International Journal of Research & Method in Education

ISSN: 1743-727X (Print) 1743-7288 (Online) Journal homepage: http://www.tandfonline.com/loi/cwse20

Validity in mixed methods research in education: the application of Habermas' critical theory

Haiying Long

To cite this article: Haiying Long (2015): Validity in mixed methods research in education: the application of Habermas' critical theory, International Journal of Research & Method in Education, DOI: 10.1080/1743727X.2015.1088518

To link to this article: http://dx.doi.org/10.1080/1743727X.2015.1088518

INTERNATIONAL JOURNAL OF RESEARCH & METHOD IN EDUCATION, 2015
http://dx.doi.org/10.1080/1743727X.2015.1088518

Routledge
Taylor & Francis Group

Validity in mixed methods research in education: the application of Habermas' critical theory

Haiying Long

Department of Leadership and Professional Studies, College of Education, Florida International University, 11200 SW 8th Street, Miami, FL 33199, USA

ABSTRACT

Mixed methods approach has developed into the third methodological movement in educational research. Validity in mixed methods research as an important issue, however, has not been examined as extensively as that of quantitative and qualitative research. Additionally, the previous discussions of validity in mixed methods research focus on research design and procedure, rather than validity per se. This paper presents another perspective by using philosophical and methodological insights generated from Habermas' critical theory, especially his Theory of Communicative Action and validity claims. Theoretical assumptions and how they are consistent with principles of mixed methods research are introduced. Three types of validity claims are explained with an example and how they are applied to understanding validity in mixed methods research is further discussed. This paper concludes with implications for educational research and future directions.

ARTICLE HISTORY
Received 23 February 2015
Accepted 21 May 2015

KEYWORDS
Mixed methods research; education; validity; Habermas; critical theory

Traditionally, most research questions in educational fields as well as other fields of social sciences are answered by using quantitative and qualitative approaches. However, in the past two decades, mixed methods approach, which is generally defined as an approach that uses both quantitative and qualitative methodologies or methods to collect data, analyse data, report findings, and draw inferences in a single study (Tashakkori and Creswell 2007), has evolved into the 'third methodological movement' (Tashakkori and Teddlie 2003, 5) and the 'third research paradigm' (Johnson and Onwuegbuzie 2004, 15). This approach has also been embraced by educational researchers and the number of empirical studies in education that have employed mixed methods accounts for about a quarter of all mixed methods publications between 2000 and 2008 (Teddlie and Tashakkori 2010). An examination of research methodologies in 710 published articles in six prominent mathematics education journals between 1995 and 2005 revealed that about a third of the articles utilized mixed methods approach (Hart et al. 2009).

In the process of the emergence of mixed methods research and a community of mixed methods researchers, many important issues have been addressed and hotly debated, for example, the issue of paradigm (Biesta 2010; Creswell 2009; Feilzer 2010; Morgan 2007; Greene 2007; Johnson 2012; Johnson and Onwuegbuzie 2004), methodology (Creswell and Plano Clark 2007; Lee and Greene 2007; McConney, Rudd, and Ayres 2002; Teddlie and Tashakkori 2006), and research design (Creswell 2013; Creswell et al. 2003). However, the discussion of the validity issue in mixed methods research is still in its infancy (Creswell and Plano Clark 2007; Onwuegbuzie and Johnson 2006). On the other

CONTACT Haiying Long haiying.long@fiu.edu

hand, as an important yet contentious issue in educational research, validity has been examined extensively in quantitative (e.g. Borsboom, Mellenbergh, and van Heerden 2004; Embretson 2007; Kane 2006; Messick 1989, 1995, 1998) and qualitative approaches (e.g. Cho and Trent 2006; Creswell and Miller 2000; Denzin and Giardina 2008; Lather 1993; Onwuegbuzie and Leech 2007). Yet the number of articles that are focused on validity issue in mixed methods research is still very few (Greene 2008; Tashakkori and Teddlie 2008).

This study presents a perspective of discussing the validity issue in mixed methods research by using Jurgen Habermas' critical theory, more specifically, his Theory of Communicative Actions (TCA) and validity claims. The perspective is only one among many perspectives and the purpose is not to replace previous ideas, but to encourage further conversations on the topic among mixed methods scholars. Before the present perspective is introduced, previous investigations on validity issue in mixed methods research are reviewed.

Validity in mixed methods research: a literature review

During the past two decades, a few mixed methods research scholars have discussed the validity issue. One of the early works is Tashakkori and Teddlie's article in the first edition of *SAGE Handbook of Mixed Methods in Social and Behavioral Research* (2003). The authors examine validity in mixed methods research from the research phase of drawing inference and focus on the quality of the inference. On the basis of cognitive psychology, psychology, and research methodology, they define inference as 'a researcher's construction of the relationships among people, events, and variables as well as his or her construction of respondents' perceptions, behaviours, and feelings and how these relate to each other in a coherent and systematic manner' (Tashakkori and Teddlie 2003, 692). Because the term inference implies a process and an outcome, they then contend that quality of inference is assessed from two aspects of the research: design quality and interpretive rigor. The former is about the adequacy of the use and implementation of the process that conclusions are reached, whereas the latter is about the consistency of the conclusions with other aspects of the research, such as, research questions and the state of knowledge. Later, Tashakkoori and Teddlie (2008) strengthen the idea of inference quality by developing an integrative framework in which criteria of assessing quality in quantitative, qualitative, and mixed methods research are included. They state that the information mixed methods research provides is meta-inference, which is 'an overall conclusion, explanation, or understanding developed through an integration of the inferences obtained from the qualitative and quantitative strands of a mixed methods study' (101). Under this framework, nine specific criteria are established for assessing design quality and interpretative rigour: design quality is evaluated by design suitability, design adequacy, within-design consistency, and analytic adequacy, and interpretative rigour is assessed by theoretical consistency, interpretive consistency, interpretive agreement, interpretive distinctiveness, and integrative efficacy (113–115).

Likewise, in their discussion of validity in mixed methods research, Onwuegbuzie and Johnson (2006) also stress the importance of the quality of inferences or meta-inferences that are made from different parts of a study, including the conclusions and applications. However, they propose another term—legitimation—to describe validity in mixed methods research because they believe that this term is acceptable to both quantitative and qualitative researchers. More specifically, legitimation refers to the threats to internal and external validity or credibility in quantitative and qualitative research. In addition, different from Tashakkori and Teddlie, Onwuegbuzie and Johnson view legitimation as a continuous process and contend that it should happen at each stage, rather than only at the outcome, of the research process. The authors further categorize nine types of legitimation in mixed methods research, including sample integration, inside-outside, weakness minimization, sequential, conversion, paradigmatic mixing, commensurability, multiple validities, and political legitimation. Each type corresponds to a specific issue in quantitative and/or qualitative components of mixed methods research. For instance, sample integration legitimation is related to statistical generalizability and refers to 'the extent to which the relationship between the quantitative

and qualitative sampling designs yields quality meta-inferences' (57). Conversion legitimation is associated with qualitizing and/or quantitizing the data and is conceptualized as the extent to which this process leads to good meta-inferences.

These two scholars continue to expand the legitimation criteria in their later works (Collins, Onwuegbuzie, and Johnson 2012; Onwuegbuzie, Johnson, and Collins 2011). In Collins, Onwuegbuzie, and Johnson's (2012) study, the authors add two more levels of legitimation in order to reflect 'the *Holistic and Synergistic Legitimation Research Process*' (855, emphasis in original), which is a more inclusive framework to discuss legitimation. The authors state, 'By *holistic*, we mean that legitimation criteria should incorporate the major works in the area of legitimation /quality', and,

> by *synergistic*, we mean that our legitimation framework follows Hall and Howard's (2008) four core principles for synergistic approaches: (a) mixing legitimation/quality criteria culminates in a mixed research study wherein both the legitimation process and outcome are superior than would have been obtained if an individual components approach had been undertaken; (b) using a dialectic approach to legitimation, wherein multiple philosophical assumptions and stances are intertwined, when applicable; (c) considering of equal importance quantitative and qualitative legitimation approaches; and (d) balancing opposing quantitative-qualitative perspectives. (855–856, emphasis in original)

The two criteria added to the framework are: (a) philosophical clarity that emphasizes the importance of researchers' philosophical assumptions in the process of formulating research questions and selecting methods to answer these questions; (b) the connections between quality criteria agreed upon in mixed methods community and those in other communities regarding the use of mixed methods research.

In another attempt to address validity in mixed methods research, Dellinger and Leech (2007) employ Messick's concept of construct validity that has been widely accepted in quantitative research. They contend that there is an inherent tension in the research process of conducting mixed methods research because quantitative and qualitative approaches are different in several aspects. However, these two research approaches are the same in the understanding and negotiation of the meanings of the constructs. For this reason, the validity of mixed methods research centers on meaning making. Labelled the new framework as validation framework (VF), the authors emphasize that construct validation process under this framework is not a closed or static process, but an open and dynamic process that aims to obtain meaning of the construct through all kinds of evidence. Dellinger and Leech later identify four elements of construct validation in the framework, including foundational element, inferential consistency, utilization element, and consequential element. The foundational element of the framework refers to researchers' previous knowledge of the phenomenon of interest and it addresses questions related to the literature review. Inferential consistency is about the consistency of the inferences made in a study and the appropriateness of research design and analysis. Utilization/historical element is the evidence of the use of construct measurement, whereas consequential element refers to whether the society accepts the consequences, findings, or inferences of a study.

Recently, O'Cathain (2010) proposes a comprehensive framework to assess the quality of mixed methods research based on a literature review of published quality criteria in a variety of disciplines. The author notes that one weakness of Tashakkori and Teddlie's conceptual framework is its failure to include philosophical stances. She then identifies eight domains of quality—planning quality, design quality, data quality, interpretive rigour, inference transferability, reporting quality, synthesizability, and utility—that correspond to five stages of study: planning, undertaking, interpreting, disseminating, and application in the real world. In addition, each domain of quality includes several items. For instance, there are 15 quality criteria in synthesizability domain of quality, in which six are for qualitative research, three for quantitative experimental research, three for quantitative observational research, and three for mixed methods research.

A critique of previous discussions on validity in mixed methods research

These discussions on validity provide profound insights for the understanding of the issue. However, it seems that all the discussions are built on Tashakkori and Teddlie's conception of inference quality

and equate validity with the quality of research. Although philosophical assumptions are highlighted in the works of Collins, Onwuegbuzie, and Johnson (2012), Onwuegbuzie, Johnson, and Collins (2011) and O'Cathain (2010), these assumptions are still treated as one aspect of research and based on its inference quality. Under Dellinger and Leech's (2007) VF, the purpose or consequence of conducting research is emphasized and the construction of meaning is put at the core. However, the four elements still address how to evaluate the quality of different aspects of a study.

Furthermore, these efforts of discussing validity focus only on research design, specific threats, research procedure, and inference quality through which validity is evaluated, but do not focus on validity per se, thus validity seems to be treated as a 'byproduct' (Dennis 2013, 7) of these aspects of the research. In other words, research design and procedures are just the techniques in conducting research, which can reflect the 'logic of justification' (Smith and Heshusius 1986, 4) of research, but are not the core of the logic. In this context, therefore, the concept of validity is oversimplified and forced into the background, or even masked (Dennis 2013). Greene also expresses the same concern about too much emphasis on methods and techniques in mixed methods research (Leech 2010). In an interview with Leech, she points out that the field is moving towards convergence where a focus is more placed on technical level, or steps of how to conduct research. By doing this, 'the wonder that is possible in mixed methods will be reduced to procedures and techniques' (261). Taken together, a conception of validity that heavily relies on inference quality seems to undercut any effort to develop general criteria for design validity.

To some degree, these discussions resemble the discussions of validity issue in quantitative research, that is, more emphasis is placed on research design and practice, rather than validity per se. More specifically, quantitative researchers have not questioned 'the very nature' (Dennis 2013, 4) of conducting educational research, nor have they addressed epistemological and ontological questions that are fundamental to validity. Despite the emphasis of meaning interpretation and argument in the consensual conception of validity in quantitative research (AERA, APA, & NCME 2014), these aspects are rooted in measurement and testing, or 'lurk behind the definitional reification that has been achieved' (Dennis 2013, 4). In addition, the validity conceptual frameworks in quantitative research have seldom been brought into fruition in research practice, which is supported by the fact that quantitative researchers still wrote about different aspects of validity and the idea of validity is still contingent on a validated test or measurement.

Recently, in a review of the development of mixed methods research in the past five decades, Denzin (2010) clearly notes that mixed methods research community employs a postpositivist language to discuss research design, data collection, analysis, interpretation, and reporting, although he commends that mixed methods research is 'bold, innovative, energizing, and disruptive' and better than the 'simplistic, evidence-based movement' (420). This language entails that researchers can use any research method because the methods are just tools, not the practice of interpreting meaning. He continues to point out the danger of using this set of language and writes,

> Guiding the methodological conversation along postpositivist lines leaves little space for issues connected to empowerment, social justices, and a politics of hope (but see Mertens 2003). In turning inquiry into a set of procedures, this discourse marginalizes the open-ended, free-flowing, emergent nature of critique inquiry (but see Hesse-Biber and Leavy 2008). It has the danger of marginalizing those forms of critical inquiry embedded in the critical pedagogy traditions. (420)

The current study

With an increasing popularity of mixed methods research in education, an ongoing discussion of the validity issue will benefit the future development of the field. Further, based on the previous criticism, a perspective that focuses on validity itself is greatly needed. This study aims to examine validity in mixed methods research based on Habermas' critical theory, especially TCA and validity claims. It mainly uses Habermas' two volumes of *The Theory of Communication Action* (1984, 1987), and Carspecken's (1996) and Dennis' (2013) works that extend Habermas theory to discuss methodological

issues in educational research. In the following sections, the assumptions that are closely related to Habermas' theory are introduced and how each assumption is consistent with the principles that are accepted among mixed methods researchers is discussed. The concept of validity claim and three types of claims are then elaborated with examples. How validity claims are applied to mixed methods research is also discussed. The research practice and examples of how to use validity claims to analyse data is beyond the scope of this article and can be found in Carspecken's (1996) *Critical Ethnography in Educational Research: A Theoretical and Practical Guide*.

Habermas' critical theory

Jurgen Habermas has been widely recognized as one of the great philosophers in critical theory and he made his contributions to the development of critical theory through TCA. An understanding of Habermas' theory of validity is impossible without the knowledge of the major assumptions of his critical theory and TCA. These assumptions of Habermas' theory are also the characteristics of three validity claims that are introduced in the next section. Readers who are interested in the detailed description of Habermas' critical theory and TCA can refer to other works (e.g. Habermas 1984, 1988; Carspecken 1996, 2003; Dennis 2013; McCarthy 1981; Steinhoff 2009).

Assumptions of Habermas' critical theory

First, Habermas' theory puts epistemology at its core. Broader than the traditional sense of epistemology examining the nature, source, scope, and reliability of knowledge, critical epistemology (Carspecken 1996, 2003) also addresses the questions of meaning, understanding, truth, and power. Ontology and validity in critical theory are contingent on critical epistemology that draws heavily from the works of American pragmatists, such as John Dewey, William James, Charles Sanders Piece, and George Herbert Mead.[1] In addition, the relationship between critical epistemology and ontology is pragmatic in the sense that 'doing/claiming implies being' (Dennis 2013, 30). In mixed methods research in education, pragmatism is the most popular paradigm and has been espoused by many mixed methods scholars (Biesta 2010; Johnson and Onwuegbuzi 2004; Johnson, Onwuegbuzi, and Turner 2007; Morgan 2007). Johnson, Onwuegbuzie, and Turner (2007, 125) state, 'We generally argue for what we call *pragmatism of the middle* as an especially useful philosophy for mixed methods. We have constructed a version of this kind of pragmatism around the ideas of Charles Sanders Peirce, William James, and John Dewey' (emphasis in original).

Second, understanding and truth are not generated from visual perception or speech, but from communicative actions, which are processes of 'reaching understanding among members of a lifeworld' (Habermas 1984, 286). These communicative actions are not different from human interactions in our daily life (Carspecken 1996). Habermas (1984, 286) explains the situation of reaching understanding is when speakers involved 'are coming to an understanding *with* them, and who know when their attempts have failed' (emphasis in original). He further argues,

> Reaching understanding [Verstandigung] is considered to be a process of reaching agreement [Einigung] among speaking and acting subjects … A communicatively achieved agreement, or one that is mutually presupposed in communicative action … cannot be merely induced through outside influence; it has to be accepted or presupposed as valid by the participants. (Habermas 1984, 286–287)

Here Habermas suggests that intersubjectivity is involved in the process of reaching understanding, or more specifically, the agreement is reached only when a shared knowledge of the situation is obtained among all the participants. He continues to describe an ideal speech situation, in which a communicatively achieved agreement 'cannot be imposed by either party, whether instrumentally through intervention in the situation directly or strategically through influencing the decisions of opponents'. The real agreement, according to Habermas, 'rests on common *convictions*. The speech act of one person succeeds only if the other accepts the offer contained in it by taking (however explicitly) a "yes" or "no" position on a validity claim that is in principle ciriticizable'

(Habermas 1984, 287, emphasis in original). Carspecken (2003) adeptly summarizes Habermas' ideas of reaching understanding and intersubjectivity as follows,

> Intersubjectivity can be found to have been always-already presupposed, but implicitly, each time we think or act meaningfully. It is not presupposed as some sort of simple "substance" or through some simple knowledge-imparting perception. It is rather a process that has always already occurred when we notice it .... The process of 'explicitation' (Brandom 1994, 114), moving implicit understandings toward explicit articulations, is the core process involved in theorizing about intersubjectivity. (1017)

One important ontological stance in conducting mixed methods research is the existence of many kinds of reality, including subjective, objective, and intersubjective (Johnson 2012; Onwuegbuzie and Johnson 2006). Onwuegbuzie and Johnson (2006, 48) mention, 'The arbiters of research quality will be the research stakeholders, which means that the quality or validity issue can have subjective, intersubjective, and objective components of influences'. Furthermore, Morgan (2007) criticizes the dichotomy of subjectivity and objectivity in social inquiry and argues that researchers 'need to achieve a sufficient degree of mutual understanding with not only the people who participate in our research but also the colleagues who read and review the products of our research' (73). Therefore, the process of conducting research emphasizes mutual communication and constructed meaning. Morgan further notes that understanding intersubjectivity helps resolve the issue of incommensurability in combining quantitative and qualitative research. This point has been concurred by Biesta (2010) who suggested intersubjectivity as an alternative to the dichotomous classification of subjectivism and objectivism. The notion has also been expressed in the discussion of the term paradigm, which was originally coined by Thomas Kuhn (1962) and was further developed by mixed methods scholars as research paradigm. According to Johnson and Onwuegbuzi (2004, 24), research paradigm is 'a set of beliefs, values, and assumptions that a community of researchers has in common regarding the nature and conduct of research', or simply put, 'a research paradigm refers to a research culture'. In other words, mixed methods research, similar to quantitative and qualitative research, is built on shared beliefs and knowledge.

Third, Habermas emphasizes that reaching understanding is not a monologue; it is rather a dialogue between speakers and hearers. He notes that 'in communicative action a speaker selects a comprehensible linguistic expression only in order to come to an understanding *with* a hearer *about* something and thereby to make *himself* understandable' (Habermas 1984, 307, emphasis in original). Greene (2008, 20) proposes a 'mixed methods way of thinking' based on dialectic stance, which refers to a way of thinking in social inquiry that 'actively invites us to participate in dialogue about multiple ways of seeing and hearing, multiple ways of making sense of the social world, and multiple standpoints on what is important and to be valued and cherished'. Recently, Johnson creates the terms of dialectical pragmatism (2009) and dialectical pluralism (2012) as a philosophy and a 'metapraradigm' (2012, 752) to understand mixed methods research. As with Greene (2007), Johnson's use of the word 'dialectical' highlights the importance of engaging people with different paradigms and perspectives into conversation and integrating different theories and values into workable solutions for research questions.

Fourth, based on the idea of intersubjectivity in communicative actions, the process of understanding and even the truth we claim, is uncertain. In other words, in our interpretation of this world, there are a range of possible meanings, rather than one single meaning. Therefore, validity and validity claims are also uncertain and can be 'challenged and queried' (Dennis 2013, 5). The process of reaching understanding is also negotiable and consensual because this is the essence of being critical. For this reason, 'validity can be conceptualized as the process through which people come to understand one another given the bounded range and flexible field of possible interpretation' (Dennis 2013, 20). Truth discussed by pragmatists is also fallible. More specifically, 'Instrumental truths are a matter of degree (i.e. some estimates are more true than others). Instrumental truth is not "stagnant", and therefore, James ([1907] 1995) states that we must "be ready tomorrow to call it falsehood"' (Johnson and Onwuegbuzie 2004, 18). Critical realism, which is another paradigm

proposed in the field of mixed methods research and combines realist ontology with constructivist epistemology, also assumes that it is impossible to find truth although levels of objective truths can be identified (Bhaskar 1989; Christ 2010, 2013; Greene and Hall 2010; Maxwell 2011; Maxwell and Mittapalli 2010).

Fifth, Habermas assumes that truth and power are interrelated. When power or force becomes a part of the truth, truth claims are distorted. Therefore, like other criticalists, advocates of Habermas' theory are also concerned with social injustice and inequality and aim for the challenge of status quo and positive social changes. Mertens (2007) suggests that transformative paradigm is used as an overarching framework for mixed methods research in order to discuss the role of the researchers and the reasons for conducting research. The issue of power is a central issue in transformative paradigm; therefore, researchers share social responsibilities and their major purpose of conducting research is to address social injustice. Mertens (2007, 214) further contends, 'By carefully devising mixed methods to obtain input into the conditions that warrant the conduct of research, opportunities are opened for those whose voices have been traditionally excluded'. Greene (2008, 20) also believes that mixed methods research is advantageous over other research approaches in that 'it unsettles the settled, challenges the taken-for-granted, offers a discordant voice in an otherwise harmonious choir'.

Habermas' validity claims

Based on the assumptions of Habermas' theories, truth claims are made through communicative actions and they are immediately translated into validity claims, which are 'equivalent to the assertion(s) that the conditions for the validity of an utterance are fulfilled' (Habermas 1984, 38). According to Habermas (1984, 307),

> In the context of communicative action, speech acts can always be rejected under each of the three aspects: the aspect of the rightness that the speaker claims for his action in relation to a normative context (or, indirectly, for these norms themselves); the truthfulness that the speaker claims for the expression of subjective experiences to which he has privileged access; finally, the truth that the speaker, with his utterance, claims for a statement (or for the existential presuppositions of a nominalized proposition).

Here Habermas suggests that there are three validity claims, namely, objective, subjective, and normative claims, which correspond to three realities. In order to illustrate these types of validity claims, an example in an ordinary life context is provided (i.e. while you are sitting in a Starbuck coffee shop, you see a friend pass by and you wave to him twice) because as mentioned earlier communicative actions that are the foundation of understanding validity claims resemble the actions in our everyday life.

An objective claim is the claim about the features of the physical world (Carspecken 1996). More specifically, it represents things that exist in the external world as well as the relationships. The claim indicates 'what is' and 'what works' (Dennis 2013). It is associated with the third-person perspective, or 'the world—a single world which is "the same" for all people' (Carspecken 1996, 65). Traditionally, observations and measurements are the two most frequently used modes for making a valid objective claim. The principle to validate an objective claim is multiple access, which means that people involved in the communication all have the access to an objective claim in the same way. Disagreements during the communication can be resolved through repeated observations and measurements, or through discussions of the procedures (Carspecken 1996). Some objective claims in the above example of waving to a friend include: there is a Starbuck coffee shop, you are sitting (in a chair), your friend is passing by, and you wave twice. These claims are based on the observations of you or your friend, or any other people that are involved in the scenario. If all the people in your group hope to validate a simple claim that you wave twice, for instance, they need to count the frequency of the wave based on the same counting system.

A subjective claim is the claim about an individual's subjective states and represents things that exist in an internal world, which mainly consists of how I feel, desire, and think. This type of claim

indicates what experiences that are internal to me and is associated with first person perspective, or 'my' world. It is validated by privileged access, which means that I am the only person who has the direct access to my own subjective states, and any other people could not have access to my feelings or emotions even though they could show their understanding. To question the validity of a subjective claim is the same as questioning a speaker's sincerity and authenticity (Carspecken 1996; Dennis 2013). In the example of waving to a friend, some possible subjective claims are: you are sitting at the shop just hoping to meet that friend, you wave to him twice because you like him very much, and you are happy to see him. Any person who hopes to validate these claims should ask you for confirmation. For instance, a girl who is sitting beside you says, 'You must be happy to see your friend because I saw you smile at that moment'. You could deny that claim by saying, 'No, I was not happy to see him. I was smiling because I thought of something funny about another friend at the moment'. The girl could choose to believe in you or not, but she cannot say that you are lying because she has no access to your emotions.

Normative/normative–evaluative claim is the third type of validity claim and refers to the claims about a social world with consensual norms and values, which are generally about what is right, wrong, and appropriate (Carspecken 1996; Dennis 2013). People use 'should' or 'ought to' to describe this kind of claim. Normative claim is associated with second-person perspective and 'concerns the nature of our world rather than "the" world or "my" world' (Carspecken 1996, 83). The way of validating normative claims is the shared access and its validation depends on specific contexts that an individual is in. This social world, or 'our' world, could be called into question but people from different backgrounds can reach agreement by communication. One normative validity claim in the example of waving to a friend is that people should wave to a friend when they see him or her; otherwise, they should be considered impolite. It is possible that this norm is not applied to another culture, but people from two cultures with different norms can communicate about these norms and reach their agreement.

These three validity claims are interrelated and only one validity claim cannot lead to any understanding. Habermas argues, 'reaching understanding … does not rest only on the intersubjective recognition of a single, thematically stressed validity claim'. In other words, any speech act between a speaker and a hearer achieves an agreement at three levels, as stated by Habermas (1984, 307–308),

> It belongs to the communicative intent of the speaker (a) that he perform a speech act that is *right* in respect to the given normative context, so that between him and the hearer an intersubjective relation will come about which is recognized as legitimate; (b) that he make a *true* statement (or *correct* existential presuppositions), so that the hearer will accept and share the knowledge of the speaker; and (c) that he expresses *truthfully* his beliefs, intentions, feelings, desires, and the like, so that the hearer will give credence to what is said.

What Habermas suggests here is that any claim includes objective, subjective, and normative validity claims. For an objective claim that you wave to your friend twice, a possible subjective claim is that waving to your friend twice shows you are happy to see your friend, and a normative claim is that you should wave to your friend when you see each other. For a subjective claim that 'I am happy to see my friend', a possible objective claim is that you have a friend, and a normative claim is that seeing a friend ought to be a happy experience. A normative claim that 'I should wave to a friend when I see him' implies an objective claim that you wave to a friend when seeing him and a subjective claim that you are happy to do so. These interpretations derived from the claims are entangled together and any claims cannot be understood separately.

Applying validity claims to mixed methods research

Validity claims can be applied to discuss the validity in mixed methods research because all three kinds of claims are derived from the procedures and techniques of conducting quantitative and qualitative research, or, the quantitative and qualitative components of mixed methods research. It is true that quantitative research focuses on statistically significant differences or relationships and it

produces more objective claims. However, this does not mean it contains no subjective or normative claims. Instead, it shows that objective claims are just 'foregrounded' (Dennis 2013, 25).

Furthermore, the procedure of measuring a construct, a fundamental practice in conducting quantitative research, also involves objective, subjective, and normative claims. Measurement usually begins with operational definitions, which are rooted in a shared language, culture, object-term, value, or norms. Even for a construct as simple as gender, its definition is related to the norms of a society during some period of time. Defining whether an individual is a female or male, in our modern era, is much more complex than five decades ago (Carspecken 1996). Other situations that seem very objective, such as, counting the frequency of waving, measuring the length of a table, depends on a shared system of counting and measurement. While counting system is quite similar across different cultures, the system for measuring length in the United States is different from other cultures. Therefore, when an American researcher and a researcher coming from another culture work together, they should first decide on which system they will use. In other words, the construct that each researcher hopes to measure is determined by a set of theoretical assumptions and methodological procedures that have been adopted in the culture that he resides in and have existed there for a long time. On the other hand, most of the constructs measured in educational research are individuals' views, attitudes, or subjective states, such as, self-esteem and self-efficacy, although they are represented by an objective score on a scale (Carspecken 1996).

In the same token, the three types of validity claims also exist in qualitative research. There is no question that qualitative research focuses on individuals' subjective states and subjective claims are more foregrounded, whereas it might be difficult for people to make a connection between objective claims and qualitative research. However, any qualitative study begins with primary records, which include the descriptions of the settings, participants, and happenings. These records are essentially objective claims and they form the basis on which subjective and normative claims are made explicit (Carspecken 1996). As one of the most widely used qualitative methods, observation is often considered subjective and interpretive. But the observational elements in qualitative studies, as in any other studies, have both objective and subjective components as well as normative parts. The objective component in the observation is related to the procedures and functions, the subjective component is related to the interpretation generated from the observation, and the normative aspect is related to what are acceptable for participants and researchers in the observation under a context or setting (Dennis 2013).

Because quantitative and qualitative components of mixed methods research include the same types of validity claims, it is the validity claims, rather than research design or procedure that becomes the focus of the validation process. In this sense, the validation process under the notion of validity claims might look like what is depicted in Figure 1. At the centre of this process is

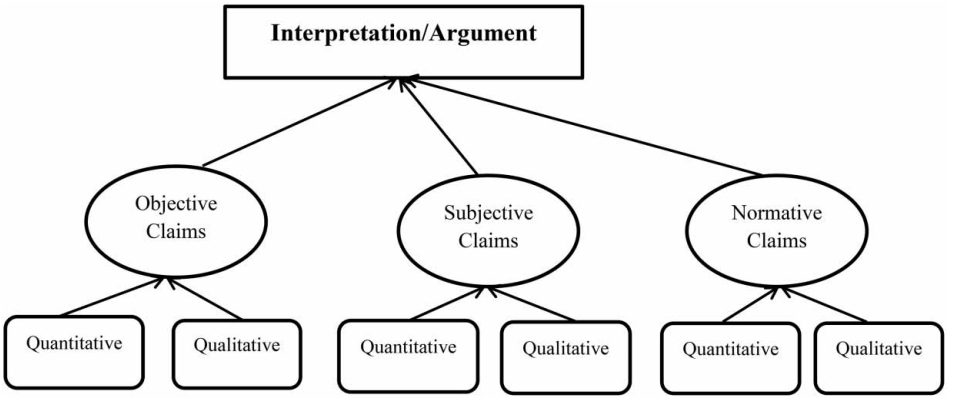

Figure 1. Validation process interpretation.

interpretation or argument, which is the goal of conducting research. In order to support any interpretation or argument, three types of validity claims are needed. These claims are generated from quantitative and/or qualitative components of a study. For instance, in a mixed methods study that examines the effectiveness of a math training program, 200 participants are surveyed before and after the program with regard to their scores on a math test and their attitudes towards studying math. In the qualitative part of the study, 10 students who are randomly selected from 200 participants are observed and further interviewed about how the program affects their attitudes. The results concerning the pre- and post-score difference and the primary record of the observation are objective claims and the results generated from the pre- and post-score difference of their attitudes in the survey and from the interviews become subjective claims. The normative claims come from the researchers' discussions of the effectiveness of the program as a whole and their role in the study.

Implications and future directions

With increasing application of mixed methods approach in educational research, the examination of validity issue in mixed methods research is of critical importance to advance educational research and disseminate research findings. The validity issue is also the central issue of the quality of educational research, which determines the quality of education in a nation. This examination is also highly pertinent to the continuous conversation on what research methodology could provide credible evidence in educational research (Berliner 2002; Donaldson, Christie, and Mark 2009; Eisenhart and Towne 2003; Slavin 2002). Paradigm wars or the quantitative–qualitative debate started from the 1970s but little consensus has been arrived until now (Donaldson, Christie, and Mark 2009). Although quantitative scholars expressed their dissatisfaction with the research paradigm in their area and called for complementing quantitative research with qualitative modes of inquiry (Howe 2004), they still discussed research methodology from post-positivism perspective and contended that randomized experimental designs are the gold standard for providing scientific evidence, particularly for establishing causality. Other researchers argued that the sole reliance on experimental methods does more harm to the field and the utilization of multiple research methods should be encouraged (Donaldson 2009; Erickson and Gutierrez 2002; St Pierre 2002).

On the other hand, when researchers understand that quantitative and qualitative approaches have its own shortcomings and mixed methods research that combines the strengths of these two approaches could be the best alternative, mixed methods research has been criticized for its predominant use of postpositivism languages (Denzin 2010), the incapability of providing valid evidence, and marginalizing qualitative research methods (Howe 2004). Addressing validity issue in mixed methods research from a perspective of qualitative theory might provide a better idea to understand the issue. Additionally, given the great influence of Habermas' theory on education and qualitative research (Ewert 1991), the selection of the theory as a framework to discuss validity issue is legitimate. Furthermore, because three types of validity claims are all used to provide validity evidence in research, it is possible to create an overarching framework to map the validity issues in quantitative, qualitative, and mixed methods approaches in educational research, thus possibly ending quantitative vs. qualitative, and quantitative, qualitative vs. mixed methods debates.

However, Habermas' theory is not without controversy. For instance, the pragmatism notions that he integrated into his theory put too much emphasis on community, therefore, leads to some form of epistemological relativism. Furthermore, his description of three validity claims was challenged by postmodernists who view diversity as more fundamental than superficial and culture as more distributed than shared (Agger 1991; Maxwell 2011). All of the three claims have normative elements that are built in at the ontological and epistemological levels. In the meantime, the ultimate goal that Habermas' communicative theory aims for, reaching an agreement, is not totally embraced by mixed methods scholars, such as Greene (2007) and Johnson (2012) who emphasized the importance of conversation but not necessarily agreement in their dialectic stances. In the future, issues related to

the validation process in mixed methods research in education warrant further investigation. For example, how can researchers tear apart objective, subjective, and normative claims from the same component or result of the study? How do researchers use the analysis techniques described in Carspecken's critical ethnography to analyse the validity claims in quantitative and qualitative components (particularly quantitative) of mixed methods research? Furthermore, what techniques should be used to support different types of claims? Carspecken (1996) mentioned that researchers can use multiple recording devices and observers, prolonged engagement, a low-inference vocabulary, member checks, and peer-debriefing to support objective claims in critical ethnography and also use member checks and peer-debriefing to support subjective and normative claims. But how could researchers use these techniques in the quantitative component? Furthermore, the research practice might be more complex than it appears in theory. Questions such as how to provide validity evidence for mixed methods research with different research purposes (i.e. confirmatory and complementary) and designs (i.e. sequential and concurrent studies) will be addressed.

Acknowledgements

The earlier version of this article has been presented at 2014 Annual Convention of American Educational Research Association, April, Philadelphia, PA, USA.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. This does not mean that there is no difference between American pragmatists' work and Habermas' work. Biesta (1994) points out that differences exist even among American pragmatists. While Habermas' work focuses more on linguistic and communicative competence aspect, Mead's work focuses on intersubjectivity and Dewey's work on practicality.

References

Agger, B. 1991. "Critical Theory, Poststructuralism, Postmodernism: Their Sociological Relevance." *Annual Review of Sociology* 17 (1): 105–131.

American Educational Research Association. American Psychological Association, & National Council on Measurement in Education (2014). *Standards for Educational and Psychological Testing*. Washington, DC: AERA.

Berliner, D. 2002. "Educational Research: The Hardest Science of All." *Educational Researcher* 31 (8): 18–20. doi:10.3102/0013189X031008018.

Bhaskar, R. 1989. *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*. London: Verso.

Biesta, G. 2010. "Pragmatism and the Philosophical Foundations of Mixed Methods Research." In *Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie. 2nd ed., 95–118. Thousand Oaks, CA: Sage.

Biesta, G. J. J. 1994. "Education as Practical Intersubjectivity: Towards a Critical-Pragmatic Understanding of Education." *Educational Theory* 44 (3): 299–317.

Borsboom, D., G. J. Mellenbergh, and J. van Heerden. 2004. "The Concept of Validity." *Psychological Review* 111 (4): 1061–1071.

Brandom, R. 1994. *Making it Explicit: Reasoning, Representing and Discursive Commitment*. Cambridge, MA: Harvard University Press.

Carspecken, P. 1996. *Critical Ethnography in Educational Research: A Theoretical and Practical Guide*. New York, NY: Routledge.

Carspecken, P. F. 2003. "Ocularcentrism, Phonocentrism and the Counter Enlightenment Problematic: Clarifying Contested Terrain in our Schools of Education." *Teachers College Record* 105 (6): 978–1047.

Cho, J., and A. Trent. 2006. "Validity in Qualitative Research Revisited." *Qualitative Research* 6 (3): 319–340. doi:10.1177/1468794106065006.

Christ, T. W. 2010. "Teaching Mixed Methods and Action Research: Pedagogical, Practical, and Evaluation Considerations." In *Handbook of Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie. 2nd ed., 643–676. Thousand Oaks, CA: Sage.

Christ, T. W. 2013. "The Worldview Matrix as a Strategy when Designing Mixed Methods Research." *International Journal of Multiple Research Approaches* 7 (1): 110–118.
Collins, K. M. T., A. J. Onwuegbuzie, and R. B. Johnson. 2012. "Securing a Place at the Table: A Review and Extension of Legitimation Criteria for the Conduct of Mixed Research." *American Behavioral Scientist* 56 (6): 849–865. doi:10.1177/0002764211433799.
Creswell, J. W. [Editorial]. (2009). "Mapping the Field of Mixed Methods Research." *Journal of Mixed Methods Research* 3 (2): 95–108. doi:10.1177/1558689808330883.
Creswell, J. W. 2013. *Research Design: Qualitative, quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage.
Creswell, J. W., and D. Miller. 2000. "Determining Validity in Qualitative Research." *Theory into Practice* 39 (3): 124–130. doi:10.1207/s15430421tip3903_2.
Creswell, J. W., and V. L. Plano Clark. 2007. *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: Sage.
Creswell, J. W., V. L. Plano Clark, M. L. Gutmann, and W. E. Hanson. 2003. "Advanced Mixed Methods Research Designs." In *Handbook of Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie, 209–240. Thousand Oaks, CA: Sage.
Dellinger, A. B., and N. L. Leech. 2007. "Toward a Unified Validation Framework in Mixed Methods Research." *Journal of Mixed Methods Research* 1 (4): 309–332. doi:10.1177/1558689807306147.
Dennis, B. 2013. "Validity Crisis' in Qualitative Research: Still? Movement toward a Unified Approach." In *Qualitative Research: A Reader on Philosophy, Core Concepts, and Practice*, edited by B. Dennis, L. Carspecken, and P. Carspecken, 3–37. Series-counter points: Studies in the Postmodern Theory of Education. New York and Frankfurt: Peter Lang Publishers.
Denzin, N. K. 2010. "Moments, Mixed Methods, and Paradigm Dialogs." *Qualitative Inquiry* 16 (6): 419–427. doi:10.1177/1077800410364608.
Denzin, N. K., and M. D. Giardina. 2008. *Qualitative Inquiry and the Politics of Evidence*. Walnut Creek, CA: Left Coast Press.
Donaldson, S. I. 2009. "In Search of the Blueprint for an Evidence-based Global Society." In *What Counts as Credible Evidence in Applied Research and Evaluation Practice?* edited by S. I. Donaldson, C. A. Christie, and M. M. Mark, 2–18. Thousand Oaks, CA: Sage.
Donaldson, S. I., C. A. Christie, and M. M. Mark, eds. 2009. *What Counts as Credible Evidence in Applied Research and Evaluation Practice?* Thousand Oaks, CA: Sage.
Eisenhart, M., and L. Towne. 2003. "Contestation and Change in National Policy on 'Scientifically based' Education Research." *Educational Researcher* 32 (7): 31–38. doi:10.3102/0013189X032007031.
Embretson, S. E. 2007. "Construct Validity: A Universal Validity System or Just Another Test Evaluation Procedure?" *Educational Researcher* 36 (8): 449–455. doi:10.3102/0013189X07311600.
Erickson, F., and K. Gutierrez. 2002. "Culture, Rigor, and Science in Educational Research." *Educational Researcher* 31 (8): 21–24. doi:10.3102/0013189X031008021.
Ewert, G. D. 1991. "Habermas and Education: A Comprehensive Overview of the Influence of Habermas in Educational Literature." *Review of Educational Research* 61 (3): 345–378.
Feilzer, M. Y. 2010. "Doing Mixed Methods Research Pragmatically: Implications for the Rediscovery of Pragmatism as a Research Paradigm." *Journal of Mixed Methods Research* 4 (1): 6–16. doi:10.1177/1558689809349691.
Greene, J. C. 2007. *Mixed Methods in Social Inquiry*. San Francisco, CA: Wiley.
Greene, J. C. 2008. "Is Mixed Methods Social Inquiry a Distinctive Methodology?" *Journal of Mixed Methods Research* 2 (1): 7–22. doi:10.1177/1558689807309969.
Greene, J. C., and J. N. Hall. 2010. "Dialectics and Pragmatism: Being of Consequence." In *Handbook of Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie. 2nd ed., 119–144. Thousand Oaks, CA: Sage.
Habermas, J. 1984. *The Theory of Communicative Action, Volume 1: Reason and the Rationalization of Society*. Translated by T. McCarthy. Boston, MA: Beacon Press.
Habermas, J. 1987. *The Theory of Communicative Action, Volume 2: Lifeworld and System: A Critique of Functionalist Reason*. Translated by T. McCarthy. Boston, MA: Beacon Press.
Habermas, J. 1988. *On the Logic of the Social Sciences*. Boston, MA: MIT Press.
Hall, B., and K. Howard. 2008. "A Synergistic Approach: Conducting Mixed Methods Research with Typological and Systematic Design Considerations." *Journal of Mixed Methods Research* 2 (3): 248–269. doi:10.1177/1558689808314622.
Hart, L. C., S. Z. Smith, S. L. Swars, and M. E. Smith. 2009. "An Examination of Research Methods in Mathematics Education (1995–2005)." *Journal of Mixed Methods Research* 3 (1): 26–41. doi:10.1177/1558689808325771.
Hesse-Biber, S. N., and P. Leavy. 2008. "Introduction: Pushing on the Methodological Boundaries: The Growing Need for Emergent Methods within and Across the Disciplines." In *Handbook of Emergent Methods*, edited by S. N. Hess-Biber and P. Leavy, 1–15. New York, NY: Guilford.
Howe, K. 2004. "A Critique of Experimentalism." *Qualitative Inquiry* 10 (1): 42–61. doi:10.1177/1077800403259491.
James, W. [1907] 1995. *Pragmatism*. New York, NY: Dover.
Johnson, R. B. 2009. "Comments on Howe: Toward a More Inclusive 'Scientific Research in Education." *Educational Researcher* 38 (6): 449–457. doi:10.3102/0013189X09344429.

Johnson, R. B. 2012. "Dialectical Pluralism and Mixed Research." *American Behavioral Scientist* 56 (6): 751–754. doi:10.1177/0002764212442494.
Johnson, R. B., and A. J. Onwuegbuzie. 2004. "Mixed Methods Research: A Research Paradigm whose Time has Come." *Educational Researcher* 33 (7): 14–26. doi:10.3102/0013189X033007014.
Johnson, R. B., A. J. Onwuegbuzie, and L. A. Turner. 2007. "Toward a Definition of Mixed Methods Research." *Journal of Mixed Methods Research* 1 (2): 112–133. doi:10.1177/1558689806298224.
Kane, M. T. 2006. "Validation." In *Educational Measurement*, edited by R. L. Brennan. 4th ed., 17–64. Westport, CT: Praeger.
Kuhn, T. S. 1962. *The Structure of Scientific Revolutions*. Chicago, IL: University of Chicago Press.
Lather, P. 1993. "Fertile Obsession: Validity after Poststructuralism." *Sociological Quarterly* 34 (4): 673–693. doi:10.1111/j.1533-8525.1993.tb00112.x.
Lee, Y.-J., and J. C. Greene. 2007. "The Predictive Validity of an ESL Placement Test: A Mixed Methods Approach." *Journal of Mixed Methods Research* 1 (4): 366–389. doi:10.1177/1558689807306148.
Leech, N. L. 2010. "Interviews with the Early Developers of Mixed Methods Research." In *SAGE Handbook of Mixed Methods in Social & Behavioral Research*, edited by A. Tashakkori and C. Teddlie. 2nd ed., 253–274. Thousand Oaks, CA: Sage.
Maxwell, J. A. 2011. *A Realist Approach for Qualitative Research*. Thousand Oaks, CA: Sage.
Maxwell, J. A., and K. Mittapalli. 2010. "Realism as a Stance for Mixed Method Research." In *Handbook of Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie. 2nd ed., 145–167. Thousand Oaks, CA: Sage.
McCarthy, T. 1981. *The Critical Theory of Jurgen Habermas*. Cambridge, UK: Polity Press.
McConney, A., A. Rudd, and R. Ayres. 2002. "Getting to the Bottom Line: A Method for Synthesizing Findings within Mixed-Method Program Evaluations." *The American Journal of Evaluation* 23 (2): 121–140. doi:10.1016/S1098-2140(02)00164-9.
Mead, G. H. 1934. *Mind, Self, and Society*. Chicago, IL: Chicago University Press.
Mertens, D. M. 2003. "Mixed Methods and the Politics of Human Research: The Transformative-Emancipatory Perspective." In *Handbook of Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie, 135–166. Thousand Oaks, CA: Sage.
Mertens, D. M. 2007. "Transformative Paradigm: Mixed Methods and Social Justice." *Journal of Mixed Methods Research* 1 (3): 212–225. doi:10.1177/1558689807302811.
Messick, S. 1989. "Validity." In *Educational Measurement*, edited by R. L. Linn, 13–103. New York, NY: Macmillan.
Messick, S. 1995. "Validity of Psychological Assessment: Validation of Inferences from Persons Responses and Performances as Scientific Inquiry into Score Meaning." *American Psychologist* 50 (9): 741–749. doi:10.1037/0003-066X.50.9.741.
Messick, S. 1998. "Test Validity: A Matter of Consequence." *Social Indicators Research* 45 (1/3): 35–44. doi:10.1023/A:1006964925094.
Morgan, D. L. 2007. "Paradigms Lost and Pragmatism Regained: Methodological Implications of Combining Qualitative and Quantitative Methods." *Journal of Mixed Methods Research* 1 (1): 48–76. doi:10.1177/2345678906292462.
O'Cathain, A. 2010. "Assessing the Quality of Mixed Methods Research: Towards a Comprehensive Framework." In *Mixed Methods In Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie. 2nd ed., 531–598. Thousand Oaks, CA: Sage.
Onwuegbuzie, A. J., and N. L. Leech. 2007. "Validity and Qualitative Research: An Oxymoron?" *Quality and Quantity* 41 (2): 233–249. doi:10.1007/s11135-006-9000-3.
Onwuegbuzie, A. J., and R. B. Johnson. 2006. "The Validity Issue in Mixed Research." *Research in the Schools* 13: 48–63.
Onwuegbuzie, A. J., R. B. Johnson, and K. M. T. Collins. 2011. "Assessing Legitimation in Mixed Research: A New Framework." Quality & Quantity 45 (6): 1253–1271.doi:10.1007/s11135-009-9289-9.
Slavin, R. 2002. "Evidence-based Educational Policies: Transforming Educational Practice and Research." *Educational Researcher* 31 (7): 15–21. doi:10.3102/0013189X031007015.
Smith, J. K., and L. Heshusius. 1986. "The End of the Quantitative-Qualitative Debate among Educational Inquirers." *Educational Researcher* 15 (1): 4–12. doi:10.3102/0013189X015001004.
Steinhoff, U. 2009. *The Philosophy of Jurgen Habermas*. Translated by K. Schollner. Oxford: Oxford University Press.
St Pierre, E. A. 2002. "'Science' rejects postmodernism." *Educational Researcher* 31 (8): 25–27. doi:10.3102/0013189X031008025.
Tashakkori, A., and C. Teddlie. 2003. "The Past and Future of Mixed Methods Research: From Data Triangulation to Mixed Model Designs." In *Handbook of Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie, 671–701. Thousand Oaks, CA: Sage.
Tashakkori, A., and C. Teddlie. 2008. "Quality of Inferences in Mixed Methods Research: Calling for an Integrative Framework." In *Advances in Mixed Methods Research*, edited by M. M. Bergman, 101–119. Thousand Oaks, CA: Sage.
Tashakkori, A., and C. Teddlie, eds. 2010. *Mixed Methods in Social and Behavioral Research*. 2nd ed. Thousand Oaks, CA: Sage.
Tashakkori, A., and J. W. Creswell. [Editorial]. 2007. "The New Era of Mixed Methods." *Journal of Mixed Methods Research* 1 (1): 3–7. doi:10.1177/2345678906293042.
Teddlie, C., and A. Tashakkori. 2006. "A General Typology of Research Designs Featuring Mixed Methods." *Research in the Schools* 13: 12–28.
Teddlie, C., and A. Tashakkori. 2010. "Overview of Contemporary Issues in Mixed Methods Research." In *Mixed Methods in Social and Behavioral Research*, edited by A. Tashakkori and C. Teddlie, 2nd ed., 1–41. Thousand Oaks, CA: Sage.