![NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY]

Communication Framework for Measuring Teacher Quality and Effectiveness:

Bringing Coherence to the Conversation

LEARNING POINT Associates®

Education Commission of the States

ETS

VANDERBILT

Written by
Jane G. Coggshall, Ph.D.

1

Contents

Introduction

Teacher effectiveness is one of many dimensions of teacher quality, and some argue that it is the most crucial dimension. The appropriate definition and measurement of teacher effectiveness are the subject of an important ongoing national conversation—as well as the source of some contention and a fair amount of confusion.

To promote effective dialogue about the measurement of teacher quality and effectiveness, the National Comprehensive Center for Teacher Quality (NCCTQ) developed this communication framework. Its purpose is to facilitate communication about policies regarding teacher effectiveness by helping to build a shared understanding of the terminology used in the discussion. By presenting a brief overview of teacher quality and the various instruments that can be used to collect evidence of its many facets, the framework intends to illuminate both the possibilities and the limitations of focusing on teacher effectiveness (as opposed to other dimensions of teacher quality) in education policy and practice.

The communication framework is offered at a critical time. The effectiveness of a child's teacher is increasingly recognized as the most important school-based factor contributing to student learning outcomes. Myriad proposals, programs, policies, and practices aiming to improve the nation's teaching corps are being adopted at an astounding pace. Determining whether these approaches are successful or not will depend on how fairly and accurately teacher quality and effectiveness can be measured.

Both a knowledge resource and communication tool, the framework was developed with education leaders in mind—whether they are at the local, state, or national levels. State education agency (SEA) personnel should find it useful in their work with districts in implementing policies to certify, hire, assign, retain, support, and evaluate effective teachers. In addition, the framework can be used as a quick guide for late entrants into the conversation.

In this framework, the term *teacher quality* is broadly used as a catch-all term that encompasses the many aspects of what makes teachers "good" at what they do. It includes concepts such as teacher effectiveness but also teacher qualifications, expertise, capacity, character, performance, and success. The term *teacher effectiveness*, on the other hand, is more narrowly defined here, with a focus on teachers' contributions to student outcomes, but it too can be productively measured in multiple ways.

This framework consists of the following four components:

- **Communication Planning.** What are some best practices for communicating effectively about teacher quality and effectiveness?

- **Goals Clarification.** Why measure teacher quality and effectiveness in the first place? What are the parameters of the discussion?

- **Teacher Quality Terms.** What do teacher quality and effectiveness mean to your organization? To other organizations?

- **Measurement Tools and Resources.** How can teacher quality and effectiveness be measured? What are the details of the discussion?

The communication framework is followed by definitions of key measurement terms (Appendix A), three communication tools (Appendix B), resources that provide information on standards for teaching quality (Appendix C), and additional resources from NCCTQ (Appendix D).

Components of the Communication Framework

Component 1:
Communication Planning

The measurement of teacher quality and effectiveness can be a sticky topic of conversation. Not only are there a multiplicity of perspectives on what makes teachers "good," there are deeply held personal and professional beliefs and values surrounding what "good" is and how to gauge it in a meaningful way. Add high-stakes accountability into the mix, and the chances for miscommunication and unproductive argument abound.

It is therefore helpful to have a plan. Every good plan begins with some thought regarding where, upon following the plan, one wants to go. Component 1 of the communication framework is designed to assist school leaders and other policymakers to identify their communication goals. It then describes some essential aspects of planning to ease communication of this important issue.

Goal Identification

Following are some of the communication goals that school leaders may have, beginning with one of the goals of this communication framework:

- To help build consensus across the education system on what teacher quality is, how it ought to be measured and supported, and for what purposes.

- To galvanize support for portfolio assessment or value-added models as components of a pay-for-performance program.

- To inform state legislators about the use of particular teacher-evaluation tools for both summative and formative purposes as well as the need for continued funding for such tools.

- To develop a set of locally accepted metrics of teacher effectiveness that principals can use when making decisions relating to teacher tenure.

- To help information technology staff members at the state level understand the kinds of data they need to collect to enable effective teacher-workforce development.

- To convince governors to allocate funds for the development of state and district professional development plans.

- To persuade other states in the region to develop a regionally recognized credential to ease the interstate mobility of effective teachers.

Notice that most of these communication goals are policy goals as well. Just about any endeavor that requires collective action, especially in a system as large and as loosely coupled as the American education system, requires effective and nearly constant communication. Indeed, systems have failed utterly without such communication (Weick, 2001).

3

Unfortunately, like the child's game of "telephone," policy messages are rarely received as they are intended (Spillane, 2004) and a great deal of learning at all levels needs to take place before any complex and substantive change can be made (Cohen & Hill, 1998; Kimmelman, 2006). Strategic communication planning can facilitate the achievement of communication and policy goals.

Essential Aspects of Communication Planning

Real improvement in teacher quality policy requires good communication, which begins with the following: (1) concerted stakeholder involvement, (2) careful selection of communication channels to aid relationship building, and (3) a significant investment in the conduct and dissemination of rigorous and thoughtful educational research on teacher quality.

Stakeholder Involvement. Involving stakeholders in the development of measures of teacher quality is necessary not only to account for their perspectives (Te'eni, 2001) but also to ensure the credibility of the final set of measurement tools used (Blanton, Sindelar, Correa, Hardman, McDonnell, & Kuhel, 2003).

Including teachers early and often in this conversation is critically important. Teachers in today's classrooms bring a deepened understanding of the contexts in which teacher quality measurement needs to take place and so are able to inform the conversation as no one else can. Moreover, if teachers do not find the measurement of teacher quality and/or effectiveness meaningful or legitimate, they may decide to "game the system" or opt out of it entirely. The validity of any metric of teacher quality developed out of these conversations therefore rests on teachers' thoughtful participation.

In addition to teachers and their associated groups (including unions, curriculum associations, and teacher leader networks), other individuals and organizations should be invited into the conversation at various stages. A plethora of stakeholders are interested in teacher quality— for example, institutions of higher education, other preparation program providers, the media, parents, boards of education, local school leaders, district human resources officials, credentialing commissions, think tanks, policy shops, lobbyists, legislators on education committees, regulators, researchers, and governors, to name a few. These stakeholders can act as key resources for information and communication; but if their buy-in is not gained, they can scuttle the process. Luckily, many channels of communication can be engaged to bring these stakeholders to the table.

Identification of Communication Channels. It is easier to communicate and collaborate with people who are known personally. One might not think twice about calling up a colleague or close acquaintance to ask a quick question or to invite her to speak at a conference. One also might feel more comfortable challenging a colleague's perspective and helping him to understand a different one. In an enterprise as large as teacher quality policy and with a multiplicity of diverse stakeholders, such personal relationships are both necessary and cumbersome. Fortunately, one can choose from a number of communication tools for building those relationships as well as sharing information impersonally yet effectively. Such conversations can take place through any of the following means:

4

Meetings

- Conferences, conventions, or summits
- Town hall meetings
- Issue forums
- Workshops or symposia
- Board meetings
- Faculty meetings
- Conference calls
- Press release parties

Print Media

- Policy briefs
- Memos or newsletters
- Technical reports
- Press releases, op-eds

Broadcast Media

- Public radio
- Local or national television news
- Telephone drives

Internet

- E-mail (individual or electronic mailing lists)
- Webcasts or weblogs
- Wiki Web interfaces

Face-to-face options for communication seem to have the best potential for transmitting rich information and resolving ambiguity (Barry & Crant, 2000). Face-to-face communication also is more powerful in terms of persuasion. Nevertheless, when complex information is presented in written form, comprehension tends to be higher. The appropriate medium thus depends on the purpose of the communication—whether it is to persuade or to promote understanding. Using a combination of both written and oral communication through a variety of communication channels is likely to have the most potential for success, no matter the purpose (Hoy & Miskel, 2008).

Research on Teacher Quality. Once everyone is talking, virtually or otherwise, conversations often yield more questions than they answer. The resolution of such questions often can be gained only through a rigorous examination of the evidence. Comprehensive data collection systems—with links between teacher data and student data, and individuals trained to interpret the data in a reliable way—are a necessary investment. Such systems are costly but vital, and educators may need to contend with carryovers from older systems. The design of such systems may be complicated by the lack of agreement on what teacher and student data are important to collect. Until consensus is reached on how to measure teacher quality, however, more data are probably better than less, so participants in the conversation can have some data from which to speak. Data can provide the warrant for the message and touchstones for productive conversations.

Component 2: Goal Clarification

Effective communication about the measurement of teacher quality and effectiveness begins with a clear understanding of the goals and purposes toward which the measurement will be applied. Clarity on the goals of the measurements might help to reduce or eliminate static in the lines of communication. Table 1 provides a list of potential goals for the measurement of teacher quality as well as relevant policy questions.

Table 1. Policy Questions Relating to Potential Uses of Teacher Quality Measurement

Potential Goals of Measurement	Relevant Policy Questions
Federal monitoring for state accountability	• Are high-quality teachers equitably distributed to all students in each state?
State and district monitoring for school accountability	• Are high-quality teachers equitably distributed to all students throughout the district? • Are teachers provided effective professional contexts (such as common planning time, appropriate class sizes and student loads, and professional learning opportunities) that improve teacher quality?
State monitoring for approval and accountability of teacher preparation programs	• Are preparation programs producing high-quality beginning teachers?
District and school hiring	• Are high-quality teachers being hired?
Teacher assignment	• Are high-quality matches between teacher and classroom (such as grade level, subject matter, and course difficulty) made consistently?
State or district monitoring of induction programs	• Are state, district, or school induction programs effectively improving the quality of beginning teachers?
State or district monitoring of professional development programs/accountability	• Are professional development programs effectively improving the quality of teachers?
Program improvement	• How can teacher preparation, induction, or professional development programs be improved so they produce better outcomes in terms of teacher quality?
Teacher accountability	• Are high-quality teachers supported and selectively retained? • Are low-quality teachers identified and given targeted support, or are they dismissed or counseled out of the profession? • Should teachers be given differential compensation based on quality?
Teacher support	• Are formative assessments of teacher quality being used properly for the improvement of teacher quality?

These goals should drive the conversation because each goal has different measurement implications. For example, using a metric of teacher effectiveness may make sense in terms of performance monitoring for the district or for the professional development program; but this metric would not be useful for hiring beginning teachers, who likely have a limited track record of effectiveness.

The first step in goal clarification is determining which policy question regarding teacher quality is most relevant to one's organization—whether school, district, or SEA. Communication Tool 1, located in Appendix B, will help guide these early conversations.

The next step is to discuss those dimensions of quality that are valued within one's organization

and among the constituent and stakeholder groups. That way, consensus may be achieved on the definition of a high-quality teacher in a particular context. Such a consensus will ease communication on the best ways to collect evidence of quality, which in turn will support the successful accomplishment of the organization's agreed-upon goals.

Component 3: Teacher Quality Terms

Teacher quality is a multidimensional concept, and teacher effectiveness is just one important dimension. When individuals are talking about teacher quality or debating about how best to measure it, the conversation will be more productive if these individuals have a shared interpretation of the terms used to describe teacher quality.

Table 2 lists several dimensions of teacher quality. Although it stops short of providing a definition of these terms, it does offer a suggested frame for each dimension to help the field gain consensus on these terms. Because nearly everyone engaged in the conversation about teacher quality has a different sense of what these terms mean and how much importance to place on them, these terms are fluid. (For a brief

Table 2. Proposed Definitions of Teacher Quality Dimensions

Teacher Quality Dimension	Proposed Definitional Frame
Teacher effectiveness	In the research on teacher quality and in many policy communities, the word ***effective*** connotes some direct impact—or effect—on outcomes. In the case of teachers, this term is usually defined as the teacher's contribution to student academic achievement test scores, though it is possible to measure other valued student outcomes such as high school graduation rates; student motivation; academic efficacy beliefs; or other social, behavioral, or intellectual outcomes. Thus, ***highly effective*** teachers can be defined as those teachers who show evidence of producing high student outcomes (however defined or measured).
Teacher qualifications	***Qualified teachers*** hold credentials certifying that they have successfully completed a state-approved (often nationally accredited) teacher preparation program, have demonstrated their good character (usually through a criminal background check), and hold a bachelor's degree. Moreover, states almost always require an examination of content and pedagogy for state certification.
	Qualifications also can include certification by professional groups such as the National Board for Professional Teaching Standards, as well as experience, advanced degrees, and certification endorsements; however, such credentials are not necessary for teachers to be considered minimally qualified.
	Highly qualified teachers, as defined in the No Child Left Behind (NCLB) Act, are those who are fully certified by the state, hold a bachelor's degree, and demonstrate that they have content-area expertise in the subject(s) that they are actually teaching.

7

Teacher expertise	**Expert teachers** have a deep and broad working knowledge of the both the content of the subject matter they are teaching and the knowledge of how to teach that content. Expert teachers also have knowledge of how students learn in general as well as of a range of effective pedagogies to help all students learn. Expert teachers also are culturally competent for the context in which they teach.
Teacher capacity	Teachers with a **capacity for success** demonstrate an ability to leverage their professional context into better teaching. For example, they have been well prepared, are committed to continued learning, are reflective, are organized, demonstrate verbal ability, and are able to analyze their teaching and articulate and refine their teaching philosophies.
Teacher character	**Teachers of character** have certain traits and dispositions that are observed to be related to quality teaching: sensitivity, warmth, enthusiasm, passion, creativity, persistence, caring, commitment, self-efficacy, and genuineness.
Teacher performance	**High-performing teachers** are those whose actions are observed to meet or exceed high standards of teaching practice. High-performing teachers demonstrate the knowledge and skills to provide high-quality instruction to all their students. These teachers will likely produce high student-learning outcomes but may be unable to provide valid, reliable, or sufficient evidence of student learning outcomes.
Teacher success	The term **successful teachers** could mean teachers who are "highly effective" in producing student success (however defined) and/or "high performing," so they likely will produce student growth and success.

historical discussion, see Mitchell, Robinson, Plake, and Knowles, 2001.) These dimensions can overlap and interact in complex ways. Many researchers and policy analysts have had mixed success in attempting to link some of these dimensions—such as teacher qualifications and teacher expertise—to teacher effectiveness. (See Goe [2007] for a recent comprehensive review of this research.) Table 2 allows school leaders and others to think about how to collect evidence of quality in the absence of an observable or measurable link to student achievement outcomes.

Teasing apart these dimensions to assess one aspect of teacher quality individually may be difficult. Table 2 makes clear that much of the complexity of teacher quality may be lost if the focus is directed to only one aspect of it. Nevertheless, accomplishing the policy goals listed in Component 1 of this framework requires the development of a teacher quality index or model to assess quality.

Again, depending on the purpose of the teacher assessment—whether it is for targeting professional development, allocating performance bonuses, or making a licensure decision—different aspects of teacher quality weigh more or less heavily in the conversation. Communication Tool 2 in Appendix B may be used to guide a deeper discussion of these dimensions of quality.

Component 4:
Measurement Tools and Resources

The science of teacher quality measurement is still in its developing stages, so school leaders cannot count on finding definitive answers to all their questions in the literature. As Becker, Kennedy, and Hundersmarck (2003) point out, a serious need for rigorous debate and effective communication is paramount.

Although the field is still developing, a great deal of research evidence can inform the discussion. It is important that school leaders and policymakers use this evidence as they communicate about the measurement of teacher quality.

Table 3 indicates some ways that these dimensions of teacher quality may be measured and lists some research articles that are relevant and informative. The suggestions for tools and research articles can be considered as resources for this conversation. In most cases, these resources are not the seminal works on the topic but rather are articles—either reviews of research or original studies—that can broaden and enhance the conversation.

Table 3. Measurements and Resources for Teacher Quality Dimensions

Teacher Quality Dimension	Measurement Instruments/Indicators	Recommended Resources for Conversation
Teacher effectiveness	• Student achievement (including value-added methods, growth models) • Dropout rates • Documented student work • Student affect, engagement, persistence	Braun (2005) Fetler (1997) Rice (2003) Rowan (2004) Walsh and Tracy (2004) Wharton-McDonald, Pressley, and Hampston (1998)
Teacher qualifications	• Degrees • Coursework or transcript review • Certification or licensure requirements • Preparation program status (such as alternative, traditional, accreditation status, prestige level) • Test cut scores for certification	Goe (2007) Goldhaber and Anthony (2003) National Association for Accreditation of Teacher Education (2006) Wayne and Youngs (2003) Wilson and Floden (2003)
Teacher expertise	• Exams (including multiple-choice tests or constructed response tests of content or pedagogical knowledge, or content knowledge for teaching) • Teaching portfolios • Classroom observation • Professional development-related assessments	Atinello, Lare, and Waters (2006) Ball, Hill, and Bass (2005) Phelps and Schilling (2004)

Teacher capacity	• Teacher interviews • Qualification review • Teaching cases or classroom vignettes • Classroom observation • Intelligence testing, tests of verbal ability • Teaching philosophy statements	Aloe and Becker (2007) Haberman and Post (1998) Metzger and Wu (in press) Shulman (1992)
Teacher character	• Teacher interviews • Personal and professional references • Student surveys and interviews • Parent surveys and interviews • Classroom observations • Teaching philosophy statements • Background checks or fingerprinting	Gay (2000) Hamre and Pianta (2005) Rimm-Kaufman et al. (2002) Wentzel (2002)
Teacher performance	• Teaching portfolios • Principal/peer/specialist evaluation with structured observation protocols • California Teaching Performance Assessment (CATPA), Performance Assessment for California Teachers (PACT), Teaching Advancement Program (TAP), Connecticut Beginning Educator Support and Training (CT BEST), Danielson (2007) teaching framework, and other state and local evaluation systems • Praxis III • Teacher work samples • Video evaluation • Student surveys and interviews • Parent surveys and interviews • Teaching cases analysis • Teacher logs • *Surveys of Enacted Curriculum*	Ball and Rowan (2004) Council of Chief State School Officers and SEC Collaborative (2005) Danielson (2007) Danielson and McGreal (2000) Gordon, Kane, and Staiger (2006) Kennedy (2007) Mathers and Oliva (in press) RAND Corporation (2006) Schacter and Thum (2004)
Teacher success	• Combined measures of effectiveness and performance	Pederson, Faucher, and Eaton (1978) Pianta, Belsky, Houts, and Morrison (2007)

Note that several of the instruments/indicators in the middle column of Table 3 allow for the measurement of more than one dimension of teacher quality. Much of the research cited in the right column cuts across several dimensions as well.

Measuring teacher quality using any of these instruments requires sophisticated and comprehensive data systems targeted to particular uses. Many of these instruments require a great deal of training and a significant investment of time to examine and document evidence of quality. In addition, a great deal of validation work must occur before any of these instruments can be trusted to measure what users intend to measure. (Refer to Appendix A for a discussion of validity considerations as well as other indicators of measurement quality.)

Every measurement tool used in social science research contains some error. Often these errors stem from incorrect application, inequities in the ability to collect sufficient data, or a lack of necessary validation. Also, some people may resist the measurement and eventually figure out how to undermine it. Communication Tool 3 in Appendix B helps guide a discussion about these instruments, their promises and limitations, and their use despite their limitations.

As Tables 1, 2, and 3 make clear, measuring teacher quality as an overall concept requires the construction of a complex measurement model that incorporates many of its facets. Teacher quality is a great challenge to measurement specialists and others seeking to define and improve teacher quality, but it is a challenge that keenly needs to be met.

Conclusion: From Measurement to Improvement

This communication framework is intended to inform and help frame the many conversations about the measurement of teacher quality and effectiveness taking place today. Clearly, this work is complex and requires effective communication at all levels of the education system. No matter how teacher quality is defined and measured, the improvement of teacher quality depends on more than its measurement. Such improvement requires systems of support throughout a teacher's career continuum—from preparation though advancement—as well as a finely honed understanding of the aspects about teaching that matter for student learning.

Supporting teacher quality requires the implementation of effective professional contexts as well. These professional contexts are workplaces that have structured opportunities for teachers to learn f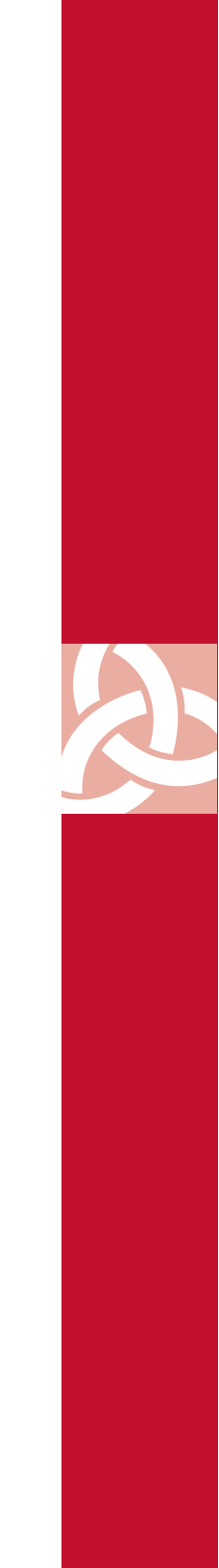rom their own teaching through formative assessment as well as through dialogue with their peers, instructional leaders, or other support providers (Ball & Cohen, 1999; Rosenholtz, 1991). Such contexts also allow teachers to teach within their subject area of expertise and to be assigned reasonable course and student loads (Johnson, 2006; Little, 1999). Effective professional contexts also are places in which teachers experience supportive and effective leadership (Leithwood, Louis, Anderson & Wahlstrom, 2004).

Creating these contexts in all schools requires reform at all levels of the education system as well as a significant investment of money, time, and human resources. Holding systems accountable for the improvement of teacher quality makes the valid, reliable, and fair measure of the quality of teachers (at least in the aggregate) all the more important. Let's talk.

References

Aloe, A. M., & Becker, B. J. (2007, April). *Teacher verbal ability and school outcomes: Where is the evidence?* Paper presented at the annual meeting of the American Educational Research Association, Chicago. Retrieved October 3, 2007, from http://www.msu.edu/~mkennedy/TQQT/Reports/AloeBecker07verbal_ability.pdf

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing* (Rev. ed.). Washington, DC: American Educational Research Association.

Atinello, J. R., Lare, D. W., & Waters, F. (2006). The value of teacher portfolios for evaluation and growth. *NASSP Bulletin, 90*(2), 132–152.

Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice*. San Francisco: Jossey-Bass.

Ball, D. L., Hill, H. C., & Bass, H. (2005, Fall). Knowing mathematics for teaching: Who knows mathematics well enough to teach third grade, and how can we decide? *American Educator*, 14–46.

Ball, D. L., & Rowan, B. (2004). Introduction: Measuring instruction. *Elementary School Journal, 105*(1), 3–10.

Barry, B., & Crant, J. M. (2000). Dyadic communication relationships in organizations: An attribution/expectancy approach. *Organization Science, 11*(6), 648–664.

Becker, B. J., Kennedy, M. M., & Hundersmark, S. (2003, April). *Communities of scholars, research, and debates about teacher quality*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Blanton, L., Sindelar, P. T., Correa, V., Hardman, M., McDonnell, J., & Kuhel, K. (2003). *Conceptions of beginning teacher quality: Models for conducting research*. Gainsville, FL: Center on Personnel Studies in Special Education.

Braun, H. I. (2005). *Using student progress to evaluate teachers: A primer on value-added models*. Princeton, NJ: Educational Testing Service.

Cohen, D. K., & Hill, H. C. (1998). *Instructional policy and classroom performance: The mathematics reform in California* (CPRE Research Report No. RR-39). Philadelphia: Consortium for Policy Research in Education.

Council of Chief State School Officers & SEC Collaborative. (2005). *Surveys of enacted curriculum: A guide for SEC collaborative state and local coordinators*. Washington, DC: Council of Chief State School Officers. Retrieved October 3, 2007, from http://www.secsupport.org/pdf/SECGuideFinal518.pdf

Danielson, C. (2007). *Enhancing professional practice: A framework for teaching* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Danielson, C., & McGreal, T. L. (2000). *Teacher evaluation to enhance professional practice*. Princeton, NJ: Educational Testing Service.

Fetler, M. (1997). Staffing up and dropping out: Unintended consequences of high demand for teachers. *Education Policy Analysis Archives, 5*(16), 1–24.

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York: Teachers College Press.

Goe, L. (2007). *The link between teacher quality and student outcomes: A research synthesis*. Washington, DC: National Comprehensive Center for Teacher Quality.

Goldhaber, D., & Anthony, E. (2003). Indicators of teacher quality. *ERIC Digest*. New York: ERIC Clearinghouse on Urban Education. (ERIC Document Reproduction Service No. ED478408). Retrieved October 3, 2007, from http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/36/12.pdf

Gordon, R., Kane, T. J., & Staiger, D. O. (2006). *Identifying effective teachers using performance on the job*. Washington, DC: The Brookings Institution. Retrieved October 3, 2007, from http://www3.brookings.edu/views/papers/200604hamilton_1.pdf

Haberman, M., & Post, L. (1998). Teachers for multicultural schools: The power of selection. *Theory Into Practice, 37*(2), 96–104.

Hamre, B. K., & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development, 76*(5), 949–967.

Hoy, W. K., & Miskel, C. G. (2008). *Educational administration: Theory, research, and practice* (8th ed.). Boston: McGraw-Hill.

Johnson, S. M. (2006). *The workplace matters: Teacher quality, retention, and effectiveness*. Washington, DC: National Education Association. Retrieved October 3, 2007, from http://www.nea.org/research/bestpractices/images/wcreport.pdf

Kennedy, M. M. (2007, April). *Monitoring and assessing teacher quality*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Kimmelman, P. L. (2006). *Implementing NCLB: Creating a knowledge framework to support school improvement*. Thousand Oaks, CA: Corwin Press.

Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning*. New York: The Wallace Foundation. Retrieved October 3, 2007, from http://www.wallacefoundation.org/NR/rdonlyres/E3BCCFA5-A88B-45D3-8E27-B973732283C9/0/ReviewofResearchLearningFromLeadership.pdf

Little, J. W. (1999). Organizing schools for teacher learning. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession* (pp. 233–262). San Francisco: Jossey-Bass.

Mathers, C., & Oliva, M. (in press). *Improving instruction through effective teacher evaluation: Options for states and districts* (TQ Research & Policy Brief). Washington, DC: National Comprehensive Center for Teacher Quality.

Messick, S. (1989). Validity. In R. Linn (Ed.), *Educational measurement* (3rd ed.). New York: Macmillan.

Metzger, S. A., & Wu, M.-J. (in press). Commercial teacher selection instruments: The validity of selecting teachers through beliefs, attitudes, and values. *Review of Educational Research*.

Millett, C. M., Stickler, L., Payne, D. G., & Dwyer, C. A. (2007). *A culture of evidence: Critical features of assessments for postsecondary student learning*. Princeton, NJ: ETS. Retrieved October 3, 2007, from http://www.ets.org/Media/Resources_For/Higher_Education/pdf/4418_COEII.pdf

Mitchell, K. J., Robinson, D. Z., Plake, B. S., & Knowles, K. T. (Eds.). (2001). *Testing teacher candidates: The role of licensure tests in improving teacher quality*. Washington, DC: National Academy Press.

National Council for Accreditation of Teacher Education. (2006). *Professional standards for the accreditation of schools, colleges, and departments of education*. Washington, DC: Author. Retrieved October 3, 2007, from http://www.ncate.org/documents/standards/unit_stnds_2006.pdf

No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2002). Retrieved October 3, 2007, from http://www.ed.gov/policy/elsec/leg/esea02/index.html

Pedersen, E., Faucher, T. A., & Eaton, W. E. (1978). A new perspective on the effects of first-grade teachers on children's subsequent adult status. *Harvard Educational Review, 48*(1), 1–33.

Phelps, G., & Schilling, S. (2004). Developing measures of content knowledge for teaching reading. *Elementary School Journal, 105*(1), 31–48.

Pianta, R. C., Belsky, J., Houts, R., & Morrison, F. (2007). Opportunities to learn in America's elementary classrooms. *Science, 315*(5820), 1795–1796.

RAND Corporation. (2006). *Does reform-oriented teaching make a difference? The relationship between teaching practices and achievement in mathematics and science* (Research Brief). Santa Monica, CA: Author. Retrieved October 3, 2007, from http://www.rand.org/pubs/research_briefs/2006/RAND_RB9211.pdf

Rice, J. K. (2003). *Teacher quality: Understanding the effectiveness of teacher attributes*. Washington, DC: Economic Policy Institute.

Rimm-Kaufman, S. E., Early, D. M., Cox, M. J., Saluja, G., Pianta, R. C., Bradley, R. H., et al. (2002). Early behavioral attributes and teachers' sensitivity as predictors of competent behavior in the kindergarten classroom. *Journal of Applied Developmental Psychology, 23*(4), 451–470.

Rosenholtz, S. J. (1991). *Teachers' workplace: The social organization of schools*. New York: Teachers College Press.

Rowan, B. (2004, Summer). Teachers matter: Evidence from value-added assessments. *Research Points, 2*(2). Retrieved October 3, 2007, from http://www.aera.net/uploadedFiles/Journals_and_Publications/Research_Points/RP_Summer04.pdf

Schacter, J., & Thum, Y. M. (2004). Paying for high and low quality teaching. *Economics of Education Review, 23*, 411–430.

Shulman, J. H. (Ed.). (1992). *Case methods in teacher education*. New York: Teachers College Press.

Spillane, J. P. (2004). *Standards deviation: How schools misunderstand education policy*. Cambridge, MA: Harvard University Press.

Te'eni, D. (2001). A cognitive-affective model of organizational communication for designing IT. *MIS Quarterly, 25*(2), 251–312.

Walsh, K., & Tracy, C. O. (2004). *Increasing the odds: How good policies can yield better teachers*. Washington, DC: National Council on Teacher Quality. Retrieved October 3, 2007, from http://www.nctq.org/nctq/images/nctq_io.pdf

Wayne, A. J., & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. *Review of Educational Research, 73*(1), 89–122.

Weick, K. E. (2001). *Making sense of the organization*. Malden, MA: Blackwell.

Wentzel, K. R. (2002). Are effective teachers like good parents? Teaching styles and student adjustment in early adolescence. *Child Development, 73*(1), 287–301.

Wharton-McDonald, R., Pressley, M., & Hampston, J. M. (1998). Literacy instruction in nine first-grade classrooms: Teacher characteristics and student achievement. *Elementary School Journal, 99*(2), 101–128.

Wilson, S. M., & Floden, R. (2003). Creating effective teachers: Concise answers for hard questions (Addendum to the report *Teacher preparation research: Current knowledge, gaps, and recommendations*). Washington, DC: American Association of Colleges for Teacher Education. (ERIC Document Reproduction Service No. ED476266). Retrieved October 3, 2007, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/0a/48.pdf

In any consideration of the measurement of teacher quality and effectiveness, the criteria used to judge the quality of such measures include the following: validity, credibility, comprehensiveness, generality, practicality, reliability, and utility (Blanton et al., 2003). These terms are described as follows, beginning with the most fundamental consideration: validity.

Validity refers to the degree to which the interpretation of a measurement is supported by the evidence. In other words, a measure of teacher quality can be considered to have validity if (1) it actually is measuring the dimension or dimensions of teacher quality that it purports to measure, (2) it is not actually measuring something else, and (3) sufficient evidence exists to support the first two claims. Determining validity is thus not a matter of coming up with a single number or a yes/no proposition. As Millet, Stickler, Payne, and Dwyer (2007) emphasize, it requires a compilation of evidence that specific inferences can be appropriately and adequately drawn from the measurement data, including the intended or unintended consequences of the measurement itself. Validity therefore must be considered within the total context of the assessment. For more in-depth discussions of validity, refer to American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1999) and Messick (1989).

Comprehensiveness refers to the richness and breadth of a measure, metric, or model of a concept.

Credibility is the extent to which a measure is considered sound and appropriate among a variety of stakeholders (for example, teachers, policymakers, school leaders, and parents). Credibility can be bolstered by involving stakeholders in the development or validation process.

Generality refers to how well one metric or model of teacher quality can be valid and useful across a variety of classroom contexts.

Practicality refers to the extent to which the measure or model of teacher quality is usable for implementers. For example, is it cost-effective and easily adaptable? Does it require a reasonable amount of training, among other pragmatic considerations?

Reliability refers to the consistency with which an assessment measures the construct(s) or dimensions that it purports to measure (Millet et al., 2007). However, just because the assessment is reliable, it may not be valid—that is, it may indeed be measuring something reliably but not the dimension of teacher quality that it intends to measure or that the user believes it is measuring.

Utility refers to whether an instrument has been used before and therefore can be evaluated and refined, benefiting from previous experience (Blanton et al., 2003). This term also can refer to the extent to which a metric or model of teacher quality can be used practicably.

Communication Tool 1: Outlining a Plan

The first and second components of this communication framework have emphasized the need for clarifying the purpose of measuring teacher quality or effectiveness. Within your team, agency, or organization, discuss why you are attempting to measure teacher quality or effectiveness. Filling in the boxes below may help you communicate these goals to others within your organization as well as to those on the outside.

1. Why measure teacher quality or effectiveness? How will the measurement be used?

2. What needs to be communicated and why?

3. Who are the primary stakeholders?

4. How will you involve these stakeholders in the process?

17

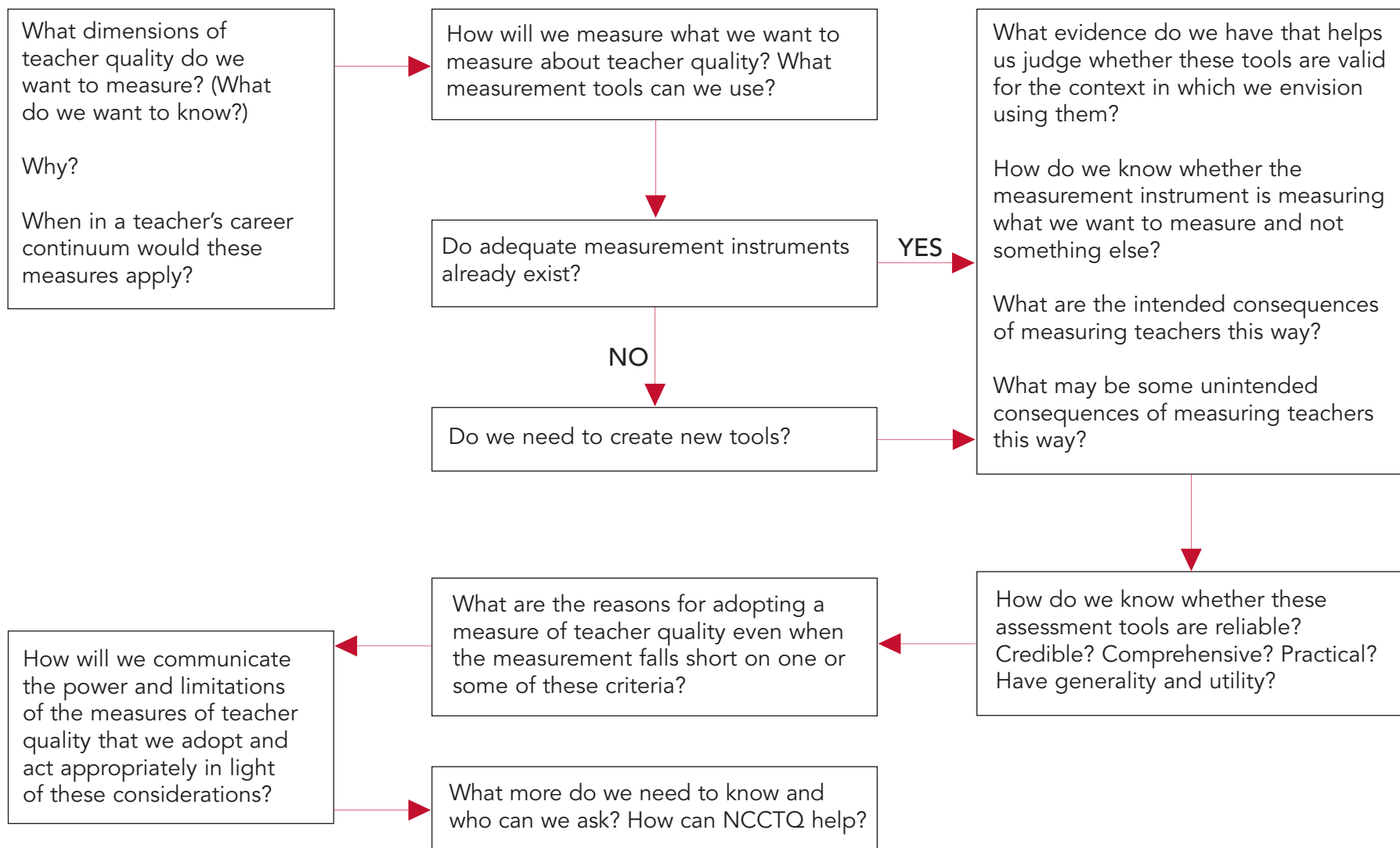## Communication Tool 2: Coming to Terms With Terminology

If participants in the same discussion are using the same terms to mean different things, effective communication becomes nearly impossible. To ensure that the terminology you are using is not misinterpreted by others, it may be helpful to fill out the following chart.

First, try writing down your personal definitions of these terms in column A. Then, in conversation with others of your team or among your constituency groups, try writing a shared definition of these terms in column B. Then, for column C, think about how one might go about distinguishing what makes for a "highly expert" teacher versus an "expert" teacher versus an "emerging expert" teacher, for instance. You may find that focusing on just one dimension—or on a combination of dimensions— is more productive. Finally, think about how you would align or reconcile these terms to make progress in achieving your goals to identify and support high-quality teachers.

Teacher Quality Dimension	Column A: Personal Definition of Term	Column B: Local Definition of Term	Column C: Differentiating Criteria
Teacher effectiveness			
Teacher qualifications			
Teacher expertise			
Teacher capacity			
Teacher character			
Teacher performance			
Teacher success			
Additional dimension(s)			

Communication Tool 3: Selecting Assessment Instruments

To further develop shared understandings of the measurement of teacher quality, another useful activity is to invite stakeholders to walk through the following flowchart together, answering the questions in turn. Evidence from existing research should be brought to bear on these discussions.

19

What dimensions of teacher quality do we want to measure? (What do we want to know?)

Why?

When in a teacher's career continuum would these measures apply?

→

How will we measure what we want to measure about teacher quality? What measurement tools can we use?

↓

Do adequate measurement instruments already exist?

YES →

NO

↓

Do we need to create new tools?

→

What evidence do we have that helps us judge whether these tools are valid for the context in which we envision using them?

How do we know whether the measurement instrument is measuring what we want to measure and not something else?

What are the intended consequences of measuring teachers this way?

What may be some unintended consequences of measuring teachers this way?

↓

How do we know whether these assessment tools are reliable? Credible? Comprehensive? Practical? Have generality and utility?

←

What are the reasons for adopting a measure of teacher quality even when the measurement falls short on one or some of these criteria?

←

How will we communicate the power and limitations of the measures of teacher quality that we adopt and act appropriately in light of these considerations?

What more do we need to know and who can we ask? How can NCCTQ help?

APPENDIX C
RESOURCES THAT PROVIDE INFORMATION
ON STANDARDS FOR TEACHING QUALITY

Interstate New Teacher Assessment and Support Consortium (INTASC)
www.ccsso.org/projects/Interstate_New_Teacher_Assessment_and_Support_Consortium/

INTASC, operated by the Council of Chief State School Officers, has developed a set of model standards for beginning teachers. These standards are available online (www.ccsso.org/projects/Interstate%5FNew%5FTeacher%5FAssessment%5Fand%5FSupport%5FConsortium/Projects/Standards%5FDevelopment/) and have been used by many states to develop teaching standards.

Center for Improving Teaching Quality (CTQ)
www.ccsso.org/projects/Center_for_Improving_Teacher_Quality/

CTQ, also operated by the Council of Chief State School Officers, has further built on INTASC's standards for special education teachers.

National Board for Professional Teaching Standards (NBPTS)
www.nbpts.org

NBPTS has a portfolio assessment process (www.nbpts.org/for_candidates/the_portfolio) for determining teachers who are "accomplished" according to the board's standards.

EdStandards.Org's Administrative and Teaching Standards
edstandards.org/StSu/Teaching.html

EdStandards.Org has compiled all the available state teaching and administrative standards in one location. The website is maintained by the Putnam Valley (New York) School District and the Wappingers (New York) Central School District.

Education Commission of the States (ECS) *Teaching Quality* **website**
www.ecs.org/html/issue.asp?issueid=129

The ECS *Teaching Quality* website provides information on evaluation, preparation/education, professional development, and state professional standards boards. The evaluation section (www.ecs.org/html/issue.asp?issueid=129&subissueID=62) looks at the various ways that teacher quality has been assessed.

Appendix D
Key Resources From NCCTQ

Teaching Quality (TQ) Source
www.TQSource.org

The *TQ Source* website is the premier source for information on teacher quality and leadership quality. Made available by NCCTQ, the site is designed to help policymakers and educators make informed decisions on teacher and leadership quality by identifying policies and initiatives that impact the fundamental issues of teacher preparation, certification, recruitment, retention, and advancement. The website also has an extensive library of research on issues relating to teacher quality and leadership quality.

TQ Source Tips and Tools: Emerging Strategies to Enhance Teacher Quality
www.tqsource.org/strategies/

A forthcoming series of the *TQ Source Tips and Tools* webpage will focus on measuring effective teachers:

- Using student achievement to identify and support highly effective teachers
- Using portfolios and performance assessments to identify and support highly effective teachers
- Using teacher evaluations to identify and support highly effective teachers
- Identifying highly effective professional contexts to support highly effective teachers
- Identifying how highly effective leaders support highly effective teachers

Research Synthesis
Goe, L. (2007). *The link between teacher quality and student outcomes: A research synthesis.* Washington, DC: National Comprehensive Center for Teacher Quality.

About NCCTQ

The National Comprehensive Center for Teacher Quality (NCCTQ) was launched on October 2, 2005, after Learning Point Associates and its partners—Education Commission of the States, ETS, and Vanderbilt University—entered into a five-year cooperative agreement with the U.S. Department of Education to operate the teacher quality content center.

NCCTQ is part of the U.S. Department of Education's Comprehensive Centers program, which includes 16 regional comprehensive assistance centers that provide technical assistance to states within a specified boundary and five content centers that provide expert assistance to benefit states and districts nationwide on key issues related to the goals of the No Child Left Behind (NCLB) Act.

Acknowledgments

NATIONAL COMPREHENSIVE CENTER
FOR TEACHER QUALITY

The National Comprehensive Center for Teacher Quality is a collaborative effort of Education Commission of the States, ETS, Learning Point Associates, and Vanderbilt University.

LEARNING POINT
Associates®

Education Commission
of the States

ETS®

VANDERBILT®

2414_10/07