



Libraries and Learning Services

University of Auckland Research Repository, ResearchSpace

Version

This is the Accepted Manuscript version. This version is defined in the NISO recommended practice RP-8-2008 <http://www.niso.org/publications/rp/>

Suggested Reference

Sinnema, C. E., Meyer, F., & Aitken, G. (2017). Capturing the complex, situated and active nature of teaching through inquiry-oriented standards for teaching. *Journal of Teacher Education*, 68(1), 9-27. doi: [10.1177/0022487116668017](https://doi.org/10.1177/0022487116668017)

Copyright

Items in ResearchSpace are protected by copyright, with all rights reserved, unless otherwise indicated. Previously published items are made available in accordance with the copyright policy of the publisher.

For more information, see [General copyright](#), [Publisher copyright](#), [SHERPA/RoMEO](#).

Capturing the Complex, Situated and Active Nature of Teaching Through Inquiry-Oriented Standards for Teaching

Abstract: Given widespread acceptance of the role of teaching in improving student outcomes, it is not surprising that policymakers have turned to teaching standards as a lever for educational improvement. There are, however, longstanding critiques of standards that suggest they are reductionist, and promote a dualism between theory and practice. Our purpose here is to propose a model of *Teaching for Better Learning (TBL)* that responds to those critiques and that captures the complexity of teaching rather than focusing on discrete elements. Our model foregrounds the salience of teachers' own situations and the active nature of teachers' practice in a way that integrates practice with relevant theory. We outline how the TBL model can be used to derive inquiry-oriented teaching standards; an alternative approach that challenges widely accepted conventions for the design of standards and, we argue, might better support the improvement of teaching and learning.

In teaching, as in other professions, much debate has been had in recent times about the role, nature and content of professional standards. Much attention has been given to professional standards including those for teachers at various stages of the career progression, for school leadership, and for teacher education and the role they play in professionalizing the work of educators and as a lever for system-wide improvement. In this article we begin by

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

contextualizing the scope of standards as they relate to educators in a range of roles and outline arguments for and against them. We also point out a tendency for the design of standards to be similar across jurisdictions, and to persist over time. Revisions to teaching standards policies tend mainly to impact upon the detail of those policies, while norms in terms of fundamental design and the domains used to organize them persist. We argue that those norms ought to be challenged, and new approaches to the design of teaching standards considered. We go on to detail one such alternative—standards that are underpinned by a model of Teaching for Better Learning (TBL) that seeks to capture the complexity of teaching, allows the particularities of teachers' own situations to be salient, and reflects the active nature of teachers' practice. TBL is an inquiry-oriented model that prompts explicit integration of theory and practice. We outline how that model can be used to derive inquiry-oriented standards for teaching that we call Teaching for Better Learning (TBL) Standards. These inquiry-oriented standards foreground attention to the quality of teachers' inquiry into teaching and learning matters, rather than focusing on particular knowledge, skills or dispositions without considering how those are used to inquire into practice. In particular, we signal how this alternative approach to designing standards might better respond to the critiques of standards (that they are reductionist and inadequately address the tension between theory and practice) and be more compatible with the nature of teaching as a complex, situated, and an active enterprise. This approach differs from widely accepted conventions for the design of standards and, we argue, supports educational policy makers, leaders and teachers alike as they seek to improve the quality of teaching.

Standards in education

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Higher standards have for many decades been associated with greater recognition from those outside of the profession and higher status of the profession itself (Palmer, 1953). Early definitions suggest their role is to “set forth the specific criteria of general and special education for the professional, the requirements for admission to practice, [and] the standards for competent service” (Cogan, 1955, p. 108). Policy makers have also, more recently, increasingly turned their attention to standards in their efforts to professionalize the work of educators and as a lever for system-wide improvement in teaching and learning. Those efforts have led, in many nations to a proliferation of standards-based accountabilities including not only standards for practicing teachers, but also standards for teachers at the point of entry into the profession (Cochran-Smith, 2001; Crowe, 2010; Darling-Hammond, 2010; DeLuca & Bellara, 2013; Lewis & Young, 2013; Wang, Odell, Klecka, Spalding, & Lin, 2010). In some countries’ policies those standards are focused specifically on teacher education graduates (for example, New Zealand Teachers Council, 2007; The General Teaching Council for Scotland, 2012), and in others they are included in sets of standards that encompass multiple stages of the career progression (for example, Australian Institute for Teaching and School Leadership, 2011; General Teaching Council for Northern Ireland, 2011). Standards for those seeking expert or accomplished teacher status have also become increasingly common (Wise & Leibbrand, 2001).

There are also standards across multiple functions of the educational landscape including teacher licensure, certification or registration (Darling-Hammond, 2004; DeLuca & Bellara, 2013; King, 1994; Kleinhenz & Serafini, 2002), and the accreditation of teacher education programs (Feiman-Nemser, 2001). Standards are also central to processes of assessment and evaluation, including the assessment of teacher candidates (such as the edTPA teacher

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* (performance assessments in the United States), the evaluation of practicing teachers (Darling-

Hammond, 2012) and the evaluation of school leaders (for example, Council of Chief State School Officers, 2008; Department for Education & Skills, 2004). The processes, tools and instruments used for those processes are often at least coherent with, and at times explicitly linked to, the standards for those educational roles. The sense of proliferation of standards occurs, in part, because standards developed at national or federal level are adapted or aligned to in the development of multiple state or local standards. Furthermore, generic standards become the basis for numerous more particular standards related to the teaching of particular learners (for example, special education), subjects, levels or contexts.

Persistence of Norms in the Design of Standards

Given the demands on teaching presented by the changes over time in the educational context—increasingly challenging curricula, exacting accountabilities, and serious issues of achievement inequity—it is striking that there have not also been more marked changes over time in the design of teaching standards. Rather, their fundamental design has remained largely unchanged, and is noticeably similar across jurisdictions. By the design of standards we refer mainly to the structural organizers of standards' frameworks—the domains. Even after processes to revise policies for teaching standards, the domains used to organize them typically remain either very similar or exactly the same (see Appendix A). For example, three domains framed the standards for initial teacher education in Scotland in 2000: professional knowledge and understanding, professional skills and abilities and professional values and personal commitment (Quality Assurance Agency for Higher Education, 2000b). Those same domains serve as the organizer for the 2006 and 2012 revisions to the Scottish standards (The General

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Teaching Council for Scotland, 2006, 2012). Similarly, the Australian national framework for professional standards in 2003 were organized around the domains of professional knowledge, professional practice, professional values and professional relationships (Teacher Quality and Educational Leadership Taskforce, 2003). The 2011 Australian standards used the very similar domains of professional knowledge, professional practice and professional engagement (Australian Institute for Teaching and School Leadership, 2011). While many teaching standards documents make reference to the inter-related nature of the domains in introductory sections, the separate organization of the domains does little to help signal their inter-related nature, or to help users integrate them as the designers intended.

As well as norms in the organizers for standards across policy revisions within nations, there are patterns evident across nations (see Appendix A indicating the similarities across the United States, England, Scotland, Wales, Northern Ireland, New Zealand and Australia, for example) in the domains used to organize them (Australian Institute for Teaching and School Leadership, 2011; Council of Chief State School Officers, 2011; Department of Education, 2012; Education Council, 2015; General Teaching Council for Northern Ireland, 2011; Quality Assurance Agency for Higher Education, 2000a; Teacher Quality and Educational Leadership Taskforce, 2003; The General Teaching Council for Scotland, 2006, 2012; Training and Development Agency for Schools, 2007; Welsh Government, 2009). While not identical, terms used for the domains are conceptually similar, and typically refer to knowledge (knowledge or understanding) and practice (practice, teaching, performance, skills or abilities) and often also values (values, dispositions, commitments or responsibilities); and/or professional relationships (relationships, engagement or community). Most typical is a framework using the domains of knowledge,

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

practice and one or two others, such as values or relationships. The widely accepted conventions apparent in the organization and design of teaching standards no doubt reflects the undeniable reality that teachers' knowledge, practice, values and relationships have been and will remain vital to the quality of teaching. That reality does not, however, in our view, make a compelling case for those domains enduring as the central organizers of teaching standards without adequate consideration of alternatives. Those alternatives should also be considered in light of prior critiques of the notion of standards in education. Next we address two key critiques of standards—the dualism of theory and practice, and the reductionist approach to standards. The model we go on to propose is intended to respond to both of those critiques.

The standards debate

Standards in education are not universally accepted as desirable. Those who argue *for* teaching standards suggest the importance of standards in upholding the status of the profession and enabling the profession as a whole to serve the public good. They are seen, by some, as an important tool for the definition, recognition and development of a profession. When well-written, they claim, standards have the potential to be a powerful tool for improving teaching, learning and on-going professional development (Kleinhenz & Ingvarson, 2007), since they “define effective practice in terms of desired outcomes and in terms of preferred procedures and performance” (Yinger & Hendricks-Lee, 2000, p. 97). Standards promote reflection on particular classroom interactions, establish a basis for professional discourse, provide a conceptual basis for debate and improvement, serve formative purposes in teacher evaluation and encourage teachers' active role in self-directed enquiry (Darling-Hammond, 2010, 2012).

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Arguments from those who do *not* support teaching standards consider them to undermine the essence of professionalism. They voice two main critiques. The first critique is about the dualism of theory and practice in standards in contrast to the need to integrate theory with professional practice. Debates are centered on the dilemma of how to treat the relationship between them, and that dilemma creates tension. Such tension is problematic because there ought to be, as Flexner (1915, 2001) suggests, a connection between the nature of the activities (which are intellectual) and the purpose (which is practical):

Professionals are therefore intellectual and learned; they are in the next place definitely practical. No profession can be merely academic and theoretic; the professional man must have an absolutely definite and practical object. His processes are essentially intellectual; his raw material is derived from the world of learning; therefore he must do with it a clean-cut, concrete task. All the activities about the professional quality of which we should at once agree are not only intellectual and learned but definite in purpose. (Flexner, 2001, p. 155)

The simultaneous attention to matters intellectual and practical is a challenge, and particularly so when considering standards for pre-service teacher education. As Grossman (2008) puts it, the enduring gap between theory and practice “haunts most professional preparation programs...whether one is talking about law or the clergy, medicine or social work” (p. 12). What is taught in university, she explains, can be seen as quite distant from the immediate concerns of those working in the professions. While few would not argue the place of both theory and practice, the balance and relationship between practice, application and performance on the one hand, and formal knowledge and theories on the other is contentious

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* (Bengtsson, 1995; Cochran-Smith & Lytle, 1999). The norms referred to earlier in terms of the

domains used to organize standards support this critique. When knowledge and practice are treated as separate domains under which to organize standards, as they are in so many current sets of teaching standards, the dualism of theory and practice is entrenched.

The second critique is about reductionism which claims that standards focus on specific behaviors thereby destroying professional autonomy and reflection (Delandshere & Arens, 2001; Feuerstein, 2001; Yinger & Hendricks-Lee, 2000). They are said to create a reductionist approach to practice and represent a restricted, routine and mechanistic view of teaching (Beck, 2009; Furlong, Barton, Miles, Whiting, & Whitty, 2000). Such reductionism is, arguably, apparent in many current professional standards policies some of which outline as many as 43 (Welsh Government, 2009), 70 (General Teaching Council for Northern Ireland, 2011) and 174 (Council of Chief State School Officers, 2011) specific descriptors or indicators of practice outlined in relation to the overarching standards.

The reductionist approach, at its extreme is referred to by Feuerstein (2001) [ENREF_50](#) as hyper-rationalization in which strict measures of efficiency and accountability are pursued with the development of “measurable (though often narrow) educational goals, and a desire for centralized control” (Feuerstein, 2001, p. 110). These criticisms are not unique to education. In the context of medicine, Talbot (2004), for example, suggests that the standards approach for medical graduates “has a tendency to limit the reflection, intuition, experience and higher order competence necessary for expert, holistic or well developed practice” (p. 587). He also reasons that the reductionist tendency to focus only on tasks and outcomes ignores the complex processes

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*
needed for professional practice. Such complexity also characterizes the work of teachers in schools.

Restricted definitions of standards, it is argued, lead to performativity—teachers become compelled to ‘perform’ with the purpose of demonstrating standards of practice that are observable and measureable, but narrow and shallow in their interpretation of effectiveness. Beck’s (2009) critique of Professional Standards for Teachers in the UK signals the dangers of such a performative emphasis. He points to the active verbs at the start of each standard and suggests they are profoundly reductive: “it suggests that being a professional educator is a matter of acquiring a limited corpus of state-prescribed knowledge accompanied by a set of similarly prescribed skills and competencies” (p. 8). This argument suggests that standards promote a focus on performativity and impression management. That focus has the unintended consequence of impeding teachers’ professional learning and practice and stifling educational improvement.

The alternative approach to standards we outline in the next section, acknowledges that teaching is a complex undertaking and that teaching is poorly represented by restricted definitions and reductionist approaches often evident in existing standards. It seems undesirable to have standards for a professional activity that is complex without that complexity being reflected in the standards for that activity. We propose integrative standards that reflect the complexity inherent in the work, and that avoid judging teachers on many reductionist specific behaviors. The approach we propose also emphasizes the importance of teachers’ practice embedding their theoretical understandings in a way that avoids the dualism of theory and practice. It also promotes the integration, rather than separation of domains relevant to teaching.

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

An Argument for an Alternative Approach to Teaching Standards

Teaching has long been understood to be a demanding profession. As Shulman (2004) put it, in no uncertain terms, “teaching... is perhaps the most complex, most challenging, and most demanding, subtle, nuanced and frightening activity that our species ever invented” (p. 504).

The demanding nature of teaching, as Fairbanks et al. (2010) explain, arises from the numerous forces involved and the inherently ambiguous, dilemma-ridden nature of the situations teachers face. Many hallmarks of the current educational context compound those demands: the nature of curricula that guide, or in some cases dictate, teaching; the accountabilities facing teachers, schools and systems; and the persistence of inequities in student achievement. In this section we discuss those demands, and the seemingly entrenched prevailing norms in the structural organizers of standards, which are grounds, in our view, for reconsideration of the approach to teaching standards.

Recent trends in the emphases of national curricula make teaching toward the goals of those curricula particularly demanding (Sinnema & Aitken, 2013; Sinnema & Ludlow, 2013). Many recently revised national curricula are characterized, for example, by an emphasis on developing students’ competencies for lifelong learning. They focus on teaching and learning about values, and promote student agency in decision-making about their education. In many contexts teachers must grapple with the pressure to ensure success in a core curriculum, which in some contexts means ensuring test-focused accountabilities are met and simultaneously ensure students succeed in a rich, broad curriculum promoting progress on outcomes described as ‘non-academic’ (Ladwig, 2010) in ways that reflect 21st century learning goals and approaches.

Demands on teaching and teachers are also heightened by the degree of authority on teachers for

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* curriculum decision-making. Those demands, while different in nature, occur both in low

teacher curricular autonomy contexts (where there is highly prescriptive curriculum content), and high teacher curricular autonomy contexts (where there is a great deal of flexibility about what teachers teach) (Priestley & Sinnema, 2014; Sinnema, 2015).

Teaching demands are also compounded by a context in which teachers have multiple accountabilities. They are, more so than ever before, accountable to their immediate colleagues, particular given the prominence of teacher professional communities as a mechanism aimed at professional learning and improvement (Horn & Little, 2010). They are accountable to their superiors and employers as evidenced by the prevalence of increasingly rigorous systems of teacher evaluation (Donaldson, 2013; Goldstein, 2009) and attention to the application of value-added measures in the context of teacher evaluation (Grossman, Cohen, Ronfeldt, & Brown, 2014). A system challenge remains, however, that teacher performance evaluation systems are not yet effective enough at distinguishing between high-versus low-performing teachers (Woolf, 2014). Teachers are also becoming increasingly accountable to the parents and families of students they teach, with far higher expectations in the current context for not only communicating *to*, but engaging *with* parents to support the quality of teaching and learning.

Accountabilities at a system level also increase the degree of demand in the teaching profession. International student assessment regimes (such as the Trends in International Mathematics and Science Study (TIMSS), the Programme for International Student Assessment (PISA) and Progress in International Reading Literacy Study (PIRLS)) highlight international comparisons and relative rankings in student achievement and system improvement. The implications of comparisons at an international level filter down to the school level, increasing

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

the demand on teachers to contribute to improvements in national rankings. These international assessments, as well as more local ones, reveal troubling patterns for many nations of inequity in educational success. They show that students from ethnic minorities, from low socio-economic backgrounds and with special education needs are often over-represented at the lower levels of achievement. This achievement gap, or as Ladson-Billings (2008) describes it, ‘education debt’ (p. 235) sharpens the demands on teachers for teaching that contributes to more equitable outcomes for diverse learners. The demands and challenges outlined above have significant implications for system level policy and practice, and particularly for the approach taken to professional teaching standards for the current educational climate.

The Development Context of the Teaching for Better Learning Model

The authors were commissioned by the New Zealand Ministry of Education to prepare a background paper to inform policy and promote discussion on a desirable graduate profile for teacher education—in particular to propose standards about what a graduate teacher ought to know and be able to do on entry into the profession. We brought to that work our experience, in the case of the first and third authors, as academics with expertise in effective teaching, teacher evaluation, policy design; our experience as classroom teachers (both elementary and high school); as teacher educators; and our experience as contributors and advisors to national educational policy work. The second author brought academic expertise in teacher education, standards in teacher education and structural inequalities in education; and experience as a special needs teacher and educator. Our work on the paper led us to analyze and critique existing standards from multiple jurisdictions at national and state level. We read widely about the critiques of standards, nature of teaching, effective teaching and inquiry-oriented practice in

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

particular. We read through a lens of standards design – what might this mean for an alternative approach to teaching standards? How might the design of standards better reflect what much literature reveals about what teaching is like, and what effective teaching demands? We sought and engaged with feedback, throughout an eight-month period, from a range of stakeholders and experts. The approach we propose has been informed by the critique, challenge, reactions and contributions of teachers, teacher educators, policy makers and respected academics with expertise relevant to teaching standards (including those from beyond New Zealand). Regular advisory sessions were held in which drafts of our model were subjected to rigorous evaluation to strengthen the standard of the standards themselves. The members of the advisory group were selected by the contracting body to represent diverse roles and perspectives. They group included Professor Alister Jones and Associate Professor Margie Hohepa from The University of Waikato, Professor Roberta Hunter from Massey University, Professor Helen Timperley from The University of Auckland and Professor Field Rickards, Dean of the Melbourne Graduate School of Education at the University of Melbourne. Following multiple iterations, the version of our model presented here reflects the challenge from our advisors to more strongly reflect, for example, social justice concerns, aspirations for indigenous learners, the social and political context in which teachers work takes place, and the relationship between teachers' own learning needs and priorities and those of their learners.

The standards we propose are standards applicable to all teachers regardless of career stage, including graduates *entering* the profession. We made the decision not to create a progression of standards in which demands on a new graduate are less than those on an experienced teacher. Given all teachers' (new or otherwise) hold responsibility for the learning of the students they

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

teach, a lesser demand on beginning teachers is not defensible. Greater equity in education ought not, in our view, be inhibited by standards that sanction some students being taught at a lesser standard than others. Rather we argue for a single set of rigorous standards with the understanding that new graduates will operate in a context where there is an expectation for conditions and resources that enable their achievement of such standards, including higher levels of support.

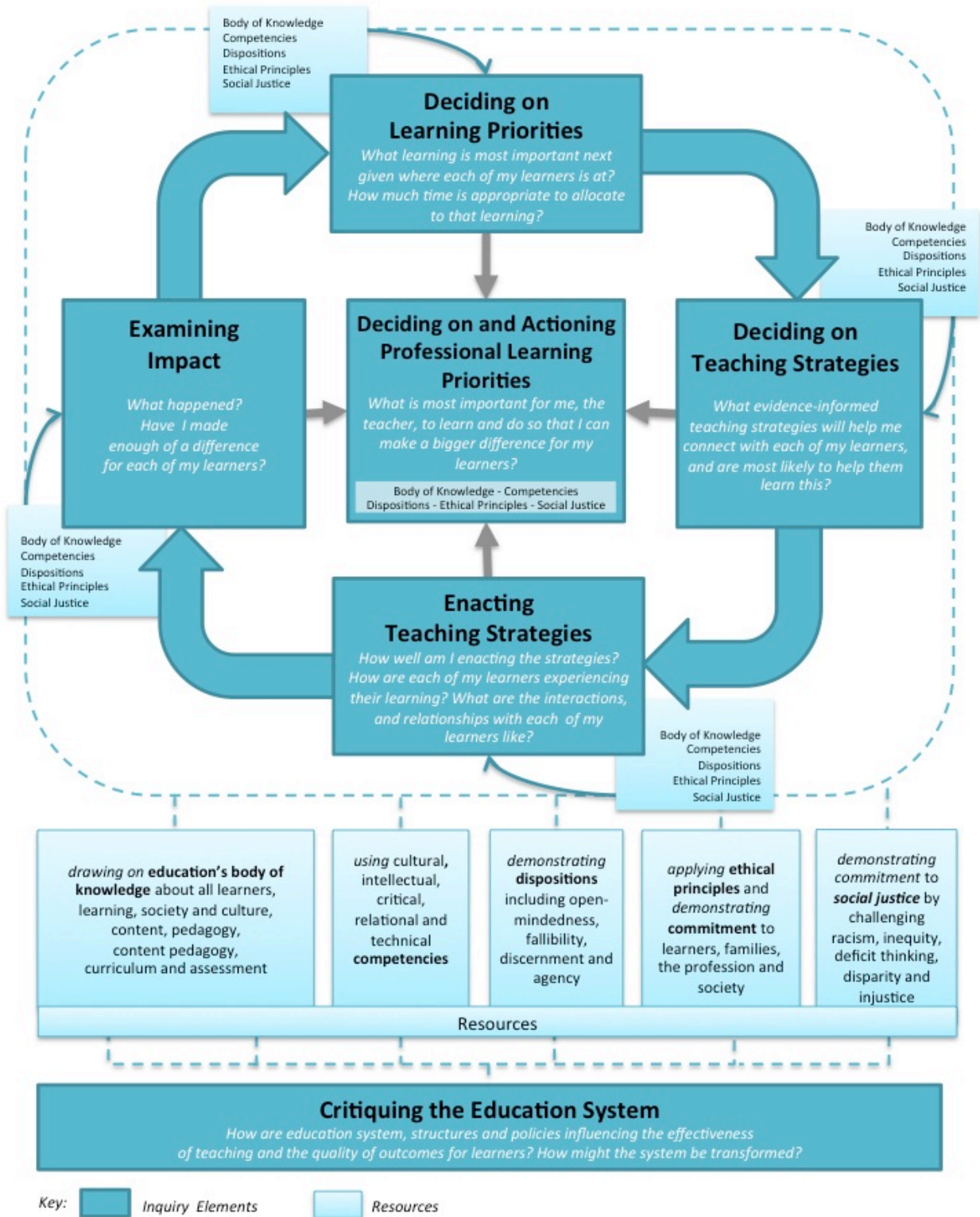
There were notable parallels in the task for the commissioned paper (designing standards that are coherent with the complex, situated, and active nature of teaching) and our prior work on effective teaching. For that reason the approach we propose draws heavily on the New Zealand Curriculum model of effective pedagogy—Teaching as Inquiry (Aitken & Sinnema, 2008, p. 52; Sinnema & Aitken, 2011). That model was designed alongside a synthesis of findings of outcomes-linked evidence about effective teaching approaches in the social sciences. Evidence of seemingly similar approaches working well in some situations but not in others signaled the importance of inquiry into the effectiveness of approaches in each situation they are used. The authors were careful, therefore, to present findings about effective pedagogical approaches alongside a model of teaching that does not necessarily presume the transferable effectiveness of approaches from one context to another. In this way the earlier model (Teaching as Inquiry) addresses the situated nature of teaching that we argue should be at the heart of teaching standards. But, as we reviewed our prior work, we realized it did not adequately address, for the purpose of standards, the complexity of teaching and its active nature. A desire to address complexity led us to be more explicit and inclusive in outlining how *resources* should be drawn

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*
on to strengthen the quality and rigor of inquiry. A desire to address the active nature of

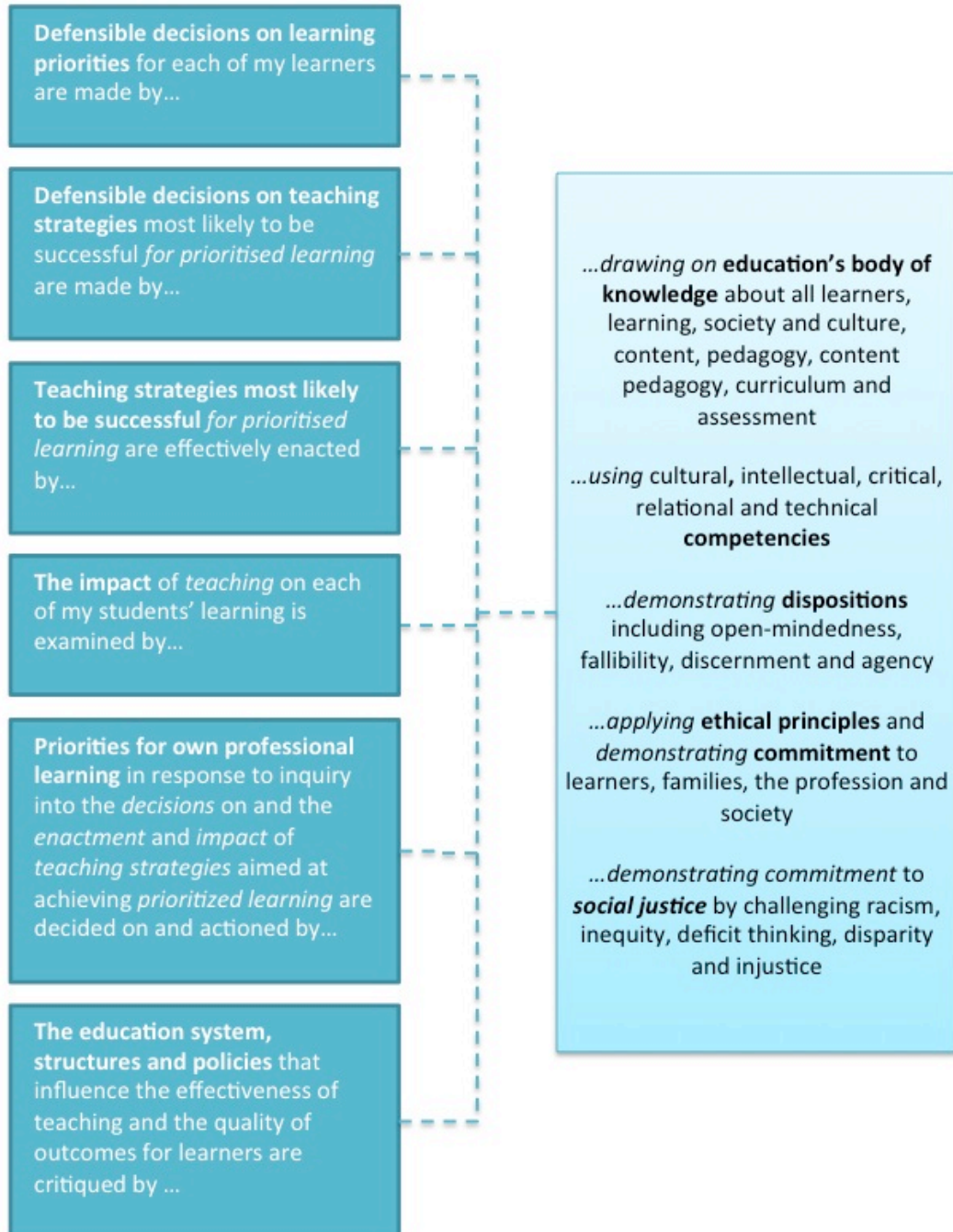
teaching aspect led us to expand the inquiries to include inquiry into the enactment of teaching.

An Alternative Approach to Teaching Standards: The Teaching for Better Learning Model

In this section we present our proposal for an alternative approach to standards. Important principles in the design of our alternative standards are that they are aligned to the nature of teaching and that they respond to the long-standing critiques of standards as reductionist and the persistent dilemma about how to treat the relationship between theory and practice in standards. Those principles led us to an approach that reflects the complex nature of teaching (integrative rather than reductionist) as well as the situated and active nature of teaching (explicit integration of theory and practice). There are two parts to our approach – a model of effective teaching we call the Teaching for Better Learning model (see Figure 1), and a set of standards that are directly derived from that model (see Figure 2). Before introducing the inquiry-oriented model and standards themselves in more detail, we first reflect on the complex, situated and active nature of teaching—the basis of our justification of an alternative inquiry-oriented model for teaching standards. We highlight these characteristics since they are both central to the nature of teaching, and weakly represented in many current approaches to teaching standards, which may explain at least in part the unceasing reductionist and theory/practice critiques. We then turn to key theorists whose work has informed the approach we propose.



Teaching for Better Learning Standards



Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Teaching is by Nature Complex, Situated and Active

Firstly, as has long been acknowledged, the task of teaching involves complexity (Jackson, 1974). That complexity arises from the fact that teachers typically work simultaneously with many, and diverse students. It also arises from the multiple, wide-ranging, changing and sometimes competing aims and objectives that frame the work of teachers—some of those objectives are immediate, some short term, and some much longer term. Furthermore, teaching involves multiple unknowns, including students' responses and the uniqueness of each and every teaching situation. Those unknowns contribute to what Labaree (2000) describes as the “chronic uncertainty” that teachers must learn to live with as an essential component of their professional practice (p.231). Teaching is also complex since it involves multi-directional and multi-causal processes (Leinhardt, Young, & Merriman, 1995). Teaching decisions cannot, therefore, be routinized since, as Hammerness et al (2005) put it, they are “contingent upon student responses and the particular objectives sought at a given moment” (p. 359). The complexity of teaching is unsurprising when one views teaching as a complex system. Like other education-related complex systems (for example, education broadly, learning, schooling, teacher education and teacher learning) teaching involves multiple strands (Cochran-Smith, Ell, Ludlow, Grudnoff, & Aitken, 2014; Leinhardt et al., 1995; Opfer & Pedder, 2011). Those strands cannot, as Leinhardt (1995) warns, be separated. To separate the strands of classroom management skills, subject-matter knowledge and pedagogical techniques, for example, would fail to recognize the inter-related nature of those strands, and the complex, dynamic nature of teaching.

That complexity has not, however, always been reflected in policy, despite recognition of teaching as “unforgivingly complex” (Cochran-Smith, 2003, p. 4). Rather, policies often “share

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

narrow—and some would say impoverished—notions of teaching and learning that do not account for the complexities that are at the heart of the educational enterprise in a democratic society” (Cochran-Smith, 2003, p. 4). The complex nature of teaching has important implications for standards—they should include and integrate the multiple domains relevant to effective teaching such as practice, knowledge, competencies, dispositions and ethical principles. Furthermore standards should not only signal the principle of and expectation for integration, but should make explicit how such integration occurs. In this way, we argue against a multiplicity approach, where the abundance of indicators is intended to signal the complexity of teaching, albeit organized in several sets or domains. Rather, we argue for a more nuanced approach, in which complexity is shown through explicit signals of the integration of, and relationships between, fewer but all-critical elements.

Secondly, and related to the notion of teaching as complex, is the notion of teaching as situated. Teaching is influenced by the particularities of the situation in which it occurs, and that situation, given the vast array of the combinations of the complex variables involved in any teaching situation, mean that each and every teaching situation will be unique. No teaching situation will be identical to one that has occurred before. The quality of teaching, therefore, “depends sometimes to a small and other times to a considerable extent on how well the teacher adapts his or her instruction to the context at hand” (Fenstermacher & Richardson, 2005, p. 207). Well adapted teaching occurs when teachers respond to uncertainties and attend to idiosyncrasies of a given situation “with experimentation and creativity” (Helsing, 2007). The need for teachers to adapt teaching in response to each new situation has two key implications for standards—they should promote inquiry into the unique situation of one’s own practice and they should be

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*
explicit in their treatment of and responsiveness to students' diversity and culture since the combination of those elements in any one classroom will also be unique.

The approach to standards we propose emphasizes the importance of attending to authentic practice in teachers' own contexts. In this way, our model resonates with the work of the 'teacher-as-researcher' approach developed by Stenhouse in the 1970s. Stenhouse (1975) argued that teacher research should be embedded in the context of their teaching work (rather than imitating academic research). As he succinctly put "it is not enough that teachers work should be studied: they need to study it themselves" (p. 143). The call for such inquiry applies for both practicing teachers and for those yet to enter the profession because, as Fenstermacher (1978) argued, the goal of teacher education is not to compel teachers to obey teaching rules and rigidly follow prescribed approaches, but to educate them to reason soundly about their teaching as well as develop their teaching performance. Sound reasoning requires both a process of thinking about what they are doing and an adequate base of facts, principles, and experiences from which to reason. Just as Fenstermacher (1978) argued the need to transform teachers' beliefs from subjectively to objectively reasonable, our model emphasizes the place of evidence (sourced from both formal research and from one's own and colleagues' experience) as a key informant of teaching and learning decisions. It also emphasizes attention to how defensible teachers' decisions are as the basis for determining if they have met the standard.

Thirdly, teaching is fundamentally an active activity. Like other professionals, including doctors, lawyers, accountants and architects "teachers have to master their disciplines to be effective in their professions, but knowing their subject matter is not sufficient. Professionals are not simply holders of knowledge; they are people who act on this knowledge for the benefit of

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* clients” (Labaree, 2000, p. 232). The active nature of teaching arises from it being an inherently relational process. It occurs in a particular type of social situation that involves reciprocal relationships between a teacher and their students. That reciprocity was signaled in Dewey’s point that one cannot be a good teacher unless someone is learning (Dewey, 1933). That reciprocity is also the source of much challenge, since teachers are dealing with simultaneously with groups of up to 35 students, with students who are compelled to attend, and with the management of emotions in a relationship that differs from the emotional distance that characterizes relationships in many other professional relationships (Davis & Sumara, 2010; Labaree, 2000). The active nature of teaching implies that standards ought to go beyond what teachers know, to encompass how well they act on and apply that knowledge in their practice. Standards should also simultaneously attend to and integrate practice and knowledge. The logic of standards that are limited to, or that foreground the passive knowledge aspect of teaching rather than the active practice aspect is, in our view, flawed.

Rather than positioning teachers as passive implementers of specific teaching behaviors prescribed by reductionist standards our approach positions teachers as active, agentic participants in decisions about their practice and judgements about its effectiveness. Our model promotes systematic and protracted inquiry of the type described by Dewey (1933), during which a state of doubt is welcomed and maintained rather than a state of certainty whereby ideas and suggestions are blithely accepted. Our approach uses questions to guide stages of inquiry in an attempt to reduce the uncritical acceptance of suggestions. It signals multiple sources of evidence that might inform reflection on the quality or relevance of suggestions. It also provides a framework (a series of connected inquiries) that prompts a systematic rather than unstructured

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

approach to thinking. The model requires “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it,” (Dewey, 1933, p. 6) and in particular consideration of those beliefs about what is most important for learners, about the teaching approach most likely to be successful, and about the impact of that teaching on all learners.

The complex, situated and active nature of teaching leads us to propose standards that have at their heart, an inquiry orientation. Standards that focus on requiring teachers to do certain things, or to know certain things are not coherent with the uncertainty inherent in the complex and unique situations each teacher is involved in. To teach well, and to improve their teaching, teachers need, in our view, to demonstrate their ability to inquire into that uncertainty in ways that address the particular complexities, conditions and challenges they face. Standards that promote teachers inquiry into the complex unique situations they face are more likely, we suggest, to improve their practice, and ultimately students’ learning, than standards that impose expectations about the particular knowledge and behaviors teachers require.

The theoretical basis for our proposal draws on the work of Shulman in the 1980s—many of the elements in his model of pedagogical reasoning and action are present (comprehension, transformation, instruction, evaluation, reflection, new comprehension), though organized differently, in the model we propose. The contributions of Cochran-Smith and Lytle also inform our model through their attention to the importance of teacher inquiry (Cochran-Smith & Lytle, 1990), and the importance of worldviews and habits of mind within that inquiry (Cochran-Smith & Lytle, 2009). Their notion of ‘inquiry as stance’ is described as “a way of knowing and being in the world of educational practice that carries across educational contexts and various points in

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*
one's professional career and that link individuals to larger groups and social movements

intended to challenge the inequities perpetuated by the educational status quo” (Cochran-Smith & Lytle, 2009, p viii). This conception of inquiry informs our inclusion of commitment to social justice, and dispositions for effective teaching as central to the model.

Our enthusiasm for an inquiry orientation is, therefore, derived from more than a century of work from those including Dewey, Shulman, Stenhouse, Fenstermacher and Cochran Smith. Their work collectively provides, in our view, a strong philosophical and theoretical rationale for emphasizing inquiry in a model for teaching standards. In the following section, we describe our model and its various elements in more detail, then explain how those might be integrated to generate graduating teacher standards that, like the teaching they describe, are complex and integrative.

The Teaching for Better Learning Model

The TBL model structures the teaching and learning process around six inquiries that are interrelated but each with a different purpose: deciding on learning priorities; deciding on teaching strategies; enacting teaching strategies; examining impact; deciding on and actioning professional learning priorities; and critiquing the education system. The quality of inquiries, and resulting practices, are improved by drawing on five sets of *resources*:

- **education's body of knowledge** of all learners, learning, society and culture, content, pedagogy, content pedagogy, curriculum and assessment
- cultural, intellectual, critical, relational and technical **competencies**
- **dispositions** of open-mindedness, fallibility, discernment, and agency
- **ethical principles** and commitment to learners, families, the profession and society

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

- commitment to **social justice** by challenging racism, inequity, deficit thinking, disparity and injustice

We call these ‘resources’ because they, like resources in the common usage of the term, indicate personal attributes and capabilities for effective functioning. With respect to teaching, we claim that greater scope and depth of the resources teachers draw on to inform their inquiries is likely to strengthen to the effectiveness of their practice. We elaborate on each of the inquiries and each of the resource sets below.

The inquiries. The six inquiries are presented diagrammatically in a way that signals a logic to their sequence, indicated by the arrows in the model. It typically makes sense, for example, to decide on learning priorities before deciding how to teach toward those priorities, but the arrows are not intended to indicate a strict series of steps or unidirectional sequence. In practice, the learning from any inquiry might lead a teacher toward any one of the other inquiries. Similarly, there are multiple potentially appropriate starting points to an inquiry. It will often make sense to begin with learning priorities, particularly prior to the start of a new phase of teaching. Equally, it could make sense to begin with decisions about teaching strategies if the priorities have already been determined and agreed upon.

The *Learning Priorities inquiry* helps determine direction. Given that time is limited and that learners need multiple opportunities to engage with the content of new learning, priorities need to be established. The essential issue that teachers need to address is not what is important for each student to learn but what is *relatively* most important. Making decisions about relative importance of the vast array of possible outcomes to prioritize, and about using time well is the focus of this phase of the cycle. Central to this inquiry is the question ‘What is most important

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* and therefore worth spending time on?' Reference to 'each' in the questions here is important

since the collective priorities need to be addressed alongside the priority for each and every learner.

The purpose of the *Teaching Strategies inquiry* is to identify strategies that are most likely to help learners achieve the outcomes that have been prioritized. Central to this inquiry are the questions 'What could I try?' and 'How good is the evidence?' These questions imply a considered and reflective approach to practice and research that requires the ability not only to locate the evidence but also to evaluate its quality. The Teaching Strategies inquiry requires attention to outcomes-linked research evidence and to evidence from practitioner experience to inform decisions about what teaching strategies to try. It encourages teachers to view research as sources of better-informed conjectures about what *might* enhance learning for learners in their classrooms. This inquiry does not presume which empirical evidence is most relevant for teachers to consider, since the most relevant evidence will be dependent on the particular situation. What it does presume, is that empirical evidence about teaching strategies relevant to the outcomes and learners of focus does exist, and is worth attending to when making decisions about the approach to try.

Inquiring into the *Enactment of Teaching Strategies* requires teachers to evaluate their actions in the moment ('Am I enacting the strategies I decided on well?'), how learners are experiencing their learning, and the quality of the learning relationships that are being developed. This inquiry requires teachers to notice their own and learners' interactions and behaviors and the intellectual and emotional responses. Such inquiry typically happens *during* the teaching and learning. While the other inquiries might also happen in the moment, this inquiry in particular

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* requires ‘in the moment’ attention to what the teacher is doing and how each learner is responding.

Central to the *Impact inquiry* is the collection and analysis of high quality evidence based on two key questions of impact: The first question is ‘What happened?’ to prompt examination of the impact teaching had on each student’s learning. But understanding what happened is insufficient without a sense of aspiration and high expectations. Hence the second question, which is about whether students’ learning was sufficient – ‘Have I made *enough* of a difference for each learner?’ The term “each” learner rather than a more generic and impersonal collective reference to “all” learners places an obligation on teachers to adopt practices that are inclusive of individual students not simply the group of students as a whole.

The *Professional Learning inquiry* requires teachers to be meta-cognitive and self-regulated learners—able and inclined to ‘think about their thinking’ in relation to the other *inquiries* and to actively initiate, motivate and direct their own efforts to acquire knowledge and skills rather than rely on others for instruction (Schunk & Zimmerman, 1994). This inquiry promotes the idea described by Darling-Hammond (2006) of teachers increasingly becoming their own teachers and demonstrating the skills to learn from practice and also to learn for practice. It requires teachers to consider the quality of each of the other five *inquiries* and ways in which those inquiries could be strengthened through their own learning and development.

The inclusion of the *Professional Learning inquiry* strengthens the standards because, as Ingvarson (2003) points out, “if standards for teaching are to have a positive impact on teachers and students, then they must be embedded within a culture committed to professional learning,

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* and the focus must be on the teachers themselves identifying their needs for professional learning” (p. 103).

The inquiries in the upper section of the model emphasize attention on teachers’ own students. Effective teaching also requires attention to the broader context of schooling, teaching and learning, since that context influences either directly or indirectly what is possible in a teacher’s own context. For that reason, we include in the model an *Education System Inquiry* that positions the teacher as a knowledgeable and critical professional who engages with current policy debates in education and about social, cultural, political and economic influences on the context in which they work. This inquiry emphasizes the need for teachers to participate in moving education-related debates forward and to contribute to system-wide improvements.

The resources. The six resources encompassed in the model are prevalent in discussions on quality teaching and quality teachers (Wang, Lin, Spalding, Klecka, & Odell, 2011). While the resource of teachers’ knowledge has arguably had more empirical attention than the other resources and its impact has been shown to have a strong impact on student outcomes (Baumert et al., 2010; Hill, Rowan, & Ball, 2005), there is growing empirical evidence of the influence of teachers’ competencies, dispositions and their commitment to ethical practice and social justice (for example, Gay, 2010; Kunter et al., 2013; Turner & Drake, 2016; K. M. Tyler, Boykin, & Walton, 2006).

The *resources* are positioned behind each of the *inquiries* to reflect their continuous integration throughout all parts of the teaching process. In this way we argue that education’s body of knowledge, competencies, dispositions, ethical principles, and commitment to social

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

justice are not just *resources* teachers need to ‘know about’ - but resources they need to draw on

and use as they inquire into their teaching and their students’ response., It is their use in the service of high quality inquiry and practice that distinguishes more highly effective teaching from less effective. Inquiring in ways that use these resources is what we argue to be a marker of quality teaching—this notion of quality teaching prompts teachers to take account of empirical research findings, but doesn’t presume which research is most relevant, since that requires knowledge of the particular context. The resources are also purposely broad, but not exhaustive—they signal particular resources (particular competencies such as technical competencies, and particular dispositions such as open-mindedness, for example) but high quality inquiries may well require additional resources dependent on the particular situation—the model allows for and requires that. Decisions teachers make would not be considered defensible if the resources drawn on were inadequate.

Each of the *resources* are purposefully underpinned by multiple theories—for instance, theories of cultural responsiveness (Bishop & Berryman, 2006; Gay, 2000) underpin the resource of cultural, critical and relational competencies; notions of habits of mind (Dewey, 1933; Nelsen, 2015), open-mindedness (Spiegel, 2012) and open-to-learning interpersonal behavior (Argyris & Schön, 1974; Robinson, Sinnema, & Le Fevre, 2014) underpin the dispositions resource; and theories of curriculum (Barber, 1992; Dewey, 1933; Dillon, 2009; Schwab, 1969; Taba, 1962; R. W. Tyler, 1949) underpin the knowledge of curriculum resource. The diversity and scope of the *resources* are intentionally signaling a theoretical pluralism. Theoretical pluralism is relevant since the problems and issues raised in the inquiry the model prompts are likely to be complex and unable to be adequately addressed by engaging with a single theory. As Griffiths (1997)

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

puts it “particular theories are appropriate to certain problems, but not others” (p. 372). The

iterative process of engaging with expert practitioners, teacher educators and researchers during the development of the TBL Model sought to ensure that the *resources* included capture a sufficiently encompassing range of relevant theories.

The resource set of *education's body of knowledge* refers to the knowledge base categories described by Shulman (1987) – namely: content knowledge, general pedagogical knowledge, curriculum knowledge, pedagogical content knowledge, knowledge of learners, educational contexts and educational ends, purposes and values. This knowledge base is complex because it draws from multiple disciplinary sources (for example: psychology, history, sociology, philosophy and education) that offer competing interpretations of problems and propose contrasting solutions. But without the structures, frameworks and theoretical insights offered by these disciplines the teachers can only act from their own, always limited, understanding and experience. Knowledge is central to the agentic positioning of teachers because, as Beck and Young (2005) explain the disciplines offer “knowledge that permit(s) alternative possibilities to be thought” (p.193).

The knowledge base of teaching is not only defined by the disciplines, because what and how teachers teach is also influenced by their orientation to content (Ball, Thames, & Phelps, 2008). Teachers need to understand the structures, paradigms and content of the subjects they teach—what Shulman (1986) describes as “the amount and organization of knowledge per se in the mind of the teacher” (p. 9). Content knowledge, when conceptualized in a practice-based way encompasses not only subject matter for teaching but also pedagogical content knowledge. This requires knowledge about the relative difficulty of aspects of a subject, likely pre-

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

conceptions and misunderstandings learners may bring to their learning of the subject and typical progressions relevant to progress in the learning area.

Competencies that enable teachers to demonstrate their knowledge are also a vital resource for teachers' inquiries. It is important to note the integrative nature of competencies and the relevance of the notion of teacher competence given its relationship to student outcomes. Kunter et al.'s (2013) study, for example, revealed "positive effects of teachers' pedagogical content knowledge, enthusiasm for teaching, and self-regulatory skills on instructional quality, which in turn affected student outcomes" (p. 805). There are various competency types outlined in the model including cultural, intellectual, critical, relational and technical. While detailing the full range of relevant competencies is beyond the scope of this paper the following examples give a sense of what competencies involve. The cultural and relational competencies, for example, relate to the notion of culturally responsive teaching (see for example, Gay, 2000).

Competencies of a technical and intellectual nature include those vital to the practice of effective assessment. As Brown (2008) points out, widespread research findings suggest that "the vast majority of teachers, principals, and administrators have limited understandings of the more technical qualities of assessment information... whether it be derived from their own assessments of students, from external standardized test marks, or from their own in-class performance assessments" (p. 286).

The dispositions central to the TBL model are those of open-mindedness, discernment fallibility, and agency. When used by teachers as they inquire into their practice, the quality of both teachers' inquiry and practice are likely to improve. To be open-minded is as Hare (2003a) describes "to be critically receptive to alternative possibilities, to be willing to think again

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

despite having formulated a view, and to be concerned to defuse any factors that constrain one's thinking in predetermined ways" (p. 4-5). As Spiegel (2012) also points out, "open-mindedness is a powerful pedagogical tool. Teachers who display a willingness to consider new ideas and points of view welcome students to do the same." (p. 29).

The *disposition* of open-mindedness, though, presents a potential risk if it is not accompanied by a disposition of discernment. It is important not to confuse open-mindedness with neutrality or with an attitude of permissiveness regarding what other people believe. Rather, the TBL model requires 'critical receptiveness'—"a readiness to consider new ideas together with a commitment to accept only those that pass scrutiny" (Hare, 2003b, p. 79). The intellectual virtues of wisdom and understanding when used to discern possibilities that arise through open-mindedness prevent the collapse of open-mindedness into gullibility. This combination of dispositions ensures teachers willingness to consider alternative teaching goals, approaches and outcomes, but with due attention to the possibility that not all alternatives are equal, and their merits need careful consideration.

In order to bring about change in student outcomes, teachers need to feel influential in improving engagement and success for students. Agency positions them to take responsibility for the changes that are necessary to their teaching practice in response to ongoing formative assessment of students experience of, and success in, learning as distinct from attributing responsibility to deficits in students and their families (Bishop & Berryman, 2006). When teachers believe that their actions can make a difference and act on this belief, their learners benefit (Phelps, 2006). This disposition is closely allied to what Haberman (2004) refers to as persistence—the "deep and abiding belief" about the potential of "diverse children in poverty"

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

which is itself reflected in taking a “constant responsibility to make the classroom an interesting, engaging climate which on a daily basis will involve all the (children) in meaningful activities“, and in meeting the needs of everyone in the class by constantly searching for “what works” for each student (p. 132-133).

Ethical principles are also an important resource for inquiry. Codes of ethics provide a basis for guiding teachers in ethical decision-making (Association of American Educators; New Zealand Teachers Council, 2012) and outline fundamental principles of ethical conduct towards learners, family, society, and the profession. Often teaching standards refer to codes of ethics that sit outside of the standards themselves and that are not specifically integrated into the standards themselves. The TBL model integrates ethical principles as a *resource* that informs teachers’ inquiries. That positioning signals the importance of ethical principles being embedded in the daily work of teachers *with* learners. As Reynolds (2001) observed “a code of practice dictates what a teacher should do, but a code of ethics refers to how the teacher does it, which is perhaps more crucial” (p. 473). The crucial nature of ethical practice is, we argue, a justification for embedding ethics within standards rather than simply cross-referencing in a very general way to separately stated codes of ethics.

The *commitment to social justice resource* draws attention to the significant disparities in the distribution of educational opportunities, resources, and achievement, and to teachers’ responsibility to work as both educators and activists towards the democratic ideal of reducing inequities in society (Cochran-Smith, Gleeson, & Mitchell, 2010; Ludlow, Enterline, & Cochran-Smith, 2008). When this commitment is treated as a resource for inquiry into practice, social

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

justice becomes the concern of those working directly with diverse learners especially those who have experiences significant economic and educational disadvantage.

The Integration of Inquiries and Resources to Develop Teaching Standards

Through a process of integrating each *inquiry* with all of the key ideas in the *resources*, six teaching standards (Figure 2) are derived from the model. What we propose here are standards that are inquiry-oriented, active, applied and directly connected to students' engagement and learning. Possessing particular knowledge, skills and dispositions is not treated as the standard. Rather the standard emphasizes high quality inquiry closely connected to learners' experience that draws on education's body of knowledge, competencies, dispositions, ethical principles, and commitment to social justice. While terms such as 'using', 'demonstrating' and 'applying' are used in the standards (and those terms are common to standards critiqued as performative and reductionist), it is important to note that our model uses them in holistic statements that integrate the multiple and complex combinations of resources necessary to inquiry well into practice. They are not used in list fashion in ways that reduce teaching to discrete disconnected practices.

It is beyond the scope of this paper to detail the complex integration of *resources* with each of the *inquiries* but the following examples seek to illustrate this integration. The first example focuses on the *Learning Priorities Inquiry Standard*, which states:

Defensible decisions on learning priorities for each of my learners are made by drawing on education's body of knowledge about all learners, learning, society and culture, content, pedagogy, content pedagogy, curriculum and assessment, using cultural, intellectual, critical, relational and technical competencies, demonstrating dispositions including open-mindedness,

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

*fallibility, discernment and agency, applying **ethical principles** and demonstrating **commitment** to learners, families, the profession and society, and demonstrating commitment to **social justice** by challenging racism, inequity, deficit thinking, disparity and injustice.*

This standard requires teachers not just to identify learning priorities, but to do so for each student, and to be able to defend the decisions made. The knowledge base for such decision-making is complex. If decisions are to be more than technical, defensible decisions about outcomes for learners, they need to be sourced in an understanding of the purposes of education and schooling, and it needs to be recognized that these purposes are not uncontested. For example, a teacher without knowledge of the history and philosophy of education can mount only a very limited defense of why they are teaching what they are teaching.

At the more micro-level of decision-making defensible decisions about outcomes need to draw on knowledge of human development and of ‘typical’ learning trajectories in the subject to inform what is likely to be appropriate next steps for students of this age; on the literature on motivation to inform what learning is most likely to engage students; and on knowledge of curriculum requirements and external benchmarks to inform entitlements, aspirations and expectations for learning. This knowledge is itself embedded in a deep and flexible knowledge of the subject—its structures and paradigms—a basis for suggesting possibilities of next steps for students. Decisions about learning priorities for each learner need to also take account of knowledge of learners’ backgrounds, interests and prior knowledge to determine the experiences and strengths that students bring to learning and to identify the areas they need to develop; and of community and school aspirations and priorities.

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Teachers also need to draw on technical competencies such as interpreting assessment data about their learners to inform next steps; and on the intellectual competency of assessing competing priorities for the use of limited time in teaching. Teaching would be a relatively straightforward, but distinctly unsatisfying, activity if outcomes were pre-determined. A disposition of open-mindedness ensures that alternative possibilities for valued outcomes are given due consideration.

Because this standard is fundamentally about the relative, rather than absolute, importance of outcomes for each learner, and because teachers can seldom offer each learner undivided individual attention and consideration there are often trade-offs in making judgments about valued outcomes for learners. This normative dimension of decision-making inherent in this standard requires teachers to attend to ethical considerations—in particular to defend their professional judgments about prioritized learning with reference to their ethical commitment to do good for as many learners as possible, minimize harm, and strive to promote the physical, emotional, social, intellectual and spiritual wellbeing of all learners. The defense of priorities must, perhaps most importantly, be embedded in a deep commitment to social justice – to set expectations high and to avoid deficit thinking in decision-making. Framed in this way the practice component of the standard—making defensible decisions about learning priorities for each of my learners—is not relegated to a technocratic or simplistic defense of the use of time. Rather it is elevated to the status of a complex judgment process that assesses the relative merits of competing alternatives and that acknowledges that even the most powerfully defensible decisions are themselves contestable.

The second example focuses on the *Teaching Strategies Inquiry Standard*, which states:

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Defensible decisions on teaching strategies most likely to be successful for prioritized learning are made by drawing on education's body of knowledge about all learners, learning, society and culture, content, pedagogy, content pedagogy, curriculum and assessment, using cultural, intellectual, critical, relational and technical competencies, demonstrating dispositions including open-mindedness, fallibility, discernment and agency, applying ethical principles and demonstrating commitment to learners, families, the profession and society, and demonstrating commitment to social justice by challenging racism, inequity, deficit thinking, disparity and injustice.

This standard illustrates the iterative nature of the model with its referencing back to the preceding inquiry (about priorities) within the standard. The focus on 'prioritized learning' refers back to the learning priorities standard. It also highlights how pivotal the particularity of context is to these standards. Rather than set out expectations about particular pre-determined teaching strategies, it sets out an expectation about the professionalism and rigor a teacher demonstrates in identifying teaching strategies for their own learners, which are defensible given the particularities involved. The same teaching strategy could, given the *resources* teachers draw on and learners involved, be defensible in one context, yet not defensible in another. In this way the standards distinguish between more and less effective teachers in a way that takes account of the high levels of variation between teaching contexts and the heterogeneous groups of students teachers typically work with. These standards like the others proposed, are intended to promote better learning since they promote practice that is responsive to a teacher's students, rather than responsive to frameworks that take no account of those particular students.

Discussion

The standards proposed here position teachers as inquiring professionals whose work is directed at better learning for themselves and their students. The standards, and the model that underpins them, focus on practice and inquiry. They make explicit how knowledge, competencies, dispositions, ethical principles and social justice serve to strengthen the quality, rigor and professionalism of that inquiry. Three aspects of the design of these standards differentiate them from many existing approaches to standards. Firstly, the TBL standards position teachers as agentic decision makers in their own contexts and preserve professional autonomy. The teacher is the inquiring professional deciding on learning priorities, deciding on teaching strategies, enacting these strategies and examining their impact. They also understand and critique how the wider education context impacts on their work. Each of these *inquiries* informs decisions about the professional learning of the teacher. TBL standards thus call for an active teacher—an inquiring professional—who is responsive to the situation he or she teaches in, to his or her learner(s) and the desired outcomes (Aitken & Sinnema, 2008). Secondly, the model addresses the reductionist critique by acknowledging and reflecting the complexity of teaching in the standards rather than dealing with multiple standards in each of multiple domains. Finally, the explicit integration of resources with inquiries seeks to avoid the dualism of theory and practice. The practices foregrounded in the standards require and integrate the resources that in many previous standards have stood alone.

If standards are to function as intended, as a lever for system improvement, then standards need to connect explicitly with the points of the system that, if ‘moved’ will have the greatest impact. If standards concentrate attention on what teachers *know*, or on what teacher *know how*

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

to do their potential for actually improving practice is unlikely to be realized. Standards with that focus may well lead to greater teacher knowledge or know how, but will not necessarily lead to better application of that knowledge. We argue that by foregrounding practice – concentrating attention on key *inquiries* (inquiry into teaching priorities, teaching strategies, enactment of teaching, their impact on each learner, their own professional learning needs and the educational context) standards might have greater influence on the improvement of teaching and learning. A further benefit of the TBL approach is that it does not assume what knowledge or practices are required to make a difference for students since each situation will be unique. Rather, it assumes that teachers' high quality inquiries (drawing on relevant knowledge, competencies, dispositions and commitments) will lead them to practice in ways that better serve students.

One challenge arising from the presentation of the standards proposed here is that they are complex to read. We see this as inevitable given the relationships and connections the standards aim to represent and that are so critical to effective teaching. A limitation of our work is that while implementing standards with the complexity we propose is important, it is almost certain to be difficult. While we do not apologize for the complexity of the standards that are generated by the multi-faceted nature of the model they are derived from, we are mindful of the conditions and capacities required to use such standards in the work of licensing, certifying and evaluating teachers. It is beyond the scope of this paper to examine thoroughly the challenges such a model induces, but we anticipate those challenges would relate especially to the capacity of those evaluating teachers against such standards to attend to the complexity in each standard and the quality of the tools, processes and routines required to support such evaluation.

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Some may argue that our proposed approach is incompatible with policies that rely on or prioritize quantified measurements of teaching standards. We would argue that while the standards we set out lend themselves to rich descriptions of and explanations about inquiries into practice over time, they are not incompatible with measurement-oriented approaches. The kind of performance assessment processes and scoring systems used in the United States, for example, for national board certification (Sato, Wei, & Darling-Hammond, 2008) or the edTPA (Sato, 2014) could, with an orientation toward the inquiry-oriented standards we set out, be adapted to suit the TBL standards. We would also seek to make clear that the standards we propose do not *require* quantitative measurement to establish they have been met, and that qualitative approaches would be coherent with the purpose of establishing the quality and rigor of teachers' inquiries.

There is much in the existing literature about the role of professional standards for educators, and critiquing the approaches taken to those standards policies. The contribution we have sought to make is to go beyond critique of the policies set out by national governments and agencies, to offer an alternative approach to standards. Our offering is both at the broad level, signaling the principles of the alternative approach (that it is inquiry-oriented and reflects the complex, situated and active nature of teaching) and at the specific level (detailing specific alternative standards and how the origins of their design). It is our hope that by going beyond an argument for an alternative approach and an abstract notion of what they might look like, we can open up a dialogue about the merits of our proposal and its implications for those in various roles and settings.

Author copy - submitted and accepted version of the following publication:
Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Efforts to improve the educational outcomes of diverse learners cannot be successful without attention to the standards of the teaching profession. The influence of teaching quality on student achievement is widely recognized and teaching standards play a vital role in supporting and promoting the improvement of that teaching. Given the current educational climate, the demands on teachers and the challenges facing schools and policy-makers, it is timely to give consideration to alternative approaches to teaching standards. Such consideration could usefully question widely accepted conventions for the design of teaching standards and the models and frameworks that underpin them in order to develop and examine alternative approaches. Given standards are a basis for both self-monitored professional accountability and, increasingly, high-stakes system-wide accountability, all stakeholders ought to ensure that the standards to which we hold each other accountable are themselves of a high standard. Improving the standard of the standards requires attention to alternative approaches that might better serve the needs of educational policy makers, teacher educators, teachers and, most importantly, students.

Acknowledgements

This research was carried out as part of a project funded by the New Zealand Ministry of Education to prepare a discussion paper focused on initial teacher education outcomes. We are grateful to those individuals and members of the advisory group who engaged in the review and critique of multiple iterations of our proposed model and standards.

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Appendix A

Domains across different teacher standards documents

Jurisdiction	Year	Title	Domains	Career stages included				
				Graduating / qualified	Provisional registered	Fully registered	Accomp- lished	Lead
New Zealand	2007	Graduating teacher standards	- Professional knowledge - Professional practice - Professional values & Relationships	X				
	2015	Practising teacher criteria	- Professional relationships and professional values - Professional knowledge in practice			X		
Australia	2003	National framework for professional standards	- Professional knowledge - Professional practice - Professional values - Professional relationships			X	X	X
	2011	National professional standards for teachers	- Professional knowledge - Professional practice - Professional engagement	X		X	X	X
Scotland	2000	Quality assurance in initial teacher education: The standard for initial teacher education in Scotland	- Professional knowledge and understanding - Professional skills and abilities - Professional values and personal commitment.	X				
	2006	Standard for initial teacher education	- Professional knowledge and understanding - Professional skills and abilities - Professional values and personal commitment	X				

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

	2012	The standards for registration	- Professional values and personal commitment - Professional knowledge and understanding - Professional skills and abilities		X		X	
England	2007	Professional standards for teachers: Core	- Professional attributes - Professional knowledge and understanding - Professional skills	X			X	X
	2012	Teachers' standards	- Teaching - Personal and professional conduct				X	
Wales	2009	Qualified teacher status standards Wales	- Professional values and practice - Knowledge and understanding - Teaching				X	
Northern Ireland	2011	Teaching: The reflective profession	- Professional values and practice - Professional knowledge and understanding - Professional skills and application - Additional code of values and professional practice	X	X		X	X
USA	2011	InTASC Model core teaching standards - A resource for state dialogue	- Performances - Essential knowledge - Critical dispositions	Within the categories of: - The learner and learning - Content - Instructional practice - Professional responsibility	X			

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

References

- Aitken, G., & Sinnema, C. (2008). *Effective pedagogy in social sciences / Tikanga a iwi: Best Evidence Synthesis Iteration*. Wellington, NZ: Ministry of Education.
- Argyris, C., & Schön, D. (1974). *Theory in practice: Increasing professional effectiveness*. San Francisco, CA: Jossey-Bass.
- Association of American Educators. Code of ethics for educators. accessed 2013, from www.aeteachers.org/index.php/about-us/aae-code-of-ethics
- Australian Institute for Teaching and School Leadership. (2011). National professional standards for teachers. Carlton South, Australia: Education Services Australia.
- Ball, D. L., Thames, M. H., & Phelps, G. (2008). Content knowledge for teaching: What makes it special? *Journal of Teacher Education*, 59(5), 389-407. doi: 10.1177/0022487108324554
- Barber, M. (1992). An entitlement curriculum: A strategy for the nineties. *Journal of Curriculum Studies*, 24(5), 449-455. doi: 10.1080/0022027920240502
- Baumert, J., Kunter, M., Blum, W., Brunner, M., Voss, T., Jordan, A., . . . Tsai, Y.-M. (2010). Teachers' mathematical knowledge, cognitive activation in the classroom, and student progress. *American Educational Research Journal*, 47(1), 133-180. doi: 10.3102/0002831209345157
- Beck, J. (2009). Appropriating professionalism: Restructuring the official knowledge base of England's 'modernised' teaching profession. *British Journal of Sociology of Education*, 30(1), 3-14. doi: 10.1080/01425690802514268
- Beck, J., & Young, M. (2005). The assault on the professions and the restructuring of academic and professional identities: A Bernsteinian analysis. *British Journal of Sociology of Education*, 26(2), 183-197. doi: 10.1080/0142569042000294165
- Bengtsson, J. (1995). Theory and practice -Two fundamental categories in the philosophy of teacher education. *European Journal of Teacher Education*, 18(2-3), 231-238. doi: 10.1080/0261976950180208
- Bishop, R., & Berryman, M. (2006). *Culture speaks: Cultural relationships and classroom learning*. Wellington, NZ: Huia Publishers.
- Brown, G. (2008). Assessment literacy training and teachers' conceptions of assessment. In C. M. Rubie-Davies & C. Rawlinson (Eds.), *Challenging thinking about teaching and learning* (pp. 269-285). New York, NY: Nova Science Publishers.
- Cochran-Smith, M. (2001). Constructing outcomes in teacher education: Policy, practice and pitfalls. *Education Policy Analysis Archives*, 9(11). doi: 10.14507/epaa.v9n11.2001
- Cochran-Smith, M. (2003). The unforgiving complexity of teaching: Avoiding simplicity in the age of accountability. *Journal of Teacher Education*, 54(1), 3-5. doi: 10.1177/0022487102238653
- Cochran-Smith, M., Ell, F., Ludlow, L., Grudnoff, L., & Aitken, G. (2014). The challenge and promise of complexity theory for teacher education research. *Teachers College Record*, 116(5).
- Cochran-Smith, M., Gleeson, A., & Mitchell, K. (2010). Teacher education for social justice: What's pupil learning got to do with it? *Berkeley Review of Education*, 1(1), 35-61.

Author copy - submitted and accepted version of the following publication:

- Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*
- Cochran-Smith, M., & Lytle, S. L. (1990). Teacher research and research on teaching: The issues that divide. *Educational Researcher*, 19(2), 2-11. doi: 10.3102/0013189X019002002
- Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education*, 24, 249-305. doi: 10.2307/1167272
- Cochran-Smith, M., & Lytle, S. L. (2009). *Inquiry as stance: Practitioner research for the next generation*. New York, NY: Teachers College Press.
- Cogan, M. L. (1955). The problem of defining a profession. *Annals of the American Academy of Political and Social Science*, 297, 105-111.
- Council of Chief State School Officers. (2008). Educational Leadership Policy Standards: Interstate School Leaders Licensure Consortium (ISLLC): Council of Chief State School Officers.
- Council of Chief State School Officers. (2011). InTASC Model core teaching standards - A resource for state dialogue. Washington, DC: Council of Chief State School Officers.
- Crowe, E. (2010). Measuring what matters: A stronger accountability model for teacher education. Washington, DC: Centre for American Progress.
- Darling-Hammond, L. (2004). Standards, accountability, and school reform. *Teachers College Record*, 106(6), 1047-1085. doi: 10.1111/j.1467-9620.2004.00372.x
- Darling-Hammond, L. (2006). *Powerful teacher education: Lessons from exemplary programs*. San Francisco, CA: Jossey-Bass.
- Darling-Hammond, L. (2010). Teacher education and the American future. *Journal of Teacher Education*, 61(1-2), 35-47. doi: 10.1177/0022487109348024
- Darling-Hammond, L. (2012). Creating a comprehensive system for evaluating and supporting effective teaching. Stanford, CA: Stanford Center for Opportunity Policy in Education.
- Davis, B., & Sumara, D. (2010). 'If things were simple...': Complexity in education. *Journal of Evaluation in Clinical Practice*, 16(4), 856-860. doi: 10.1111/j.1365-2753.2010.01499.x
- Delandshere, G., & Arens, S. A. (2001). Representations of teaching and standards-based reform: Are we closing the debate about teacher education? *Teaching and Teacher Education*, 17(5), 547-566. doi: 10.1016/s0742-051x(01)00013-0
- DeLuca, C., & Bellara, A. (2013). The current state of assessment education: Aligning policy, standards, and teacher education curriculum. *Journal of Teacher Education*, 64(4), 356-372. doi: 10.1177/0022487113488144
- Department for Education & Skills. (2004). National standards for headteachers. London, UK: Department for Education and Skills.
- Department of Education. (2012). Teachers' standards: Effective from 1 September 2012. England: Department of Education, Crown copyright.
- Dewey, J. (1933). *How we think: A restatement of the relations of reflective thinking to the educative process* (2nd revised ed.). Boston, DC: Heath.
- Dillon, J. T. (2009). The questions of curriculum. *Journal of Curriculum Studies*, 41(3), 343 - 359.
- Donaldson, M. L. (2013). Principals' approaches to cultivating teacher effectiveness constraints and opportunities in hiring, assigning, evaluating, and developing teachers. *Educational Administration Quarterly*, 49(5), 838-882. doi: 10.1177/0013161X13485961

Author copy - submitted and accepted version of the following publication:

- Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education* Education Council. (2015). Practising Teacher Criteria. Wellington, NZ: Education Council New Zealand.
- Fairbanks, C. M., Duffy, G. G., Faircloth, B. S., Ye He, Levin, B., Rohr, J., & Stein, C. (2010). Beyond knowledge: Exploring why some teachers are more thoughtfully adaptive than others. *Journal of Teacher Education*, 61(1-2), 161-171. doi: 10.1177/0022487109347874
- Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 103(6), 1013-1055. doi: 10.1111/0161-4681.00141
- Fenstermacher, G. D. (1978). A philosophical consideration of recent research on teacher effectiveness. *Review of Research in Education*, 6, 157-185. doi: 10.2307/1167245
- Fenstermacher, G. D., & Richardson, V. (2005). On making determinations of quality in teaching. *Teachers College Record*, 107(1), 186-213. doi: 10.1111/j.1467-9620.2005.00462.x
- Feuerstein, A. (2001). 'Hyper-rationalization' revisited. *The Educational Forum*, 65(2), 108-118. doi: 10.1080/00131720108984476
- Flexner, A. (1915). Is social work a profession. *School and Society*, 1, 904.
- Flexner, A. (2001). Is social work a profession? *Research on Social Work Practice*, 11(2), 152-165. doi: 10.1177/104973150101100202
- Furlong, J., Barton, L., Miles, S., Whiting, C., & Whitty, G. (2000). *Teacher education in transition: Re-forming professionalism?* Buckingham, UK: Open University Press.
- Gay, G. (2000). *Culturally responsive teaching: Theory, research, & practice*. New York, NY: Teachers College Press.
- Gay, G. (2010). Acting on beliefs in teacher education for cultural diversity. *Journal of Teacher Education*, 61(1-2), 143-152. doi: 10.1177/0022487109347320
- General Teaching Council for Northern Ireland. (2011). *Teaching: The reflective profession*. Belfast: General Teaching Council for Northern Ireland.
- Goldstein, J. (2009). Designing transparent teacher evaluation: The role of oversight panels for professional accountability. *Teachers College Record*, 111(4), 893-933.
- Griffiths, D. (1997). The case for theoretical pluralism. *Educational Management Administration & Leadership*, 25(4), 371-380. doi: 10.1177/0263211X97254003
- Grossman, P. (2008). Responding to our critics: From crisis to opportunity in resesarch on teacher education. *Journal of Teacher Education*, 59(1), 10-23. doi: 10.1177/0022487107310748
- Grossman, P., Cohen, J., Ronfeldt, M., & Brown, L. (2014). The test matters the relationship between classroom observation scores and teacher value added on multiple types of assessment. *Educational Researcher*, 43 (6), 293-303. doi: 10.3102/0013189X14544542
- Haberman, M. (2004). *Star teachers: The ideology and best practice of effective teachers of diverse children and youth in poverty*. Houston, TX: The Haberman Educational Foundation.
- Hammerness, K., Darling-Hammond, L., Bransford, J., Berliner, D., Cochran-Smith, M., McDonald, M., & Zeichner, K. M. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world:*

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

What teachers should learn and be able to do (1st ed., pp. 358-389). San Francisco, CA: Jossey-Bass.

Hare, W. (2003a). The ideal of open-mindedness and its place in education. *Journal of Thought*, 38(2), 3-10. doi: jstor.org/stable/42589737

Hare, W. (2003b). Is it good to be open-minded? *International Journal of Applied Philosophy*, 17(1), 73-87. doi: 10.5840/ijap20031718

Helsing, D. (2007). Regarding uncertainty in teachers and teaching. *Teaching and Teacher Education: An International Journal of Research and Studies*, 23(8), 1317-1333. doi: 10.1016/j.tate.2006.06.007

Hill, H. C., Rowan, B., & Ball, D. L. (2005). Effects of teachers' mathematical knowledge for teaching on student achievement. *American Educational Research Journal*, 42(2), 371-406. doi: 10.3102/00028312042002371

Horn, I. S., & Little, J. W. (2010). Attending to problems of practice: Routines and resources for professional learning in teachers' workplace interactions. *American Educational Research Journal*, 47(1), 181-217. doi: 10.3102/0002831209345158

Ingvarson, L. (2003). Building a learning profession. *ACER Policy Briefs*. from http://research.acer.edu.au/professional_dev/5

Jackson, P. W. (1974). *Life in classrooms*. New York, NY: Holt, Rinehart & Winston.

King, M. B. (1994). Locking ourselves in: National standards for the teaching profession. *Teaching and Teacher Education*, 10(1), 95-108. doi: 10.1016/0742-051X(94)90043-4

Kleinhenz, E., & Ingvarson, L. (2007). Standards for teaching: Theoretical underpinnings and applications. *ACER Policy Briefs*. from http://research.acer.edu.au/teaching_standards/1/

Kleinhenz, E., & Serafini, F. (2002). Possibilities and challenges: The National Board for Professional Teaching Standards. *Journal of Teacher Education*, 53(4), 316-327. doi: 10.1177/0022487102053004004

Kunter, M., Klusmann, U., Baumert, J., Richter, D., Voss, T., & Hachfeld, A. (2013). Professional competence of teachers: Effects on instructional quality and student development. *Journal of Educational Psychology*, 105(3), 805-820. doi: 10.1037/a0032583

Labaree, D. G. (2000). On the nature of teaching and teacher education: Difficult practices that look easy. *Journal of Teacher Education*, 51(3), 228-233. doi: 10.1177/0022487100051003011

Ladson-Billings, G. (2008). A letter to our next president. *Journal of Teacher Education*, 59(3), 235-239. doi: 10.1177/0022487108317466

Ladwig, J. G. (2010). Beyond academic outcomes. *Review of Research in Education*, 34(1), 113-141. doi: 10.3102/0091732X09353062

Leinhardt, G., Young, K. M., & Merriman, J. (1995). Integrating professional knowledge: The theory of practice and the practice of theory. *Learning and Instruction*, 5(4), 401-408. doi: 10.1016/0959-4752(95)00025-9

Lewis, W. D., & Young, T. V. (2013). The politics of accountability: Teacher education policy. *Educational Policy*, 27(2), 190-216. doi: 10.1177/0895904812472725

Ludlow, L. H., Enterline, S. E., & Cochran-Smith, M. (2008). Learning to teach for social justice-beliefs scale: An application of Rasch measurement principles. *Measurement and Evaluation in Counselling and Development*, 40(4), 194-214.

Author copy - submitted and accepted version of the following publication:

- Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*
- Nelsen, P. J. (2015). Intelligent dispositions: Dewey, habits and inquiry in teacher education. *Journal of Teacher Education*, 66(1), 86-97. doi: 10.1177/0022487114535267
- New Zealand Teachers Council. (2007). Graduating teacher standards. Wellington, NZ: New Zealand Teachers Council.
- New Zealand Teachers Council. (2012). New Zealand teachers' council code of ethics for registered teachers. Wellington, NZ: New Zealand Teachers Council.
- Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, 81(3), 376-407. doi: 10.3102/0034654311413609
- Palmer, R. R. (1953). Is teaching a profession? *The Phi Delta Kappan*, 34(4), 139-142.
- Phelps, P. H. (2006). The dilemma of dispositions. *Clearing House*, 79(4), 174-178.
- Priestley, M., & Sinnema, C. (2014). Downgraded curriculum? An analysis of knowledge in new curricula in Scotland and New Zealand. *Curriculum Journal*.
- Quality Assurance Agency for Higher Education. (2000a). Quality assurance in initial teacher education: The standard for initial teacher education in Scotland. Gloucester, Scotland: Quality Assurance Agency for Higher Education.
- Quality Assurance Agency for Higher Education. (2000b). Quality assurance in initial teacher education: The Standard for initial teacher education in Scotland - benchmark information. Gloucester, Scotland: Quality Assurance Agency for Higher Education.
- Reynolds, M. (2001). Education for inclusion, teacher education and the Teacher Training Agency Standards. *Journal of In-Service Education*, 27(3), 465-476. doi: 10.1080/13674580100200164
- Robinson, V. M. J., Sinnema, C. E. L., & Le Fevre, D. (2014). From persuasion to learning: An intervention to improve leaders' response to disagreement. *Leadership and Policy in Schools*, 13(3), 260-296. doi: 10.1080/15700763.2014.922997
- Sato, M. (2014). What is the underlying conception of teaching of the edTPA? *Journal of Teacher Education*, 65(5), 421-434. doi: 10.1177/0022487114542518
- Sato, M., Wei, R. C., & Darling-Hammond, L. (2008). Improving teachers' assessment practices through professional development: The case of National Board Certification. *American Educational Research Journal*, 45(3), 669-700.
- Schunk, D., & Zimmerman, B. (1994). *Self-regulation of learning and performance: Issues and educational applications*. New Jersey: Lawrence Erlbaum Associates.
- Schwab, J. J. (1969). The practical: A language for curriculum *School Review*, 78, 1-24.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14.
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the New Reform. *Harvard Educational Review*, 57(1), 1-22.
- Shulman, L. S. (2004). Professional development: Learning from experience. In S. Wilson (Ed.), *The wisdom of practice: Essays on teaching, learning, and learning to teach* (pp. 503-522). San Francisco, CA: Jossey-Bass.
- Sinnema, C. (2015). The ebb and flow of curricular autonomy: Balance between local freedom and national prescription in curricula. In D. Wyse, L. Hayward, & J. Pandya (Eds.), *The SAGE Handbook of Curriculum, Pedagogy and Assessment* (Vol. 2, pp. 965-983). London: SAGE.

Author copy - submitted and accepted version of the following publication:

- Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*
- Sinnema, C., & Aitken, G. (2011). Teaching as inquiry in the New Zealand curriculum: Origins and implementation. In J. Parr, H. Hedges, & S. May (Eds.), *Changing trajectories of teaching and learning* (pp. 29-48). Wellington, NZ: NZCER.
- Sinnema, C., & Aitken, G. (2013). Emerging International Trends in Curriculum. In M. Priestley & G. J. J. Biesta (Eds.), *Reinventing the Curriculum: New Trends in Curriculum Policy and Practice*. London: Bloomsbury Academic.
- Sinnema, C., & Ludlow, L. H. (2013). A Rasch approach to the measurement of responsive curriculum practice in the context of curricula reform. *The International Journal of Educational and Psychological Assessment*, 12(2), 33-57.
- Spiegel, J. S. (2012). Open-mindedness and intellectual humility. *Theory and Research in Education*, 10(1), 27-38. doi: 10.1177/1477878512437472
- Stenhouse, L. (1975). *An introduction to curriculum research and development*. London, UK: Heinemann Educational Books.
- Taba, H. (1962). *Curriculum development: Theory and practice*. New York: Harcourt, Brace and World Inc.
- Talbot, M. (2004). Monkey see, monkey do: A critique of the competency model in graduate medical education. *Medical Education*, 38(6), 587-592. doi: 10.1046/j.1365-2923.2004.01794.x
- Teacher Quality and Educational Leadership Taskforce. (2003). A national framework for professional standards for teaching. Carlton South, Australia: Curriculum Cooperation.
- The General Teaching Council for Scotland. (2006). Standard for initial teacher education. Edinburgh, Scotland: The General Teaching Council for Scotland, December 2006.
- The General Teaching Council for Scotland. (2012). Standard for registration: Mandatory requirements for registration with the General Teaching Council for Scotland. Edinburgh, Scotland: The General Teaching Council for Scotland.
- Training and Development Agency for Schools. (2007). Professional standards for teachers: Core. London, UK: Training and Development Agency for Schools.
- Turner, E. E., & Drake, C. (2016). A review of research on prospective teachers' learning about children's mathematical thinking and cultural funds of knowledge. *Journal of Teacher Education*, 67(1), 32-46. doi: 10.1177/0022487115597476
- Tyler, K. M., Boykin, A. W., & Walton, T. R. (2006). Cultural considerations in teachers' perceptions of student classroom behavior and achievement. *Teaching and Teacher Education*, 22(8), 998-1005. doi: 10.1016/j.tate.2006.04.017
- Tyler, R. W. (1949). *Basic principles of curriculum and instruction*. Chicago, US: University of Chicago Press
- Wang, J., Lin, E., Spalding, E., Klecka, C. L., & Odell, S. J. (2011). Quality teaching and teacher education: a kaleidoscope of notions. *Journal of Teacher Education*, 62, 331+.
- Wang, J., Odell, S. J., Klecka, C. L., Spalding, E., & Lin, E. (2010). Understanding teacher education reform. *Journal of Teacher Education*, 61(5), 395-402. doi: 10.1177/0022487110384219
- Welsh Government. (2009). Qualified teacher status standards Wales.
- Wise, A. E., & Leibbrand, J. A. (2001). Standards in the new millennium: Where we are, where we're headed. *Journal of Teacher Education*, 52(3), 244-255. doi: 10.1177/0022487101052003007

Author copy - submitted and accepted version of the following publication:

Sinnema, C. E. L., Meyer, F., Aitken, G. (accepted, August 2016). Capturing the Complex, Situated and Active Nature of Teaching through Inquiry-oriented Standards for Teaching. *Journal of Teacher Education*

Woolf, S. B. (2014). Special education professional standards how important are they in the context of teacher performance evaluation? *Teacher Education and Special Education*, 38(4), 276-290. doi: 10.1177/0888406414557284

Yinger, R. J., & Hendricks-Lee, M. S. (2000). The language of standards and teacher education reform. *Educational Policy*, 14(1), 94-106. doi: 10.1177/0895904800014001008