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TEACHERS' BELIEFS ABOUT ASSESSMENT

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"Assessment provides a key interactive context for the struggle for power in the classroom" (Torrance & Pryor, 1998, p. 82) and may be appropriated for learning, or, more negatively, for social control in order to ensure conformity to external expectations, especially the demands of curriculum coverage and classroom management.

(James & Pedder, 2006, p. 116)

The ability to appropriate assessment for social control is evident across national boundaries where high-stakes assessment practices are employed to control learners, teachers, and schools. The use of assessment for such purposes has been widely criticized, yet the practices continue and seem to expand (Nichols & Berliner, 2007). At the classroom level, motivational researchers have warned against the use of competition and external reinforcement as part of assessment practices as these approaches support a performance goal structure and garner negative effects for students' intrinsic motivation (e.g., Ames & Archer, 1988). The potential negative consequences of assessment practices combined with its ubiquitous nature in K-12 schools suggests that there are potentially a variety of beliefs that teachers may hold about assessment, that in conjunction with other beliefs and contextual influences, may influence the practices they employ in the classroom. Certainly, these beliefs will filter how preservice and practicing teachers interpret information about new approaches to assessment and frame their curriculum design and lesson planning (Fives & Buehl, 2012). It is with these concerns in mind that we undertook this investigation of the empirical research on K-12 preservice and practicing teachers' beliefs about assessment.

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BELIEF TERMINOLOGY IN THE FIELD OF EDUCATIONAL ASSESSMENT

Nespor (1987) theorized that beliefs reflect an (1) existential presumption (i.e., personal truths that are incontrovertible and unknown to the individual), (2) alternative perspective to experience reality (i.e., what *should be* rather than what *is* perspective), (3) affective and evaluative components (i.e., guided by feelings/judgments rather than rationality/logic), and (4) episodic rather than semantic structure. Further, belief structures or systems refer to the set of beliefs individuals (collectively or individually) hold about a particular topic (Pajares, 1992). Although some research on teachers' beliefs has longer traditions of study (e.g., personal epistemology, self-efficacy, and specific content domains such as science and mathematics) and have more clearly delineated the constructs of knowledge and beliefs, researchers of teachers' assessment beliefs use varied subsuming terminology such as "conceptions" (as described by Thompson, 1992) and "values" to describe variables of interest.

Thompson (1992) described conceptions "as a more general mental structure, encompassing beliefs, meanings, concepts, propositions, rules, mental images, preferences, and the like" (p. 130). Essentially, the concept of a conception subsumes knowledge and belief into a singular construct and provides a framework for describing teachers' overall perception and awareness of assessment (in this case). Brown and colleagues, for example, have established a strong multinational line of research focused on teachers' conceptions of the purpose of assessment (e.g., Brown, 2004, 2006; Harris & Brown, 2009). Similarly, the term "value" is also used to describe teachers' assessment-related beliefs. James and Pedder's (2006) instrument, for example, is designed around a set of theoretically identified assessment *practices* and beliefs, measured in terms of how much teachers *value* each practice. The focus of research in this area seems to be examining the gap between teachers' frequency of use and beliefs about the importance of each practice. Thus, for the purposes of this chapter we use the terms conceptions and values (as used by the original authors) to capture teachers' assessment beliefs.

METHODOLOGY

Peer-reviewed, empirical articles on preservice and K-12 practicing teachers' beliefs about assessment published after 2000 (except for a few seminal pieces, e.g., Webb, 1992) and written in English were included in this review. Theoretical manuscripts, dissertations, and conference papers were excluded. The focus of our review is on teachers' beliefs about assessment; we therefore excluded manuscripts that measured the relationship between teachers' beliefs and feedback. Due to space limitations, some beliefs were considered outside the scope of this review including beliefs about assessment of (1) students with special needs, (2) teachers and value-added models, (3) preschool education, and (4) specific academic (e.g., science) and non academic (e.g., socio emotional) content when the content specificity overshadowed the assessment belief research.

We engaged in several strategies to identify a pool of empirical articles for inclusion. First, we performed searches in Google Scholar, Academic Search Premier, ERIC, Psych Info, and PsychArticles using a combination of the search terms: assessment,

beliefs, conceptions, values, and teach*. We read titles and abstracts to identify the articles that met our inclusion criteria and those that were relevant were pasted into a Word document. The document was organized and checked to eliminate any redundancy. Second, we reviewed the table of contents for the following journals: *Teaching and Teacher Education*, *Assessment in Education: Principles, Policy and Practice*, and *Educational Measurement: Issues and Practice* from 2000 to present to identify articles missing from our previous searches. These titles/abstracts were added to the document. Lastly, we re-read each abstract to ensure that each article met the inclusion criteria. This resulted in 28 empirical articles that met our inclusion criteria.

CHAPTER OVERVIEW

The purpose of this chapter is to overview the research on teachers' beliefs and conceptions about assessment.¹ We start by examining the research on teachers' beliefs and conceptions about the purposes of assessment and organize these research findings along a continuum of purposes from pedagogical to accounting. In the next section, we review the research on teachers' beliefs and conceptions about the different forms of assessment including various assessment methods and the use of formative assessment techniques. Because research suggests that understanding the assessment context may help to explain cross-cultural differences in teachers' conceptions of assessment, we review cross-cultural differences in teachers' conceptions of assessment in low- and high-stake accountability contexts. We conclude by presenting the research on the alignment between teachers' beliefs/conceptions and their teaching practices. Findings and implications are then discussed.

BELIEFS ABOUT THE PURPOSES OF ASSESSMENT

We identified five approaches to examining teachers' beliefs about the purposes of assessment (i.e., Brown, 2004, 2006; Davis & Neitzel, 2011; Harris & Brown, 2009; Karp & Woods, 2008; Remesal, 2007). Common across these investigations was the framing of assessment purposes as serving different goals such as learning/teaching goals or goals of accountability (of students, teachers, or schools). These differences were articulated by Remesal (2007) as aligning on a continuum of assessment purposes. The pedagogical end describes assessment as serving to regulate teaching and learning whereas the accounting end is regarded as quantifying results and grading learners and school. We found this continuum to be both theoretically compelling and conceptually pragmatic for evaluating other approaches to measuring teachers' beliefs about the purposes of assessment. Therefore, we used this notion of a continuum of purposes to illustrate the similarities and differences across these investigations.

At one end of the continuum we recognize the extreme pedagogical perspective which focuses on assessment for learning. The opposite extreme reflects assessment used for the sole purpose of high-stakes accountability. Table 16.1 provides an overview of this continuum and the studies included in it. In our analysis of the research in this area we mapped each investigation onto our continuum of purposes. This allocation of purposes was guided by the ways beliefs were articulated by the scholars of the studies we reviewed.

Table 16.1 Continuum of Beliefs and Conceptions About the Purposes of Assessment

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Beliefs and Conceptions about the Purpose of Assessment					
Author	Extreme Pedagogical		Mixed		Extreme Accounting
		Irrelevant			
Remesal (2007)	Assessments role in learning	Assessments' role in teaching	Assessments role in the certification of learning		Assessments role in the accountability of students' achievement as indicator of teacher prof ability
Brown (2004; 2006)	Improves Education –describes abilities –improves learning –improves teaching –is valid				School accountability Student accountability
Harris & Brown (2009)	Joint teacher and student use for individualizing learning Teacher use for individualizing learning Facilitating group instruction		Extrinsically motivating students	Reporting to parents	External reporting
Karp & Woods (2008)	TA: Facilitate learning	TA: Determine where students are with skill & knowledge SA: Show them where they are in relation to goals	SA: Motivate	TA: Show achievement of standards TA: Evaluate teacher effectiveness	
Davis & Neitzel (2011)	TA: Evaluate/ inform instruction TA: Gauge student investment SA: Cover material	TA: Identify student for remediation SA: Generate feedback	TA: Evaluate learning SA: Student accountability	PA: Inform	HU: Teacher accountability HU: Prepare for high stakes tests

SA = Student audience
TA = Teacher audience
PA = Parental audience
HU = "Higher-ups"

The perspectives in this section reflect varied research goals, methodology, and participants. Here we provide a brief overview of each study, and in the sections that follow we describe the findings from each in relation to our continuum of beliefs and conceptions about the purposes of assessment. The majority of work we describe in this section was conducted using qualitative research methodology. Remesal (2007) analyzed the interview transcripts and artifacts from 50 Spanish teachers and through this process identified four dimensions of assessment and mapped them onto a continuum of purposes from pedagogical to accounting. Harris and Brown (2009) adopted a phenomenographic approach to investigate whether Brown's (2004, 2006) model of teachers' conceptions about the purpose of assessment and his resulting instrument adequately assessed the full spectrum of teachers' beliefs about the purposes of assessment. Their participants, 26 New Zealand teachers, were interviewed, and their responses were analyzed for conceptions of the purpose of assessment (Harris & Brown, 2009). The analysis revealed seven conceptions of assessment.

Two investigations in the United States identified conceptions of assessment with respect to different audiences. Davis and Neitzel (2011) conducted a qualitative investigation with 15 practicing middle school teachers and described teachers' assessment-related beliefs for four different audiences: teachers, students, parents, and "higher-ups" (i.e., state and district level audiences; Davis & Neitzel, 2011, p. 208). Karp and Woods (2008) investigated preservice physical education teachers' beliefs about assessment multiple times (prior to, during, and after implementing a field-based unit) and through multiple sources (i.e., interview, survey, artifacts) during a semester long course in physical education curriculum. These preservice teachers held distinct beliefs about the purposes of assessment for teachers and for students (based on their personal experiences in high school) and these beliefs fall along our continuum of purposes.

Employing quantitative methods, Brown (2004, 2006) has embarked on a long line of research to describe and frame teachers' conceptions of the purpose of assessment. Grounded in the literature on assessment, Brown identified three commonly reported purposes of assessment, namely, assessment is used to: (1) advance teaching and learning, (2) hold students accountable, and (3) hold teachers and schools accountable (Heaton, 1975; Torrance & Pryor, 1998; Warren & Nisbet, 1999; Webb, 1992). In addition to these conceptions of the purpose of assessment, Brown (2004) argued for the inclusion of a fourth conception, that assessment is "fundamentally irrelevant to the life and work of teachers and students" (p. 304). Brown developed a four-factor tool to measure teachers' conceptions of these purposes called the Conceptions of Assessment—III (COA-III) questionnaire (e.g., Brown, 2004, 2006).² Here we describe the four factors he identified in terms of our continuum of assessment purpose beliefs.

Pedagogical Beliefs and Conceptions About the Purposes of Assessment

Conceptions of assessment at the extreme pedagogy end of our continuum included beliefs about the role of assessment in learning (Remesal, 2007). This included the conception that assessment is for the joint use of teachers and students to facilitate learning (Harris & Brown, 2009) and the belief that assessment is an opportunity for students to be exposed to and cover material (Davis & Neitzel, 2011).

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Slightly less extreme were beliefs that the purposes of assessment vary by audience, and for the teacher audience, the purpose of assessment is to facilitate learning (Karp & Woods, 2008), evaluate and inform instruction, and gauge student investment (Davis & Neitzel, 2011). In a similar vein, the teachers in Harris and Brown's (2009) investigation indicated that assessment is used by teachers to individualize learning. These functions serve to provide teachers with useful information for making informed pedagogical decisions.

Toward the middle-pedagogy portion of our continuum, we have placed the first factor of Brown's (2004, 2006) COA-III. The first factor is associated with responses that reflect conceptions that assessment improves teaching and learning (Brown, 2004). The items associated with this factor target conceptions of assessment as improving learning and teaching (i.e., pedagogically focused) as well as conceptions that assessment describes abilities (i.e., pedagogically focused but perhaps not as extreme). Additionally, this factor also includes conceptions about the validity of assessment, which Brown (2004) persuasively argued was a prerequisite for conceiving of assessment as improving education. If the results cannot be trusted, then teachers and students cannot use them to improve learning or teaching. Thus, this factor marries notions of formative assessment, diagnostic assessment, and validity under the umbrella belief that assessment improves education. For these reasons we placed this in the middle of our pedagogy section as parts of this factor reflect more or less of an emphasis on the purpose of assessment as extreme pedagogy.

Moving toward the middle of the continuum, but still within pedagogy, we aligned several conceptions of assessment purposes that seemed to suggest a pedagogical goal yet carried an accounting tone. In other words, the assessment was or could be used as evidence to account for teachers' decisions and actions or were used to put students "on notice" with respect to class work. In this section of our continuum, we included conceptions of assessment that focused on the role of assessment in teaching (Remesal, 2007), specifically for facilitating group instruction (e.g., to group students or manage behavior; Harris & Brown, 2009), to diagnose students' progress in acquiring knowledge and developing skills (Karp & Woods, 2008), and to identify students for remediation (Davis & Neitzel, 2011). Teachers also reported conceptions that assessment was to illustrate for students their progress on class goals and to generate feedback.

Mixed Beliefs and Conceptions About the Purposes of Assessment

We aligned some of the conceptions of the purpose of assessment in the center of our continuum because they blended pedagogical or accounting purposes. The alignment of these conceptions towards one end or the other of our continuum would depend on how the assessment was employed in context. For example, in Harris and Brown's (2009) investigation, teachers described assessment as a tool used to motivate students through competition and information. Teachers described assigning scores so students could evaluate their place normatively as well as giving specific positive feedback on key skills. The analysis offered by Harris and Brown (2009) lumped these conceptions of assessment into a singular conception of external motivation, which depending on the actual conception (i.e., to incite competition or

provide descriptive positive feedback) may be seen as a stronger or weaker conception of assessment for student accountability. Similarly, in Karp and Woods' (2008) investigation, preservice teachers identified an extrinsic motivational conception of assessment that emphasized competition and comparison akin to the extrinsic motivation described by Harris and Brown (2009). Thus, this purpose was also categorized in the center of our continuum.

Lastly, teachers in Davis and Neitzel's (2011) research reported that assessment can be used by teachers to evaluate learning and to hold students accountable. These conceptions were considered more central on our continuum because both of these functions suggest a level of assessment that, depending on its interpretation and application, could be used for pedagogical and/or accounting purposes.

Accounting Beliefs and Conceptions About the Purposes of Assessment

At the other end of this continuum are teachers' conceptions of assessment that reflect accounting purposes, that is to make teachers and schools accountable through evaluations of student performance, typically on high-stakes tests. Several of these conceptions aligned with the accountability purpose but were not categorized as extreme instances. Teachers in Brown and Harris's (2009) research, for example, identified reporting to parents as a purpose of assessment. Although the majority of teachers argued that they reported to parents to defend their grading practices or that parents were more interested in comparative information (i.e., accounting purposes), some reporting seemed to suggest a more pedagogical purpose (i.e., to inform parents of their child's needs so that teachers and parents could work together).

Davis and Neitzel (2011) reported a similar function of assessment for the parent audience as that noted in Harris and Brown (2009). For many teachers, assessment was about giving parents the information they wanted, and for others, assessment was about sharing student progress on skills with parents (Davis & Neitzel, 2011). Although this difference in beliefs about the function of reporting to parents suggests assessment may serve pedagogical or accounting purposes, a greater number of teachers conceived of parents as another group to whom they were accountable. Thus, we placed both purposes toward the accountability end of our continuum, recognizing that teachers need to consider their own perspective on this purpose as well as their hypothesis as to how parents perceive this purpose. In Karp and Woods's (2008) investigation, teachers identified two additional conceptions of assessments that aligned with the accountability end of the continuum, yet do not constitute extreme accountability purposes. These included teacher assessments that showed the achievement of standards by documenting student learning and teacher assessments used to evaluate teacher effectiveness.

Several conceptions of assessment were identified as representing extreme accounting purposes. Brown's (2004, 2006) research included two dimensions that reflected conceptions of assessment as serving the extreme purpose of accountability: assessments make students accountable, and assessments make schools accountable. Brown (2004) described the conception of assessment as holding students accountable as including assigning students to groups, assigning grades, or determining entrance to higher educational opportunities. The latter of these purposes reflect assessment as being more on the accounting end of our continuum, but depending

on the nature of the assessment, the end of the continuum. In this conception of assessment, teachers in Brown and Harris's (2009) research and teachers in Davis and Neitzel's (2011) research used assessment in their schools to evaluate learning and to hold students accountable. These functions suggest a level of assessment that, depending on its interpretation and application, could be used for pedagogical and/or accounting purposes.

In the accounting end of the continuum, assessment is used to evaluate learning and to hold students accountable. This is the level of assessment that is most closely aligned with the accounting end of the continuum. In this level, assessment is used to evaluate learning and to hold students accountable. This is the level of assessment that is most closely aligned with the accounting end of the continuum. In this level, assessment is used to evaluate learning and to hold students accountable. This is the level of assessment that is most closely aligned with the accounting end of the continuum.

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on the nature and context of the assessment in question (e.g., classroom grouping, end of semester grade, high-stakes test for graduation or university admission), this conception could fall closer to or further from the extreme accountability end. Teachers in Remesal's (2007) research reported a similar purpose of assessment. These teachers reported that assessment was used to evaluate student performance and teacher effectiveness.

Additionally, Brown (2004) described the conception that assessment makes schools accountable and can be used to evaluate the extent to which a school uses resources efficiently. This finding was echoed in Harris and Brown (2009) in that teachers conceived of assessment for external reporting purposes; specifically, the use of standardized assessments to provide evidence of school-level success. For instance, one teacher described external reporting as needed for determining how to allocate resources and for evaluating if schools are performing adequately. In contrast, another teacher interpreted the looming accountability of schools leading to school-level manipulation of testing situations and data. We aligned this conception with the extreme accounting end of our continuum as the authors described these responses as focusing solely on school-level resources and potential negative consequences with little indication that assessment used for this purpose could also be pedagogical. However, as with the student accountability conception of assessment, the degree to which responses to these items indicate an extreme perspective may be bound to the context in which teachers work and live.

Lastly, teachers in Davis and Neitzel's (2011) research reported that assessment was used to provide evidence of teacher accountability to the "higher-ups" and to prepare students for high-stakes tests. We aligned both of these with the accountability end of our continuum as teachers reported an understanding that assessments were ultimately used to hold teachers accountable.

Beliefs and Conceptions That Assessment Is Irrelevant

In Brown (2004), teachers identified a conception that assessment is irrelevant to their everyday work. Items associated with this conception reflected a negative perspective of assessment as something that either interferes with teaching and learning (assessment is bad), is conducted but not used (ignored), or provides little useful information because of measurement error, inaccuracy, or lack of precision. Similarly, teachers in Harris and Brown's (2009) research identified a conception of assessment as compliance or conformity to state-mandated legislation, which the authors associated with the COA-III irrelevance factor. Teacher responses focused on the purpose of standardized assessments and then provided reasons as to why these measures should not be used. Thus, as in the irrelevance factor in Brown (2004), the compliance purpose included conceptions of assessment as being inaccurate. Thus, we placed both conceptions of assessment outside of our continuum because if teachers believe that assessment is irrelevant then it cannot (should not) be used for any of the purposes along the continuum. This reflects a qualitatively different perspective on the nature of assessment by providing an explanation for why not to use assessment, whereas the other three dimensions are focused on how assessment is (or should be) used.

BELIEFS ABOUT DIFFERENT FORMS OF ASSESSMENT

Most of the research on teachers' beliefs about the use of various assessment methods suggests alignment with the pedagogical end of our continuum where assessment advances teaching and guides learning. While there are distinctions between preservice and practicing teachers' conceptions of the effectiveness of different forms or methods of assessment, it is clear these tend to be clearly linked to these teachers' varying experience levels. Common across investigations was teachers' beliefs that utilizing formative assessment processes effectively is desirable, but require a level of sophistication found most often in more experienced teachers. More research is necessary to better connect teachers' conceptions about different forms of assessment and teachers' assessment practices.

Beliefs About Assessment Methods

Preservice and practicing teachers hold beliefs about the effectiveness of different forms of assessments (Tittle, 1994). Adams and Hsu (1998) surveyed 269 U.S. elementary math teachers about their conceptions of assessment and found that teachers relied on classroom observations as their preferred assessment method. Very rarely did these elementary school teachers believe that essays were a useful assessment method, which may be reflective of a content area focus. There was some variation in ratings between 1st/2nd grade teachers as opposed to 3rd/4th grade teachers with the latter relying more heavily on homework assignments to assess student understanding. Preservice teachers' conceptions of different assessment types, on the other hand, revealed that they are more likely to rely on traditional, paper-and-pencil assessments because these are the types of assessments they experienced in school (Graham, 2005). Furthermore, their assessments tend to measure low-level knowledge and skills (Wang, Kao, & Lin, 2010).

Wang et al. (2010) used a combination of open-ended questionnaires and pre-post individual interviews to determine 215 Taiwanese preservice teachers' beliefs about assessment during the third year of their teacher education program. Results indicated that participants' conceptions of assessing content knowledge were limited to low-level, regurgitation of information covered in the textbook or during lecture. Few preservice teachers believed it was important to assess application of knowledge, and for those who did, their conceptions remained limited to application of knowledge to solve well-structured as opposed to more authentic, ill-structured problems. Similar findings were noted for participants' beliefs about assessing processes of inquiry with 94% of preservice teachers, indicating that scientific inquiry is best measured by testing students' understanding of the procedures used to complete a laboratory assignment instead of assessing inquiry processes using the highest cognitive levels of analysis, synthesis, and evaluation (e.g., Anderson et al., 2001).

With regard to standardized tests, a survey of 272 Canadian secondary school teachers by Leighton, Gokiart, Cor, and Heffernan (2010) found that teachers believed that their own classroom tests were the most informative assessment

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technique they used to measure student learning. Teachers may conceive students' performance on their own teacher-made assessments as more meaningful than standardized tests results because such tests reinforce test-taking strategies (Leighton et al., 2010) instead of furthering learning or instruction (McMillan, 2003; Plake, Impara, & Fager, 1993). Similar results were noted by Stiggins and Bridgeford (1985) who surveyed 228 elementary and secondary school teachers from eight districts in the United States. Teachers reported that they believed standardized tests were time-consuming, not aligned with their curricular goals, and a poor reflection of students' knowledge and skills.

Beliefs About Formative Assessment

Preservice and practicing teachers also hold beliefs about formative (i.e., assessment for learning) practices. In a qualitative study of 13 Canadian elementary school teachers, Thomas, Deaudelin, Desjardins, and Dezutter (2011) found that teachers' conceptions of formative assessment could be classified by time, form, and the role of the actors. With regard to time, teachers conceptualized formative assessment as an integral part of the teaching-learning process, refuting the position that assessment is separate and distinct from teaching. Next, formative assessment should be continuously enacted during the lesson to provide the teacher with real-time information about students' understanding utilizing a variety of informal and formal assessment tools (also cited in Black & Wiliam, 1998; Brown, 2003). Finally, teachers differed in how they conceptualized responsibility for formative assessment. Some viewed this as a shared responsibility with students; however, the majority held more traditional notions equivalent to providing feedback. Of the 13 teachers observed by Thomas et al. (2011), the researchers noted few opportunities for students to engage in self- or peer-evaluation and that formative assessment was primarily teacher-directed. Similar results were noted by Davis and Neitzel (2011), who found teachers to be primarily responsible for formative assessment processes. In general, most teachers believed that the primary purpose of formative assessment was to assist teachers in identifying and diagnosing students' competencies and motivations. Although this illustrated relatively advanced conceptions of formative assessment, many reportedly struggled with implementing formative assessment practices in their classroom routines.

CROSS-CULTURAL DIFFERENCES IN TEACHERS' CONCEPTIONS OF ASSESSMENT

Cross-cultural research suggests that teachers' conceptions of assessment differ across contexts and these differences reflect teachers' internalization of their society's cultural priorities and practices (Brown & Harris, 2009; Brown, Lake, & Matters, 2009, 2011). A systematic line of research on these cross-cultural conceptions was implemented in New Zealand, Australia, Spain, Iran, China, and the Netherlands using Brown's (2008) COA-III (full and abridged versions). When this instrument was translated and administered in various countries, results indicated differing factor structures as well as variation in the pattern and strength of agreement

for each factor. It appears that understanding the assessment context may help to explain cross-cultural differences in teachers' conceptions of assessment noted in the research.

Low-Stakes Accountability Contexts

New Zealand, Australia, Spain, and the Netherlands are considered low-stakes accountability contexts because they require few, if any, compulsory national assessments, and decisions regarding assessment are made primarily at the local jurisdiction or school level (Brown, 2008; Brown, Lake, & Matters, 2011; Brown & Remesal, 2012; Harris & Brown, 2009; Segers & Tillema, 2011). Further, in each of these countries teachers are engaged in classroom assessment using formative and summative practices, and these data are used to make decisions (e.g., placement into secondary school) about students' knowledge and skills. Therefore, it is reasonable to expect that teachers' beliefs about assessment in these countries might reflect the "assessment for improvement" conception to a greater extent than they reflect "assessment for accountability" purposes.

In 2004, Brown examined New Zealand elementary school teachers' beliefs about assessment using the 50-item version of the Teachers' Conceptions of Assessment questionnaire. His findings confirmed that teachers believed assessment is used to improve teaching and learning. Furthermore, these teachers agreed that assessment can be an external measure to hold schools accountable; however, they rejected the notion that assessment is for student accountability purposes and that assessment is irrelevant. These findings are not surprising. In New Zealand, schools determine which assessments will be administered, and teachers use results to assess students' progress on the knowledge and skills put forth in the national curriculum. There are public expectations that schools disseminate evidence of student performance, although these are not state-mandated, and schools have autonomy to determine the manner in which they report this data. Thus, the finding that teachers believe assessments are used to hold schools accountable appears to reflect teachers' understanding of these larger, public pressures.

The assessment context in Australia is arguably similar to that in New Zealand, and therefore it is reasonable to expect teachers would hold similar conceptions of assessment across both contexts. Brown et al. (2011) investigated Australian teachers' conceptions of assessment in Queensland using the COA-III (abridged version) and found that 1,398 primary and secondary teachers agreed that assessment is used for improvement purposes; however, primary school teachers were more likely to cite this as their primary purpose for engaging in assessment compared to secondary teachers. Furthermore, teachers who conceived of assessment as being used to improve teaching and learning were more likely to believe that assessment makes schools accountable. Given these results, Brown and his colleagues concluded that Queensland and New Zealand teachers hold similar conceptions of assessment and that this was a reflection of their similar assessment contexts.

Spain also has a low-stakes accountability system in that no external standardized testing is required at the national level (Brown & Remesal, 2012). To determine whether Spanish preservice teachers hold similar assessment beliefs to New Zealand preservice teachers, Brown and Remesal (2012) surveyed 996 freshman

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and sophomore students in their respective teacher preparation program. Using a combination of exploratory and confirmatory factor analysis, results indicated that Brown's (2004) four factor model did not accurately represent preservice teachers' beliefs structure. In particular, it was determined that the irrelevance factor was in fact two separate factors named "Bad" and "Ignore" and that several of the items that assigned to the improvement factor were now assigned to school accountability (Brown & Remesal, 2012). Furthermore, New Zealand preservice teachers were more likely to endorse conceptions of assessment that conceive of assessment for improvement, school accountability, and student accountability purposes, whereas Spanish preservice teachers primarily conceived of assessment as bad. It is important to note that the Spanish sample in this study came from the Catalonia community which was at the time piloting a regional standardized test at the primary school level. Perhaps students' high endorsement of the "assessment is bad" purpose was in response to this recent change in their local context.

Segers and Tillema (2011) investigated teachers' conceptions of assessment and found similarities and differences between Dutch and New Zealand teachers' beliefs. The sample consisted of 351 Dutch secondary school teachers. Results indicated a four factor beliefs model indicating that teachers believe assessment (1) measures student performance and learning; (2) holds schools accountable; (3) is inaccurate, unreliable, and contains measurement errors (i.e., bad quality); and (4) is used to make instructional decisions and measure higher order thinking skills (i.e., good quality). Two of the factors (#2, #3) were conceptually similar to New Zealand teachers' beliefs (i.e., school accountability and irrelevance) and two were not. Factor one combined Brown's student accountability and improvement factors. In Dutch secondary schools, teachers relied on both formative and summative assessment data in their practices, and thus differentiated formative/summative assessment from assessments used for school accountability purposes but did not consider formative and summative assessment as serving distinctly different purposes. This differed from results noted in the New Zealand sample (Brown, 2004). The Dutch sample noted anew factor reflecting teachers' conception that assessment provided evidence for instructional decision-making and measures higher-order thinking skills. Segers and Tillema (2011) attributed this to the recent national debate emphasizing that assessments should measure higher-order thinking processes such as application, analysis, and evaluation rather than rote memorization of knowledge.

High-Stakes Accountability Contexts

Teachers' conceptions of assessment were also examined in high-stakes assessment contexts such as China and Iran (Brown, Kennedy, Fok, Chan, & Yu, 2009; Pishghadam & Shayesteh, 2012). Both countries use public examinations that carry high-stakes for teachers and students. Examination results determine placement into different levels of education and acceptance into high-quality institutions. Additionally, teachers use frequent summative assessments to motivate students and to inform instruction in the classroom. Therefore, teachers' beliefs in high-stakes accountability contexts are hypothesized to reflect endorsement of assessment for student and school accountability purposes.

In a study of Hong Kong teachers' beliefs about assessment, Brown et al. (2009) found that teachers who conceived that assessment makes students accountable were also likely to conceive that assessment can be used to improve teaching and learning. This differed from data collected in the New Zealand sample that indicated a negative correlation between improvement and student accountability purposes. To investigate this further, Brown, Hui, Yu, and Kennedy (2011) examined the beliefs of 1,464 primary and secondary teachers from Hong Kong and Guangzhou, China. Using exploratory and confirmatory factor analysis, teachers' beliefs were conceptualized as a three factor model: assessment for improvement, assessment for accountability, and assessment is irrelevant. Results indicated that teachers from Hong Kong and Guangzhou responded similarly to the survey, and thus hold analogous beliefs. An examination of the inter-correlations among factors indicated that the improvement purpose had a strong, positive correlation with the accountability purpose. This is consistent with Brown et al.'s (2009) finding. Additionally, the irrelevance purpose was weakly and negatively correlated with the improvement purpose, and weakly and positively correlated with the accountability purpose. These findings are not surprising given Chinese policies and practices reinforce examinations as a tool to improve student learning.

Iran, similar to China, is considered a high-stakes assessment system (Pishghadam & Shayesteh, 2012). In an examination of 103 English language teachers employed at private language institutions, the researchers found evidence for Brown's (2004) four factor model of teachers' conceptions about assessment, although the extent to which they endorsed these assessment beliefs differed from the New Zealand sample (i.e., assessment is used for student accountability, assessment for improvement, assessment is irrelevant, and assessment makes schools accountable). Similar to the Hong Kong sample, Iranian teachers' data showed a strong, positive correlation between assessment for improvement and assessment for school accountability purposes. Since both countries have very similar assessment systems, it is not surprising that Chinese and Iranian teachers' beliefs would be similar.

ALIGNMENT BETWEEN BELIEFS AND PRACTICES

Most of the research on teachers' assessment beliefs or conceptions is driven by the view that beliefs influence practices and outcomes (Brown, 2008). Therefore, to alter teachers' assessment practices it is necessary to change teachers' assessment beliefs or conceptions. Few studies identified for this chapter indicated a relation between teachers' assessment beliefs/conceptions and practice; however, some evidence does suggest that a relationship may exist.

Karp and Woods (2008), for example, investigated preservice teachers taking a physical education teaching methods course that included explicit instruction in alternative assessment. In addition to the findings described previously, these researchers also examined the alignment of preservice teachers' assessment beliefs and practices during the planning and implementation of a unit of instruction in a field placement. These preservice teachers indicated a willingness to try more alternative and performance-based assessments than they had experienced as K-12 students; however, when they attempted to implement their envisioned lesson

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and assessment plans, a discrepancy between their beliefs and their actions became apparent. Karp and Woods (2008) attributed this to preservice teachers' lack of experience specifically with alternative types of assessment. They also acknowledged that preservice teachers struggle with the complexity of the teaching process in the early stages, which can also contribute to the discrepancy between planning and implementation.

Moreover, Davis and Neitzel (2011) used self-regulated learning as a lens to examine how 15 middle school teachers' conceptualized the purposes and approaches of their daily assessment practices over three years. Utilizing a structured observational protocol to quantify frequency counts of the instructional information, practice, and feedback patterns teachers used, these researchers found that despite teachers' articulated wealth of assessment knowledge and expertise, they rarely prompted students to ask their own questions about their performance or to engage in self-assessment. Teachers indicated that their assessment practices were constrained by external demands for particular kinds of assessment information. These demands pulled them away from more learning focused assessment practices that they reported believing in because their context demanded different practices.

James and Pedder (2006) developed a questionnaire to measure both how often teachers engaged in particular assessment and learning practices (practice measure) and how important each assessment practice was for teachers in their efforts to create learning opportunities (beliefs measure). Analysis of responses from a sample of 558 teachers in England identified three dimensions of assessment and learning practices intended to: (1) make learning explicit, (2) promote learning autonomy, and (3) enact performance orientation across multiple content areas. Examination of the gap between reported practices and beliefs revealed that although these teachers valued the practices involved in making learning explicit and promoting a learning autonomy, they reported engaging in practices that would support a performance orientation in students far more than the other two factors. James and Pedder (2006) attributed these results to the testing context in England at the time of this study that required teachers to push students to perform on tests and consequently required teachers to engage in performance-oriented practices despite their evaluation of these practices as less important.

Similarly, Winterbottom et al. (2008) used James and Pedder's (2006) measure with teacher trainees in the UK engaged in a post graduate certification course. Descriptive analysis suggested that these participants were "doing less than they thought important for enhancing students' learning" (p. 198). Comparison of value and practice across the identified factors revealed similar patterns to James and Pedder's (2006) results for performance orientation (practiced more than valued) and promoting learning autonomy (valued more than practiced). A difference emerged with the making learning explicit factor, in that teacher trainees reported slightly greater levels of practice than value, the opposite of James and Pedder's finding. These differences in value and practices between preservice teachers and more experienced teachers may be reflective of the developing nature of both values and practices in teacher trainees who are still constructing their beliefs and skill base for teaching.

FINDINGS AND IMPLICATIONS

In this section, we look across the major themes of our review and identify key findings that have implications for practice, research, and theory.

First, teachers' assessment beliefs and the structure of those beliefs are shaped by the policies/practices as well as social and cultural priorities in a society (Brown & Harris, 2009). Two sets of research from our review provide initial support for this finding. First, cross-cultural research using the COA-III suggests that understanding the larger, national assessment context can help to explain cross-cultural differences in teachers' conceptions of assessment. Second, Remesal (2007) found that even teachers from similar school contexts and exposed to the same socio-political influences and expectations reflected varied and mixed beliefs about the purpose of assessment. Taken together, these studies suggest the need for further research to examine the structure and nature of beliefs *within* and *across* cultures.

For teacher educators interested in altering teachers' assessment practices, these cross-cultural findings suggest a need to understand the larger social and political assessment context, and how these contexts shape assessment-related beliefs. Moreover, it may be necessary for teacher educators to expose, unpack, and scaffold analyses of these contextual systems and help preservice and practicing teachers understand their assessment beliefs in relation to these current and reform practices before belief change can occur.

Second, the primary construct used to examine teachers' cognitions about assessment is a "conception." Introduced by Thompson (1992), a conception includes teachers' knowledge of, beliefs about, and affect for assessment. However, others have made a theoretical distinction between knowledge and beliefs (Nespor, 1987; Pajares, 1992) suggesting that knowledge claims require a consensus component (i.e., agreement about the truth or falsity of a knowledge claim; Nespor, 1987). When teachers are asked about the purpose of assessment as a conception, the responses garnered may be a reflection of their knowledge perspective (what assessment is in their context) rather than a belief (what assessment should be). The knowledge-belief distinction may indicate different explanations of practice and point towards alternative intervention or educational experiences.

Third, we opened this chapter with a reminder that assessment practices hold power that can enhance learning and democratic practice or can be used to punish and control learners, teachers, and schools. We see these issues as central to understanding teachers' assessment beliefs and practice but investigations into these issues were conspicuously absent from the research we found in this area. Instead the focus has been on the conceptual understanding of the nature of assessment rather than beliefs about power in using assessment for these different purposes. The ethics of assessment practices and teachers' beliefs about those practices is an area ripe for investigation.

NOTES

- 1 Researchers of teachers' assessment beliefs use varied subsuming terminology such as "conceptions" (as described by Thompson, 1992) and "values" to describe variables of interest. Thus, for the purposes of this chapter we use the terms conceptions and values (as used by the original authors) to capture teachers' assessment beliefs.
- 2 We use the same acronym to refer to all versions of Brown's instrument (full and abridged).

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