

## **Epistemological Inclusion: Critical Thinking in Teacher Education**

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*The application of critical thinking in K-12 and higher education today enjoys universal approval at most levels of learning and unites educators. However, there is one view of critical thinking in teacher education that perceives traditions, i.e. non-scientific ways of knowing, as an impediment to learning. The educator's role is to encourage an abandonment of "old ways of thinking" and adopt an interpretation and practice of critical thinking that privileges a scientific perspective and epistemology. The author begins with an illustration for discussion and then argues for a broader practice of critical thinking that is epistemologically broad and inclusive.*

### **INTRODUCTION**

At a recent conference of teacher educators, participants had the opportunity to hear—in one double session—different understandings and practices of critical thinking in teacher education. The first pair of presenters, both experienced and long serving education professors, described in detail an approach they employ by which student-teachers are taught to integrate critical. “Critical thinking” they said, “is the smashing down of old ways of thinking” (Personal communication, May, 2014) and “the purpose [of critical thinking] is to always rock their boat” (Personal communication, May, 2014).

In the question and answer time, the two experienced education professors clarified their definition of critical thinking as “utilizing new and innovative ideas and not previous [old] knowledge or values from a bygone era” (Personal communication, May, 2014). While their original definition of “smashing down old ways of thinking” remained, in the question time they spoke about their ultimate objective to advance critical thinking by steering their education students’ towards reason, logic and in particular scientific knowledge. No one present in the room (except the author of this paper) showed any surprise that experienced education professors would choose to use the phrase “smashing down old ways of thinking” or concede that although the epistemic authority of scientific knowledge is great, it is not bias-free, objective and most importantly all-inclusive of other epistemologies (Rescher, 1999, p. 243).

This lack of surprise and the experience itself is worth laboring over. The professor’s description of critical thinking disregards epistemologies that are grounded in cultural, historical, moral and religious understandings and have been passed down from culture, family, community or Aboriginal Elder’s traditions. Secondly, their description tacitly promotes the view that knowledge from the past or knowledge gained from non-scientific means is simplistic and an impediment for thinking effectively i.e. critically. If such a definition were acted upon, the diverse epistemologies that do in fact advance thinking, knowledge and understanding such as poetry, drama, religion and proverbial wisdom would be overlooked (Rescher, 1999). Moreover, a homogenous and narrow practice of teaching critical thinking ultimately promotes an Ethnocentric biased view of the world, that is, judging another culture solely by

the values and standards of one's own culture. Finally, a false dichotomy is established between “old ways of thinking” which is perceived as any tradition which supposedly lacks dependence on logic, reason and scientific evidence (see Widdowson, 2010), and so called progressive ways of thinking, which are assumed to be logical, reasonable and science based (see Egan, 2002).

Teacher educators have been entrusted with the welfare and education of all learners and with this responsibility positive affirmation for any learning environment which confines critical thinking to the “smashing down of old ways of thinking” not only produces an ‘us and them’ view of human beings but inflates the authority of scientific epistemology as the only way to know anything of value. This is not only false but fails to generate a safe place for all students. The “smashing down of old ways of thinking” is not consistent with the important human project of learning together within growing multicultural, multiethnic and religious environments in Western societies (Samuels, 2010; Kaufmann, 2010).

So can teachers and their school students retain their “old ways of thinking” and still be capable of thinking critically or should they first agree to a criterion by which education faculty determine if and when “old ways of thinking” interfere with critical thinking and abandoned? In the central sections of this paper, the author considers this question in light of other perspectives of thinking critically, together with a hope that educational institutions can become more epistemologically sensitive and inclusive by making space for other ways of knowing, thinking and understanding within the classroom. Some suggestions are then raised to consider the prospect that “old ways of thinking” and other ways of thinking can peacefully coexist in any critical thinking model for teaching and learning practices.

## **SCIENTIFIC AND PRAGMATIC VIEWS OF CRITICAL THINKING**

The phrase “smashing down of old ways of thinking” is a progressive rational feature of education which is consistent with two unfortunate features of education today: The rampant pragmatism and the concomitant devaluation of non-scientific traditions. By non-scientific traditions the author includes the religious, cultural and indigenous traditions that have been handed down from one generation to the next for at least a minimum of three generations and inform people about what is real, what knowledge is important to have and what is of value. The traditions act as a grid for which epistemological, axiological and metaphysical claims are filtered. Although the traditions are not devoid of an empirical reality, I use the term “non-scientific” simply to make the distinction between scientific knowledge and other types of valid knowledge such as intergenerational, personal, historical, ethical, religious and/or cultural ways of knowing. Of course it is entirely possible that some traditions neglect, abuse or exploit by permitting inappropriate, damaging, unhealthy or immoral behavior. But in this case we know that the tradition is perverted and we place the term “tradition” in quotation marks since the very meaning of tradition is at issue here.

In the context of higher education pragmatism is understood as “every situation learners encounter is in some sense unique” (Biesta, & Burbules, 2003, p. 13). Pragmatic critical thinking does not necessarily draw on knowledge from the past, but has a dialectical progressive future oriented scientific approach to creating new knowledge. Traditional ways of knowing which are deemed non-scientific are viewed with suspicion because they make students passive recipients of other’s ideas (Egan, 2002).

Various commentaries on critical thinking rarely question or scrutinize this privileging of one epistemology over another (Browne & Freeman, 2000). In the literature critical thinking is discussed either from the philosophical or the cognitive-psychological perspective. In the philosophical, the portrait of the ideal critical thinker is “someone who is inquisitive in nature, open-minded, flexible, fair-minded, has a desire to be well-informed, understands diverse viewpoints, and is willing to both suspend judgment and to consider other perspectives” (Facione, 1990, cited in Lai, 2011, p. 5). In the cognitive-psychology, critical thinking is the type of actions, strategies, behaviors or list of skills or procedures a person can do (Lewis & Smith, 1993). The educational approach to critical thinking represents itself in the work of Benjamin Bloom comprising the three levels of analysis, synthesis, and evaluation (Kennedy, Fisher, & Ennis, 1991).

Leiter suggests that any epistemological claim to truth that is not scientific must answer to scientific results and until that happens all beliefs outside of science should be marked as false (Leiter, 2013). Of course, Leiter admits that as a philosophical naturalist his bias embraces a doctrine that the natural world is all there is. The challenge here is to make the important distinction between epistemological-tolerance and identity-respect. There is nothing wrong with challenging someone's epistemological claims and providing arguments to the contrary. This is critical thinking; weighing the evidence, looking for false premises and so forth. However, because human beings do science, there is always bias, interpretation and subjectivity in all epistemological claims, including science. Therefore, educators have a part to play in working towards understanding how others make sense of the world through their epistemological traditions. Epistemological agreement is not essential for critical thinking to flourish, but respect for the person who professes the epistemology is essential.

Yet, this important distinction between epistemological difference and identity is often overlooked. Moreover, the possibility that one can learn anything valuable from another epistemology besides science is apparently impossible for some educators to comprehend. For example, "Reilly, a professor in the humanities, views critical thinking exclusively as an epistemology of scientific knowing, claiming that 'students must abandon their [old] ways of thinking in favor of science' " (Halx and Reybold, 2005, p. 302). Back in the late 1980s, Glenn (1988) suggested that the reason educators in public education had been promoting critical thinking in schools so actively was to "liberate individuals from intermediate traditions and loyalties, in the interest of scientific progress" (p. 236). Similarly, Boghossian, another educator who teaches critical thinking at the university level, promotes an education for his students that entails what he describes as a "critical thinking revolution". He argues that a 'revolution' would require the more 'rational' pragmatic thinkers to use interventionist strategies to "liberate" those who are not as "rational" as themselves such as those who retain to non-scientific ways of knowing and interpreting the world (Boghossian, 2012).

Likewise, the goal and process of undergraduate education, Mentkowski et al. (2000) contends, should be set within a liberal education that encourages development from "a conformist to a post-conventional way of being in the world" (p. 105). Brighouse (2000) who speaks of religious traditions as "inferior and repressive" (p. 71) and privileges scientific thinking suggests that critical thinking must be liberated from any form of tradition which tends to limit scientific rationality and critical thinking skills (see also Widdowson, 2010).

In a study noting the emphasis that university educators place on critical thinking, Paul, Elder and Bartell (2004) cited in Halx and Reybold (2005) offer some reasons why scientific critical thinking should be encouraged. They maintain that without critical thinking human beings naturally gravitate towards "prejudice, over-generalization, common fallacies, self-deception, rigidity, and narrowness" (p. 296). To end self-deception, Mill (2013) suggests that critical thinking in education should reflect a modernist or scientific standard. Learners should be taught to trust a person's claims only based on repeatability, experience and accuracy. Mill (2013) then recommends to move forward with advancing critical thinking in education drawing on science for answers. Mill suggests that educators should consider "the vast body of research in social psychology examining persuasion and attitude change" (p. 409). Of course self-deception, rigidity, and narrowness would be understood and labeled differently depending on the tradition that one is using to evaluate.

Although critical thinking is sometimes discussed as a "consideration of other perspectives" (Halx & Reybold, 2005, p. 296) research by Halx and Reybold also gained the following from an interview with a university professor sharing what could only be described as an ill-considered practice of critical thinking in a classroom:

It takes a faculty member then— and also other students—to hold that spouter's feet to the fire and challenge [that individual]—one of the things I do is pull students out of their chairs and force them to engage with me—students must be shown how to manipulate and dismantle information. (Halx & Reybold, 2005, p. 304)

Similarly, a deconstructing of knowledge is also recommended by Widdowson (2010) who argues that universities should enforce disciplinary action against any group on campus that relies on and teaches others to believe unjustified claims about reality or knowledge. Widdowson maintains that “superstition and irrationality” as opposed to “reason and logic” should not be given any public space (p.4). All religions’ traditions, including indigenous traditions, she suggests, “are based on superstition and irrationality, and asserting these traditions as legitimate knowledge is an educational disservice” (Widdowson, 2010, p. 6).

In a similar vein to Widdowson (2010), Henderson and Hurley (2013) present a caricature of “non-critical” thinkers who live by their non-scientific traditions by describing them as “right-wing authoritarians” (p. 248), and also “traditionalists, intellectually conservative, docile, fearful, suspicious, and egocentric” (p. 250-251). They further outline two other ‘typical’ traits such as having a “strong adherence to social convention” and “submissive to authorities” (p. 249). They claim that submissive “attitudes hinder the development of critical thinking skills in the classroom because they inhibit the students’ ability to consider other worldviews” (Hurley & Hurley, 2013, p. 249). Although Geertsen (2003) maintains that one characteristic necessary to foster higher-level thinking is a respect for others’ views, Geertsen (2003) and French and Rhoder (1992) then imply that students who refuse to reexamine their non-scientific traditional views ultimately have a defective psychological disposition.

However, Paul, Elder, and Bartell (2004, cited in Halx & Reybold, 2005, p. 296) argue that we can and should learn from minority perspectives which have been largely excluded or silenced. They later suggest that without a careful application of critical thinking human beings naturally “gravitate towards prejudice, self-deception, and narrowness” (p. 296). A more comprehensive and inclusive view of critical thinking is offered by Pazmino (1994) who argues that receptivity is required to voices forgotten or rarely heard.

Scientific ways of thinking are assumed without question to be objective and trustworthy and traditional ways of knowing that a student owns is to be criticized, ignored or deconstructed. Vaidya (2013) asks if students and instructors are really cognizant of other methods of investigation besides a scientific analysis. She highlights skepticism and credulity as two other approaches to knowledge acquisition. Skepticism is not committed to one reality on a matter, and credulity is a belief that the majority of experts, i.e., priests, popes, Ph.D.’s, Elders or ‘knowledge keepers’ as termed by indigenous groups, are correct. Kuhn (1999) notes that credulity is one way people can know what is true “either through direct apprehension or the opinion of experts” (p. 22). These other methods of knowing are significant and applied by most people on a daily basis but rarely noted as options.

Unfortunately, the view that traditional ways of thinking leads to passive thinking offers educators and ultimately their students a narrow dualistic approach to knowledge in general and critical thinking in particular. All knowledge and ways of knowing are passed down within a particular tradition. Scientific epistemology has its own culture, norms and values and are also set within a tradition. Secondly, because a learner incorporates other epistemologies besides science to analyze an issue, concept or event, does not necessarily lead to lifeless thinking. Since the 1960s educational thought has recognized, at least in theory, a multiplicity of epistemologies are valuable and enriching for understanding the complex nature of reality, and especially important within diverse multicultural and multiethnic classrooms (see BC education plan, 2015 and Peters, 1967).

Well over ten years ago Marsden (1997) argued that there was a growing worldview perspective in education that should be recognized because of its antagonism towards traditions and traditional thinking. Marsden (1997) explains:

This philosophy is found in the spiritual descendants of John Dewey where the tendency has been to absolutize the pragmatic method in education. Absolutized liberal pragmatism has little tolerance for different perspectives and in particular groups that hold to traditional ways of thinking that might challenge the pragmatic absolutes. (Marsden, 1997, p. 26)

What it means to think critically is then wedded to a rational orderly methodology drawn from ‘rigorous scientific evidence’ and emphasized over ‘opinion-based’ and subjective decision making. The key point is that comparable with scientific pragmatism, “effective” pedagogy should not include traditional epistemologies which are judged as “un-scientific”.

The source that entails one to conclude that critical thinking requires the “smashing down of old ways of thinking” is rooted in a scientific and pragmatic theory of learning. This forceful epistemology promotes a shift from the locus of authority reflected in the local community and family to that of the ‘enlightened’ modern pragmatic institution. As a consequence, rather than draw upon the perspectives and epistemologies offered by traditional, scientific and pragmatic ways of critical thinking, the precepts that inform learners with traditional epistemologies are largely discounted as irrelevant, simplistic—knowledge to be “smashed down”.

## **FROM THE IS TO THE OUGHT**

It is suggested that if critical thinking requires the “smashing down [of] old ways of thinking” learners will be exposed to a narrow and intolerant epistemology devoid of other ways of thinking and knowing. The ideal also fails to include the subjective and the intuitive voice of all learners, leaving students ignorant of other realities. It presents a false dichotomy of choosing between traditional or scientific thinking. Hurley and Hurley (2013) suggest that setting up false dichotomies like this could require the teacher to identify her students with a strong adherence to social convention and submission to traditions and authorities, and describe them as displaying a skills deficit (see Widdowson, 2010). Contemporary ideas and methods, Egan notes, “present learning as some kind of binary moral choice between the traditional, passive, forced, and vicious and the progressive, active, reliable and rational” (Egan, 2002, p. 45).

The concerns leveled against an adherence to social conventions are an exploitation of critical thinking that was precisely the criticism Socrates launched against the Sophists and their teachings. Certainly some beliefs or values are unhelpful and could be even harmful for critical thinking but the “smashing down of old ways of thinking” is far removed from this perspective and as such has moved away from the intellectual virtues – in particular the virtue of intellectual humility (Bowell & Kemp, 2002). Similarly, Portelli and Hare (1996) argue that critical thinking is a humble act that essentially requires the learner to reflect humility and a commitment to learn from others. In the spirit of humility one would be better served to reflect upon a sensitive or controversial issue within its context where there are supporters and detractors on both sides, and then attempt to understand the thinking and solutions offered by another person. Critical thinkers could then examine and evaluate the details— scientifically and non-scientifically for the reasons offered. This would confirm to learners that there are other ways of knowing besides only a scientific approach. In fact, Smoker and Groff (1996) list three categories of legitimate knowledge in the world in addition to scientific knowledge that could be included as critical thinking. These comprise the epistemologies offered by the mystical/spiritual, knowledge from Indigenous peoples and organized religion and knowledge from fundamental traditions and beliefs.

The challenge here is that some educators do not see the value of traditional knowledge in the same way as traditional groups do (Tanaka, 2009). Knowledge is important only for what it can *do*. Knowledge is supposedly important only if it is useful and what is measured as “useful” is obvious only to those who share principles which render traditional knowledge as simple, and scientific knowledge as complex (Egan, 2002).

If we accept a privileging of scientific knowledge in teaching and learning we would have to be consistent and discard the traditions of art, literature, music, history, mathematics and many other fields of human endeavor that are essential aspects of the modern world but are grounded in traditions that are not contingent on the scientific method for validation (Bailey, 2014). Yet, no scientific endeavor could even begin without some set of received non-scientific beliefs since science itself operates within traditional frameworks of assumption that cannot be empirically verified on scientific grounds (see Kuhn, 1962).

Critical thinking does not have to be understood in this inadequate way. Inclusive teaching and learning can offer a more comprehensive epistemology for consideration. Rather than ask the learner to adopt one methodology for investigating an issue, which might assume that there is only one way to research, the teacher and learner take account of alternate stories and competing points of view while not jumping to judgment. The freeing of minds to think critically about issues would occur at the same time for developing awareness of the traditions in which all minds are embedded.

If it is true that scientific knowledge is only one epistemology, critical thinkers should not be held hostage to a scientific methodology. As indigenous authors Battiste, Kanu and others have argued, traditional knowledge is living knowledge because it pursues truth and reality, and always follows the evidence where it leads. Kanu (2011) suggests that criticisms leveled at traditional epistemologies are “inaccurate characterizations of the ‘other’ and their truth, knowledge and histories (p. 47). The scientific bases, “while not superficial, do represent only a surface level of a complete understanding of the subject” (Bransford, Brown, & Cocking, 1999, p. 14). Also as previously noted, to compartmentalize knowledge as scientific or not is to fail to recognize knowledge holistically, interwoven and interdependent. The obvious problem with compartmentalizing knowledge must be considered if critical thinking does not fall further into an epistemological prejudice of colonialism where a Eurocentric education system has taught learners to distrust traditional-spiritual knowledge structures (see Widdowson, 2010).

Critical thinking should not require the learner to divorce herself from traditional beliefs but rather be free to share diverse views and be prepared to dialogue within the public domain of education and schooling. The often neglected question asked is if a pragmatic or scientific application of critical thinking divorced from received non-scientific traditions and values should be accepted from a learner who embraces their traditions to make sense of the world. This should be decided by individuals who own a living tradition and not by those who do not agree. What a learner values and the knowledge they extract from their traditions should not comprise a “smashing down of old ways of thinking” but a humility that seeks to understand why a learner adopts the knowledge and values they do.

## **THE IMPORTANCE OF DIVERSE EPISTEMOLOGIES**

For thousands of years’ traditions and intergenerational knowledge have been fundamental to how people have lived in societies and educated their young. Today living traditions still provide a family flourishing and preserving reality, integral to identity formation. Kroeker and Norris (2013) note that “to be raised in a particular tradition provides a necessary sense of identity, epistemological awareness and stable moral environment from which to explore the world” (p. 310).

A living tradition adopts not only factual propositions but more importantly value claims (Vaidya, 2013) and so is often linked to a person’s identity— their core being. Critical thinkers should be encouraged to retain their traditional epistemologies because traditions provide knowledge, context and value (Pelikan, 1992). However, if traditional beliefs or practices prevent the forces of innovation and individual emancipation for thinking (see Bowers, 2011) then educators would have a compelling reason to encourage the adoption of pragmatic or scientific practices of critical thinking and discourage non-scientific epistemologies, although this would have to be discussed and informed by all stakeholders. Non-scientific traditions are not in opposition to scientific ways of thinking critically but rather provide an awareness of the culture and worldview in which one is embedded and shared (Bowers, 2011; Groome, 2001; Valk, 2007).

Traditions are important for critical thinking because they are owned by people and are part of their story, consequently the educator’s role should be as a “mediator between the young person and their tradition” (Huebner, 1999, p. 383). Having a traditional frame of reference makes a difference in how the data of human experience are seen and understood. Traditions are vital for critical thinking because they offer students some further questions to be answered, some additional theories to be examined, and some alternate projects to be undertaken, all of which should be of interest to a comprehensive education (Porath, 2013).

Traditions are carried and embodied in people and communities located in people and in the present (Huebner, 1999). If traditions are anything which are handed down from the past to the present and are a way for people to determine what is real and valuable, then educators ought to be gracious hosts and include multiple perspectives in the learning process whether it be public or private institutions of learning. There must be public spaces available in higher education for the conflicts that young people have with the knowledge, reality and values that higher education advances.

We can take an example of the importance of traditional epistemology from the Māori people of New Zealand. In traditional Māori belief there is something beyond the cramped world of everyday empirical experience. They do not live in a closed system where what we see is all there is (Barlow, 1994). The traditional principle of interconnectedness and intergenerational knowledge is important and meaningful to the Māori people. Other groups who hold to living traditions such as those in Canada: First Nations spiritual rituals; the religious practices of Chinese and Japanese immigrants; Sikhs, Christians, Muslims, and Hindus each have a long history of traditions and presence in Canada. Their living tradition includes not only the physical world but beyond the physical—the meta-physical or spiritual—with intergenerational knowledge passed down as truth from one generation to the next. For the Māori, First Nation and other cultural peoples to think and learn effectively entails the inclusion of their epistemology and traditions.

No one creates their own reality from scratch because as human beings we are all embedded in shared traditions and propositional claims about the world. Traditions provide a normative force that holds a society together (Shills, 1981). They provide remembered stories that “render a community or culture capable of ordering their new experience in a manner consistent with the story” (Hauerwas, 1981, p. 54, cited in Fernhout, 1997, p. 86). Traditions are reenacted and shared as knowledge between past generations and a younger one. They are a core feature of being human in community with likeminded people. Traditions are accumulated understanding and provide a pattern of thinking and learning that guides action. All societies, including Western societies, have been guided by both scientific and non-scientific traditions.

Education is also embedded in a tradition and so Wineberg (2008) argues, education can be open to other views of reality and by doing so become a gift of hospitality. Educators act as good hosts inviting young people into an open space of community and life together. Community life has a commitment to traditions and education acts hospitably to make room for the young person into the life of the community.

## **TEACHING AND LEARNING AS A HOSPITABLE ACT**

A comprehensive critical thinking model should help students be inquisitive in nature, humble in approach, open-minded, flexible, fair-minded, have a desire to be well-informed, and able to understand diverse viewpoints, traditions and perspectives (see Facione, 1990, cited in Lai, 2007, p. 5; Portelli, 2001). The “smashing down of old ways of thinking” simply lacks this comprehensiveness.

Western society is epistemologically diverse and as such critical thinkers need to reflect and be engaged with such diversity in their learning. To do this well teachers and learners must be incarnational, transformational and exhibit self-sacrifice to learn in order to welcome the Other with open hands in an act of respect. Education is relational requiring meaningful inclusion and so teachers and educators must be open to the problems that a narrow perspective of critical thinking can have on learners with traditions outside of the scientific pragmatic model. This is because like any pedagogical practice critical thinking can be used as an instrument of emancipation or tool of oppression.

Critical thinking should not require the student to choose scientific or traditional ways for investigation; rather both can and should inform one another. As the educator van Manen (1991) has said, “we need to be neither iconoclasts who only rebel and tear down traditions, nor iconolators who blindly submit to the monuments of traditions” (van Manen, 1991, p. 16). For learners and educators to gain a deep inside perspective of other types of knowledge, reality and value, so important in today’s multicultural classrooms, an inclusive hospitable practice of critical thinking is needed. In the words of

philosopher Emmanuel Levinas, education ought to be an unconditional responsibility *to* the Other. Levinas understood the Other to be “what I myself are not” (Egea-Kuehne, 2008, p. 30).

If teaching and learning is a human flourishing and hospitable activity, then educators must practice the art of critical thinking in ways that abandon the expectation of homogeneity and move towards a genuine celebration of epistemological difference and heteronomy. To contribute to our diverse knowledge systems a responsible approach to critical thinking should actively reach out to include learners with all traditions such as feminist, indigenous, scientific, cultural, moral, or religious. This is necessary because all people are embedded in traditions and as such can learn from one another, and critical thinking itself is the result of cultural situatedness. Consequently, traditions themselves will and should play a significant and natural role in the development and application of critical thinking (Pithers & Soden, 2000).

Although traditions can never serve as a substitute for truth, “the authority of a tradition should always be directed to the point which people see for themselves that something is true or not” (Newbigin, 1989, p. 48, cited in Fernhout, 1997, 91). Embracing traditions through critical thinking does not mean “embracing conservatism or a retreat from progressive education”, rather a hospitable education reflects conservative and progressive traditions – a synthesis of the two (Wineberg, 2008, p.100).

## CONCLUSION

Critical thinking is practiced alongside learners and not *on* learners. It entails an insider’s perspective which requires relationship, community and hospitality (Portelli, 2001). The purpose is to develop knowledge and understanding, and to advance an insiders’ perspective about the traditions that shape an individual’s learning and values about life. Bernard of Clairvaux offers a view of critical thinking and learning that welcomes an insider’s perspective by a focus on what Others help us see; a humility practiced which “is a virtue by which a man [sic] recognizes his own unworthiness because he really knows himself” (1987, p. 103). This requires learning from and about the Other. Critical thinkers should reflect this openness to other ways of knowing rather than the view that individuals who hold to non-scientific traditions have never examined their assumptions (see Widdowson, 2010). Under a more expansive conception of critical thinking learners embrace the idea of “learners forming a *critical identity* and having a *point of view* that derives from adopting a concern for specific values” (Vaidya, 2013, p. 553).

A person can still be a critical thinker and accept non-scientific ways of pursuing knowledge and truth. An inclusive critical thinking model must honor the diversity of other knowledge systems since the scientific-pragmatic model of critical thinking while important is not the only valid epistemological approach. Knowledge can be increased by quantitative and qualitative means. A broader practice of critical thinking can be advantageous for learners to understand the subjective and objective reasons people hold to their traditions for making sense of motives and perceptions. Sensitivity to these ideas can facilitate a deeper and more profound practice of critical thinking for both teachers and learners (Pithers & Soden, 2000).

A critical thinker is transformed as someone with the freedom to “consider seriously other points of view than one’s own” (Ennis, 1979, p. 5-6). Such a comprehensive education would encourage critical thinking and open-mindedness by drawing on the epistemological perspective of another (Valk, 2007). This is not easy but openness to others ways of thinking is a virtue that any individual or community must practice (Gardner, 1993). It will always be the case that “reasonable people differ on basic matters of the ultimate good; some of their starting points are religious, some philosophical” (Nussbaum, 2002, p. 516–17).

In the end, if educators desire their students to be well-informed, they must demonstrate a “respect for and willingness to entertain diverse viewpoints” (Lai, 2011, p.42). They must in the end, not “smash down old ways of thinking”, but unite, include and promote the importance of epistemological humility and difference so that teachers and students are educated, sensitive and able to work through the rich diversity of ideas, values and perspectives that inhabit the classroom.

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