students from many cultures, be respectful of differences in cultures, traditions, and styles; and reach the students while holding them accountable (R. Gersten, personal communication, January 25, 2003). An effective multicultural teacher education program includes competencies, such as:

- understanding ethnic and cultural diversity, how cultural characteristics impact student learning, and how different cultures intersect with the mainstream school culture
- developing an understanding and appreciation of one's own culture to facilitate the understanding and respect for other diverse populations
- understanding theories of culturally and linguistically responsive instruction
- acquiring skills in authentic assessment and multiple assessment strategies for culturally diverse learners and second-language learners (Beckum, 1992; Fox & Gay, 1995; Gay, 2000; Grant, 1994)
- acquiring effective instructional methods, especially for students who are struggling with language and language-related skills that lead to literacy (August & Hakuta, 1997; Reyes, 1992).

The competencies required for preservice teachers should not only be presented in courses on history and studies of various ethnic groups. Instead, the preparation program should involve a social reconstructionist approach that emphasizes the social and political implications of teachers' actions and their contribution to greater equality and justice in schools and society (Zeichner, 1996). Thus, teacher education should promote a teacher's disposition toward opposing inequity, not just celebrating diversity. Teachers would confront forms of oppression and domination such as racism, sexism, classism, and abelism (Ladson-Billings, 2001).

A smaller portion of the multicultural education literature has focused on preparing teachers to work specifically with ELLs. Although teaching ELLs has traditionally been the role of English for Speakers of Other Languages (ESOL) teachers or bilingual specialists, general and special education teachers are increasingly serving linguistically diverse students in their classrooms. These educators must be able to teach students to speak English while at the same time including them in content-area instruction in reading, mathematics, science, social studies, and the other subjects that make up the general education curriculum (cf. Gersten & Baker, 2000; Zehler, 1994). Furthermore, ELLs must be aided in developing proficiency in listening, speaking, reading, and writing with regard to both basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP) skills (Cummins, 1984).

The competencies for teaching ELLs have most often been defined by state certification and licensure requirements as well as by national organizations such as the National Association of Bilingual Education (NABE) or TESOL. Interestingly, more and more states are requiring that teacher preparation programs prepare all teachers to serve diverse students, including ELLs (Miller, Strosnider, & Dooley, 2002). For example, under a consent decree, Florida requires that all P-12 and special education graduates of state universities also possess a full English for Speakers of Other Languages (ESOL) endorsement (Florida Department of Education, 2001):

> Further changes to statutes and State Board of Education Rules, however, now require preservice teacher education programs in the state (Section 240.529, F.S., and State Board of Education Rule 6A-5.066, F.A.C) to prepare their teacher education students to teach LEP students consistent with the requirements in the ESOL Consent Decree. (p. 1)

For Florida's preservice teachers, the ESOL endorsement is the equivalent of five additional courses in the curriculum or two courses with infusion of competencies in other areas of the curricula. These competencies are over and beyond knowledge included in previously taken preservice courses. Preservice teachers are expected to develop the ability to analyze student language and develop appropriate instructional strategies for listening comprehension, oral communication, reading, and writing through this newly gained knowledge of phonology, morphology, syntax, semantics, and discourse.

In states like Florida, California, and Texas, special education teachers are required to meet the performance-based standards dictated by ESOL certification or licensure, but less is known about preparing special education teachers to work with ELLs with disabilities. What do special education teachers need to know and be able to do in multicultural and bilingual education that goes beyond what is required of elementary and secondary teachers? Furthermore, how do we assess beginning teachers' competence in teaching students from diverse backgrounds?

Several books, chapters, and journal articles have focused on the need to include multicultural competencies in special education preparation programs (Obiakor, 2001; Pugach & Seidl, 1998; Rodriguez & Carrasquillo, 1997; Salend, 1998; Utley & Obiakor, 2001; Voltz, Brazil, & Scott, 2003). Some of the earliest work in this area started in the mid-1980s and early 1990s (Baca & Cervantes, 1998; Carrasquillo & Baecher, 1990; and Cummins, 1984). What has become clear over the years is that effective special education teachers must possess all the skills described for general education **and** be especially skilled in distinguishing an actual disability from the

influences of complex social, cultural, and/or language variables (Miller et al., 2002; Ortiz & Garcia, 1990; Voltz et al., 2003). Furthermore, special educators must be able to use a variety of instructional strategies that are effective for ELLs, including teaching in two languages (Rodriquez & Carrasquillo). Preservice special educators should also demonstrate skills in and a disposition for collaboration with diverse families and other professionals (e.g., ELL teachers, bilingual specialists, general educators, school psychologists, interpreters).

Burstein, Cabello, & Hamann (1993) described an infusion model for covering cultural diversity content in a special education preservice program. The general competency areas infused in the special education program included:

- cultural and social influences on students
- language acquisition and development of students from culturally diverse backgrounds
- assessment of culturally diverse students
- developing and adapting instruction for students from culturally diverse backgrounds
- evaluating and analyzing instruction in relation to culturally diverse students' learning and development
- classroom management for culturally diverse students
- working with parents, school, and community as advocate for culturally diverse students.

Some researchers believe that real progress toward preparing special educators to work with culturally, racially, ethnically, linguistically, and economically diverse learners has been slow (Obiakor, 2001; Pugach & Seidl, 1998), especially in the face of yet another national report on the disproportionate numbers of minority students in special and gifted education (Donovan & Cross, 2001). The authors of this report acknowledge that disproportionality continues to exist and recommend improving teacher quality through preservice education and professional development, in particular, preparing school psychologists and special education teachers in: (a) conducting classroom observations and assessments, (b) providing teacher support to work with struggling students or with gifted students, and (c) recognizing and working with implicit and explicit racial/ethnic stereotypes.

Research on the Preparation of Beginning Teachers

Although there is substantial literature on effective educational practices for CDLs and ELLs and on the essential multicultural competencies needed by teachers, there has been little empirical research examining the impact of multicultural teacher education on beginning teachers and the CDLs and ELLs they teach. The criteria for defining effective educational practices are based on contemporary writing and scholarship that is rarely linked to student outcomes. "It is also unclear whether many of the approaches advocated accelerate or hinder student learning and motivation" (R. Gersten, personal communication, January 25, 2003). Most research on multicultural teacher education has been conducted in general education (Bennett, 2001; Cochran-Smith, 1995; Grant

& Tate, 2001; Kennedy, 1991; Ladson-Billings, 2001; Troutman, Pankratius, & Gallavan, 1999; Zeichner, 1996). Few studies have focused on special education preservice teachers (Artiles & Trent, 1997; Obiakor, 2001; Webb-Johnson, Artiles, Trent, Jackson, & Velox, 1998). A classic illustration of research on teacher characteristics with ethnically diverse students is *The Dream Keepers: Successful Teachers of African-American Children* (Ladson-Billings, 1994). Teachers who were effective in educating African-American students: (a) were proud of teaching as a profession and had chosen to teach in low-income schools; (b) felt a strong sense of purpose and believed it was his or her responsibility to ensure the success of each student; (c) were aware of the societal conditions of discrimination and injustice and understood how this influenced the school's academic expectations for students of color; (d) avoided assimilationist approaches to teaching and wanted to prepare their students to become change agents, not just fit into mainstream society; and (e) capitalized on their students' home and community culture by creating a flexible, fluid, and collaborative learning climate where everyone learned from everyone else.

The research that has been conducted in special education and multicultural education has focused primarily on the use of attitude surveys or interviews. For example, Burstein et al., (1993) evaluated the impact of infusing 49 competencies in cultural diversity into their special education preparation program. The program evaluation involved the use of multiple cohort questionnaires and employer surveys. Preservice teachers in the program reported higher levels of knowledge and efficacy in work with diverse students, and employers rated the preservice teachers as being highly qualified to work with these students. The authors concluded that the program was effective in preparing two cohorts of beginning teachers for culturally diverse classrooms.

In a study by Dinsmore and Hess (2000), 530 preservice teachers across rural Nebraska were surveyed on the extent and perceived adequacy of multicultural education preparation in their teacher education programs. While the majority of the participants were elementary and secondary preservice teachers, 11% of the participants were special education preservice teachers. Seventy-one percent of the preservice teachers reported taking a 3-hour course in multicultural education; 22%, a 1-hour course; and 16%, additional elective course work. While most respondents (91%) felt that multicultural education preparation was important, very few students felt extremely or very adequately prepared (17%), and 77% indicated a need for more preparation. Ethnically diverse preservice teachers who had preparation and/or personal experiences interacting with culturally diverse individuals felt more adequately prepared than those who did not. The continued professional development needs given most emphasis were skill component areas, such as consultation techniques and strategies to adapt instruction with CDLs and ELLs.

Several studies have looked at the impact of multicultural education courses and field experiences on preservice elementary and special education teachers' beliefs and attitudes toward diverse students and their families. The impact of the experiences on the preservice teachers have been measured using portfolio assessments (Pleasants, Johnson, & Trent, 1998), dialogue journals (Garmon, 1998), and concept maps (Trent, Pernell, Mungai, & Chimedza, 1998; Troutman et al., 1999). Although the reflections of preservice and beginning teachers and documentation of effective practices in particular environments are informative, there is a need

to supplement these sources with performance-based assessments. These assessments should be appropriate for, and responsive to, the complexity of interactions in a variety of classroom and school contexts.

Kennedy (1991) used multiple strategies for tapping teachers' knowledge and beliefs at different points in time during teacher preparation in multicultural education (p. 59). Data collection procedures included questionnaires, interviews, responses to scenarios, and observations. Kennedy observed that collecting data on the impact of teacher education programs on what teachers think about issues of learner diversity "proved even more difficult than we had imagined on the outset" (p. 46). Not surprisingly, the most costly data measurement instruments—observations of teachers interacting with diverse children—yielded the most valid information about teachers' knowledge of teaching diverse learners. Although Kennedy's work did tap general educators' beliefs about diverse learners including disabilities, much more research is needed on how preservice preparation programs influence special education teacher's beliefs about and behaviors with CDLs and ELLs.

Potential Application of Current Assessment/Evaluation Models

Perhaps the most widely used assessment/evaluation model for determining teacher competence in multicultural/bilingual special education is a set of performance-based standards developed by the CEC. As noted previously, these standards are organized around a list of what CEC describes as validated knowledge and skills in a common core (e.g., foundations, learner characteristics, individual learning differences) and a specialization area. The new common core standards (CEC, 2001) provide extensive coverage of the knowledge and skills special educators must have in working with CDLs and ELLs with ELNs. In fact, 27 out of the 126 common core indicators (21%) address some aspect of diversity. CEC does not provide a separate *specialization area* for multicultural and/or bilingual education. Many common core indicators are repeated in the disability categories. For example, the specialization area of gifted and talented emphasizes the need for special education teachers to understand appropriate assessment and placement when referring CDLs and ELLs to gifted programs.

The match between the literature on effective educational practices for students with disabilities and the CEC performance standards presents some challenges for future research on teacher quality. While CEC has made progress in identifying standards and competencies for professional practice in cultural and linguistic diversity, conceptual and structural frameworks for preparing special educators to become culturally competent have not been developed (Voltz, Dooley, & Jefferies, 1999). In fact, most teacher preparation programs attempt to deliver the multicultural content by infusing it into existing courses with little attention to the need for specialized cultural and linguistic content or field-based experiences with diverse student populations (Utley & Obiakor, 2001).

A second source for determining beginning teacher competence in multicultural/bilingual special education is the INTASC draft of *Model Standards for Licensing General and Special Education Teachers of Students with Disabilities: A Resource for State Dialogue* (2001). Embedded within the 10 principles are indicators for both general and special teachers specifically associated with teaching students from culturally and linguistically different backgrounds.

INTASC requires that beginning general and special education teachers have a base of knowledge and skills in understanding cultural, ethnic, gender, and linguistic differences among students with disabilities. In Principle 3, teachers are to consult with ELL teachers about language patterns typical of students learning English as a second language. Special education teachers should gather information from families and communities in order to understand the families' views on disabilities. They should understand ways in which home and school cultures are compatible or in conflict. Principle 4 emphasizes the need for teachers to understand and use a variety of culturally and linguistically relevant instructional strategies that encourage student development of critical thinking, problem-solving, and performance skills. General educators should know how to modify and adapt the general curriculum to accommodate individual student needs.

In Principle 6, all teachers should be able to collaborate with language specialists, including ELL teachers, English language development teachers, bilingual teachers, and interpreters. In addition to understanding how linguistic background impacts language acquisition, special education teachers specifically are expected to collaborate with other language specialists to assist the general education teacher in implementing strategies and accommodations for students. In Principle 7, beginning special education teachers are expected to use interpreters when necessary to assure family involvement at IEP meetings. Principle 8 provides indicators to assure that special education teachers are aware and guard against over- and under-identification of disabilities based on cultural, ethnic, gender, and linguistic diversity. Principles 9 and 10 emphasize the need for beginning general and special education teachers to reflect on the potential interaction between a student's cultural experiences and their disability. Additionally, both general and special education teachers should understand factors that challenge teamwork, including the diverse backgrounds, beliefs, knowledge, and needs of team participants.

It is important to note that INTASC, unlike CEC, mentions the roles of the ELL teacher and bilingual specialist as sources of professional help for special education teachers (p. 6). Clearly, to coordinate and support services for meeting the educational needs of CDLs and ELLs, special educators must collaborate with ELL or bilingual education teachers; however, there are challenges to this collaboration (Salend, Dorney, & Mazo, 1997).

A third potential source for determining teacher competence in cultural and linguistic diversity is the Praxis III, which has been heavily based on culturally responsive teaching. Multiple areas of the Praxis III specifically look at a teacher's ways of interacting with and accommodating a diverse student's needs. Additionally, through an interview process, Praxis III asks teachers to reflect on their dispositions related to equity and values of diverse learners (Dwyer, 1993, 1994). Daunic (1996) pinpointed nine essential indicators that could best assess a culturally responsive teacher. **Table 3** lists and describes the nine indicators. A fourth potential source for assessing a teacher's ability to work with CDLs and ELLs is the SPeNSE survey. Several items on the best practices survey specifically ask about:

- the number of lessons that the teacher develops specifically for English language development
- whether the teacher introduces vocabulary prior to a lesson
- the amount of extended discourse the teacher uses in a lesson

- the teacher's ability to use a student's native language to teach English language skills
- the extent to which the teacher uses a student's native language to teach a concept or make a clarification about content.

After analysis of these items, there was concern that these items may only measure certain aspects of teacher best practices and not best practices as a whole.

Table 3. Nine Essential Indicators That Could Assess a Culturally Responsive Teacher

INDICATOR	DESCRIPTION
A1: Becoming familiar with relevant aspects of students' background knowledge/experience.	Ability to demonstrate: (a) knowledge of sources for information about students' background knowledge/experiences (b) an understanding of students' skills/background experiences (c) an understanding of why this knowledge is important.
A4: Creating or selecting teaching methods, learning activities, and instructional materials or other resources appropriate to the students and aligned with lesson goals.	Ability to select carefully methods and resources that reflect the common and the unique experiences of the students and to provide a rationale for their use.
B1: Creating a climate that promotes fairness.	Ability to treat students fairly, help them feel equally valued, and provide them equitable access to learning. Includes avoidance of stereotyped views and encouragement of fairness among students
B2: Establishing and maintaining rapport with students.	A teacher's ability to show concern for students in ways appropriate to their individual characteristics. Generally, to relate positively to students.
B3: Communicating challenging learning expectations to each student.	How well a teacher is able to communicate to each student that he/she is capable of meaningful achievement. Includes ability to encourage students to meet high standards that are within reach
C2: Making content comprehensible to students.	Ability to communicate content clearly and accurately to the students in the class. Includes structuring the lesson so that its progression makes sense conceptually.
C3: Encouraging students to extend their thinking.	A teacher's ability to use content as a springboard to independent, creative, or critical thinking or to design activities that specifically encourage such thinking.
C4: Monitoring students' understanding of content through a variety of means, providing feedback to students to assist learning, and adjusting learning activities as the situation demands.	Includes sensitivity to verbal and nonverbal cues from students as to their understanding of what is expected and ability to recognize teachable moments as they occur.
D4: Communicating with parents or guardians about student learning.	Knowledge of various means of communication with parents and the appropriate use of those means, within realistic limits, to foster school success for students.

[Dwyer, C. (1993). Teaching and diversity: Meeting the challenges for innovative teacher assessments. *Journal of Teacher Education, 44*, 119-129.]

A fifth potential source for evaluating a teacher's ability to work with CDLs & ELLs is the English-Language Learner Classroom Observation Instrument (Haager et al., 2003). This instrument was designed as a research tool for the evaluation of beginning reading instruction and not as a measure of comprehensive teacher quality. It has correlated reasonably well with the reading growth of first-grade students (Haager et al.), and includes a section specifically focusing on how teachers integrate English language development into reading instruction. The subscales of the English-Language Learner Classroom Observation Instrument are: (a) explicit teaching/art of teaching, (b) instruction geared toward low performers, (c) sheltered English techniques, (d) interactive teaching, (e) vocabulary development, and (f) phonemic awareness and decoding.

The measures and models that do not provide support for assessing beginning teacher quality in working with CDLs and ELLs are the SASS instrument and process-product models. The SASS measures do not specifically ask teachers about their teaching practices with CDLs and ELLs. Similarly, no specific research has been conducted on beginning special education teacher's knowledge or skills in teaching CDLs and ELLs using measures based on research.

Clearly, research on teacher quality in working with CDLs and ELLs could include the measures or models outlined by CEC, INTASC, the English-Language Learner Classroom Observation Instrument, PRAXIS III, and SPeNSE. For assessing teacher quality with CDLs and ELLs as special populations, the five models or measures meet the criteria discussed earlier (see **Table 1**) for *generality* by tapping competencies related to teaching CDLs and ELLs. CEC, INTASC, and the English-Language Learner Classroom Observation Instrument have a fair number of competencies related to CDLs and ELLs and appear to satisfy the criteria for *comprehensiveness* (richness and breadth) adequately. Of all the measures or models, PRAXIS III meets the criteria for *credibility* (stakeholders' validation) based on its rich theoretical background in culturally responsive pedagogy and for *soundness* (reliability and validity) based on its reliable and valid measurement of teacher effectiveness. The English-Language Learner Classroom Observation Instrument would also meet the criteria for *soundness* and is the only measure that has been used for research on teacher effectiveness and student outcomes with culturally and linguistically diverse populations. It does support the criteria for *utility* (used by other researchers) because of its focus on reading; however, it does not have *utility* for overall teacher quality. Because of its reliance on self-report and survey input, SPeNSE meets the criteria on *practicality* (costs and training requirements).

In order to examine the impact of teacher preparation in diversity on preservice teachers, researchers must use multiple ways of tapping preservice teachers' knowledge and beliefs. In Kennedy's framework (1999), the measures we consider to be first-level are the English-Language Learner Classroom Observation Instrument, PRAXIS III, and third-level SPeNSE approximations. A combination of survey items from SPeNSE, classroom observations on Praxis III, the English-Language Learner Classroom Observation Instrument, and questionnaires on teachers' knowledge and beliefs from the CEC and INTASC standards could yield rich information on what beginning teachers understand and believe about diverse students.

SUMMARY AND RECOMMENDATIONS

Teacher quality means different things to different groups. Moreover, these groups use models and measures of teacher quality differently based on the purposes each may have for understanding and using the concepts. On one hand, a researcher may be willing to use measures that take time and are more difficult to administer because of an interest in deeply understanding many dimensions of teacher quality. On the other hand, a policy maker may want to acquire information quickly and efficiently and call on measures that will accomplish this purpose. For some, this could even mean equating beginning teacher quality with whether the teacher receives state certification.

Even within the community of researchers who study teacher quality, there is no single definition or measure of the concept for beginning or experienced teachers, either in general education or in special education. This point is made clear by our reviews of the literature in earlier sections of this paper. Indeed, the influences on teacher quality are many, as illustrated in **Figure 1.**

As inquiry into teaching and teacher education has grown and matured, both in general education and special education, models and measures of teacher quality have expanded similarly. In short, the greater the knowledge and understanding of teaching and teacher education in either field, the more choices there are of models and measures of teacher quality.

In this paper, we identified classes of models and measures, presented examples of each, considered research genres for which each class would be appropriate, and discussed their merits using evaluation criteria. These analyses, summarized in **Table 1**, lead to a single, irrefutable conclusion: The superiority of one model over another depends on the purpose and context of its use. For most purposes, the best approach would be to pick and choose from several models. In special education, there is a great need to accelerate research on beginning teacher quality by drawing on models and measures set forth in this paper.

As a guide to this work, we conclude with the following recommendations:

Use multiple research traditions in conducting beginning teacher quality research. With the exception of process-product research, special education has produced only a handful of research studies drawn from other research traditions. This fact alone calls out to special educators to expand research on teacher quality to include programs of research focused on understanding the complexity of teachers' actions and interactions with students and contexts.

Conduct beginning teacher quality research in all areas of special education. We noted previously that most research on teaching in special education has focused on teachers of high-incidence disability groups. In addition to expanding research in this area, we strongly recommend the initiation and acceleration of research programs on beginning teacher quality for teachers of students with severe disabilities, teachers in transition programs, and teachers serving culturally diverse and English language learners. We believe these final sections of the paper set the stage for research on beginning teacher quality in these areas.

Get the attention of policy makers by producing compelling research findings and by linking measures of teacher quality with student outcomes. Because policy makers often seek measures of teacher quality as quick and easy sound bites for public consumption, we offer two major recommendations to special education researchers. First, it is critical that the special education research community take research on teacher quality more seriously to assure that we accumulate findings that will persuade policy makers to avoid simple solutions to complex problems. In short, we must educate policy makers about the complexity of teaching and learning. Second, and equally critical, researchers would be well advised to use validated measures of beginning teacher quality that are known to relate to student outcomes.

Use caution in developing and using measures based on teaching standards. We noted earlier in our paper that assessments have not been developed, or are in very early stages of development, for some of the teaching standards (e.g., CEC, INTASC) currently in use. We also noted that we found only one reported study that used standards as an outcome measure in teacher education research. Consequently, professional groups would be well advised to follow the lead of the NBPTS and develop research programs to validate their assessment processes. A second equally important consideration in transforming standards into measures of beginning teacher quality is whether these measures discriminate among beginning teachers on their development of knowledge and skills. For example, some beginning teachers may only understand **what** the direct instruction approach is, along with **how** to implement the approach, while other beginning teachers have developed to the level of understanding **when** and **why** the approach would be used in particular settings. These differences in levels of expertise require differences in the way assessments are constructed and conducted. Without these considerations, researchers may tend to underestimate the task of assessing teacher quality.

Seek to publish special education research findings in journals outside of special education. As special educators select journals or other publication outlets for their research on beginning teacher quality, we urge them to consider journals outside of special education so that this research is scrutinized by peers in other fields. Moreover, the potential to influence others is greater if special education research reaches beyond colleagues in our own field.

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APPENDIX
PROPOSED TASH RESOLUTION ON TEACHER EDUCATION[1]

Statement of Purpose

University programs bear an important share of the responsibility for ensuring that the educational needs of students with severe disabilities are met in general education settings with their non-disabled peers. The purpose of this resolution is to establish guidelines for the preparation of teachers, both those seeking initial certification and those seeking advanced degrees.

Rationale

TASH's *Resolution on Education for Students with Disabilities* is grounded in principles of equity and social justice for all. It clearly states the educational and moral imperative that students with disabilities belong with their non-disabled same age peers in general education classrooms, and that they receive the supports and services necessary to benefit from their education in the general education setting. In conjunction with this, it is TASH's position that teacher education programs must be inclusive and collaborative, so that (a) special and general educators are prepared to meet the needs of all students through collaboration and effective teaching, and (b) the expertise required to meet the individualized needs of each student is easily accessible on education teams. TASH's position is based on the beliefs that teacher education programs should reflect research and ongoing reflection and discourse about effective practices both in educational services for students with disabilities and in teacher preparation. Teacher education programs must prepare teachers at two levels--entry level teachers with a broad base of knowledge in general and special education, and advanced level specialists with extensive expertise in either general education (e.g., reading methods, math instruction) or special education (e.g., modifications for students with mild or severe disabilities).

In relation in preparing teachers to meet the needs of students with severe disabilities, therefore, at least two types of efforts are warranted. First, entry-level programs should provide all teachers a solid foundation in general education curriculum, instructional methods, and assessment, as well as basic expertise related to serving students with severe disabilities in general education settings. To this end, all teachers need to be prepared to:

- teach a diverse population of learners within heterogeneous groups, including: (a) those with a range of abilities and needs; (b) those from a variety of racial, ethnic, cultural, linguistic, and economic backgrounds; and (c) those from a variety of family configurations and support systems
- collaborate with families and other individuals who provide personal supports, in order to strengthen their role and ensure that they have meaningful opportunities to participate in the education of children at school, at home, and in the community

[1] Reprinted from TASH (2002, January). TASH resolution of teacher education. Retrieved August 9, 2003, from http://www.tash.org/resolutions/res02teachered.htm.

- collaborate with school and non-school personnel (e.g., general and special educators; related services providers; support personnel; administrators; adult services providers; community agency personnel) to plan and provide individualized services
- gather assessment and other information relative to individual choices, growth, and progress, in order to ensure that each student's meaningful involvement within all aspects of community life is used as a foundation for making decisions related to curriculum and instruction
- employ a collaborative educational planning process (e.g., understanding of factors that influence school change; self-determination; person-centered planning) with the student and his/her family that results in increased voice, independence, interdependence, and control over the selection of valued educational outcomes
- design and use meaningful learner-centered curriculum and effective and non-intrusive instructional methods
- provide an individually appropriate education for all school-aged children and youth in the context of the general education curriculum, within general education activities, in general education settings, using (a) curricular and instructional modifications and accommodations, (b) assistive technology, (c) augmentative and alternative communication systems, and (d) supports provided in the least intrusive manner
- provide an individually appropriate education for all young adults who are in transition into adult life so that they can live and work in the community, including outcomes-oriented preparation for employment, community-based instruction, and supported living
- train, supervise, and evaluate non-professional members of education teams (e.g., paraeducators, peer tutors, volunteers)
- build classroom and school community, so that all children: (a) are valued members who are accepted and respected as individuals with differing voices, strengths, abilities, and contributions; and (b) learn to deal with controversy and conflict in creative and constructive ways.

Second, advanced level teacher education programs should provide opportunities for in-depth study of and specialization in services in general education settings for students with severe disabilities that reflect current effective practices and theory as grounded in careful inquiry and analysis. Advanced level programs should include:

- blending of research and theory into effective practices within all aspects of individuals' environments (e.g., school, home, community, workplace), emphasizing participation in general education curriculum, activities, and settings
- specialized knowledge required to meet the educational needs of students with severe disabilities (e.g., assisted eating and positioning; assistive technology; augmentative and alternative communication)

- graduate students' utilization of current effective practices (e.g., general education curriculum and instruction modifications; instructional strategies; collaborative teaming strategies; natural support networks; positive behavioral supports; transition services; life-long learning and self-advocacy) with students who demonstrate a wide variety of abilities and needs (e.g., cognitive, emotional, sensory) across age ranges
- preparation of professionals who engage in reflection and life-long learning in relation to educational services for students with severe disabilities within the school community
- preparation of teachers to assume leadership roles within educational programs (e.g., the cycle of program evaluation, development, implementation, evaluation, etc.)
- preparation of teachers who employ strategies that teach students with disabilities to be self-advocates and community leaders.

In relation to effective practices in teacher education activities, programs must reflect research-supported practices and innovations that result in effective teachers who are reflective life-long learners. Such practices include:

- the use of authentic portfolio-based activities that support the development of teachers who collaboratively team and problem-solve with others, in order to provide effective and personally meaningful services for students with severe disabilities in inclusive settings
- a close link between content courses and field-based experiences, so that field-based experiences reflect the use of content as it is addressed in courses
- a coordinated set of courses, activities, and field-based experiences, accompanied by on-going mentoring relationships with 1-2 program faculty, that facilitate the continuous development of professionals from an emerging, to a proficient, to a mastery level of expertise (instead of a set of isolated courses or experiences)
- ongoing collaborative support of new teachers through the induction process by both program faculty and school district personnel.

Therefore, be it resolved, that TASH, an international advocacy association of people with disabilities, their family members, other advocates and people who work in the disability field, affirm that teacher preparation programs must prepare both generalists and specialists to provide services to students with disabilities that (a) are situated in general education settings for school-aged students and in natural community environments for young adults; (b) focus on access to, and the acquisition of, skills that are age- and/or grade-related; and (c) are based on knowledge of what constitutes effective educational practices.