# Definitions of Critical Thinking in Context

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## Abstract

With the impact of increasing global competition, calls for greater emphasis on critical thinking in secondary and higher education are frequently heard in Japan, yet there is a lack of agreement on what is meant by the term "critical thinking." This paper provides a review of selected literature, charting the chronological development of definitions of critical thinking in education during the twentieth century, and reflections on the application of critical thinking to different contexts. Whereas critical thinking is often conflated with logic in Japanese discourse, this review shows that, outside of Japan, definitions of critical thinking have progressively moved away from logic to focus on a core of teachable skills. Although general consensus among academics has resulted in a widely accepted definition of critical thinking since the 1990s, this paper suggests that critical thinking needs to be adapted to the specific needs of students in different educational contexts through the personal and working definitions of individual educators. These educational contexts are defined in disciplinary, social, and cultural terms. It is hoped that this synthesis of the literature might help educators in Japan and elsewhere to identify both a universal core of critical thinking skills and insights on adapting these skills, so that they can develop a personal definition that suits their own teaching situation.

Keywords: *Critical Thinking, Internationalization of Education, Japanese Higher Education*

The fostering of critical thinking is seen as a key component of secondary and higher education, as many countries face the challenges posed by globalization in the 21st century. A perceived lack of critical thinking is often highlighted as a deficiency among students who are products of the Japanese education system, and the promotion of critical thinking in high schools and universities is a frequently cited goal for Japanese education reform in the press, as well as in statements from the Ministry of Education (MEXT 2008). However, while it has become something of a buzzword around deficiencies in Japanese education, the meaning behind the use of the term is often unclear, and there is little evidence of any systematic implementation into curricula, or guidance offered by those who espouse its cruciality, as to how this could be achieved. If the significance of critical thinking in a Japanese educational context is to be more than symbolic, and it is to emerge as an outcome of Japanese educational systems of the future, educators and those with an interest in education need to be able to conceive of it concretely, in order to promote it more actively.

Provided here is a selective literary review of English language academic work, showing how definitions of critical thinking have been developed by educators during the twentieth century, followed by some reflections on the importance of adapting critical thinking to different social, cultural and academic contexts. The aim is to provide an overview of discussion around critical thinking, and then look at the implications for adaption to a Japanese setting. Although critical thinking is often conflated with logic in Japanese discourse, this chronology shows that definitions of critical thinking outside of Japan have progressively moved away from logic in order to focus on specific, teachable skills. While a consensus was reached in the 1990s on a definition of critical thinking that focuses on such a core set of skills, it is argued here that it is vital for educators to adapt and redefine critical thinking for their own teaching circumstances, and for renewed debate about the meaning critical thinking is given in the Japanese context.

## 1- Origins of critical thinking discourse in education

The origins of critical thinking have been traced through the history of critical thought in western philosophy; with roots in Socratic questioning, later reflected in the writings of enlightenment philosophers such as Descartes, Hobbes, Locke and Kant (Paul, Elder, & Bartell, 1997, pp.8-10). However, the concept emerged and gained currency as a term discussed in the field of education in the twentieth century, particularly in the United States, stemming from what John Dewey called 'reflective thinking':

> Active, Persistent, and careful consideration of a belief or supposed form of knowledge in light of the grounds which support it and the further conclusions to which it tends. (Dewey, 1933, p.9)

In the 1940's, another American educator, Edward M. Glaser, was to develop this into an early definition of 'critical thinking' in the field of education:

> The ability to think critically ... involves three things: (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences, (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those methods. (1941, pp.5-6)

According to this, critical thinking is essentially the application of logic to problems or topics. Yet this definition offers little clue as to how critical thinking is to be developed. To have an "attitude of being disposed" suggests that critical thinking is a habitual character trait, rather than something that can be learned, while the use of the word "skillful" offers little indication as to the specific skills to be used, or how one goes about acquiring them.

## 2- The 1980's critical thinking debates.

Logic is central to Glaser's definition. However, since the 1980's, there has been a great deal of educational interest in critical thinking, sparked by a perceived crisis in high school education in the United States, and reform initiatives taken as a response to this (Dinkelman, 1990). As critical thinking emerged as a key concept, for example, fostered at the state level through teacher training programs such as that in in California (Paul, Elder, & Bartell, 1997) discourse moved beyond deductive reasoning, to include several other aspects as well. Robert Ennis' definition of: "rational, reflective thinking focused on deciding what to do or believe" (Ennis, 1987), emphasizes critical thinking as a practical life skill that underlies all decision-making and beliefs. This definition also views the ability to reflect on one's own thinking, evaluating and re-evaluating the strengths and weaknesses of personal beliefs, to be as much a part of critical thinking as reason.

McPeck (1981) goes as far as to downplay the importance of logic, stating that it has a "comparatively minor role- particularly when compared with knowledge of, and experience in a specific field" (p.8). For McPeck, thinking is always thinking about something: it is directed, and as such, critical thinking cannot be studied as an isolated skill or separated from learning subject content. Highlighted by the adverbial usage (to think *critically* about X) it always needs to be taught within a context as a way of doing something else, rather than something that is simply done (pp. 3-5). Thus, McPeck's definition is in opposition to Ennis' view of critical thinking as something to be taught as a practical life skill guiding all decision-making, and he defines critical thinking as:

> The appropriate use of *reflective skepticism* within the problem area under consideration ... knowing how and when to apply this reflective skepticism effectively requires, among other things, knowing something about the field in question. (McPeck, 1981, p.7)

The emphasis on skepticism in McPeck's definition has come under fire for giving critical thinking a negative connotation (Ennis, 1993, p.180), though McPeck stresses through the use of the word 'appropriate', that this skepticism should be used judiciously and directed, rather than simply used to question everything. His use of 'reflective' suggests that it is also self-monitored, and that the aim is not to be negative but to consider alternatives and advance a discussion. Indeed, both Ennis and McPeck's definitions consider self-reflection to be an essential element of critical thinking; something not present in Glaser's early definition.

However, through the disagreement between these two definitions, an important question about critical thinking is raised; namely whether it is a broadly applicable life skill, or dependent on expertise in a specific field. This has implications for the teaching and testing of critical thinking. While both would agree that critical thinking is something that can be taught, the former definition would suggest that it is teachable as a discipline in its own right, and can be measured as such. On the other hand, for McPeck, knowledge is a pre-requisite for being able to think critically, meaning that it needs to be taught or assessed as a part of other subject content. As shall be seen, it is Ennis's implication that has come to be

reflected in later definitions.

### 3- Consensus definition emerges in the 1990's

However, a problem with both Ennis and McPeck's definitions, and those of their contemporaries (Lipman, 1988; Siegel, 1988) is that while they have helped to develop a theoretical understanding of critical thinking, they do little to answer the question of 'how': to suggest a practical means of teaching it. As interest in critical thinking grew in the US in the 1990's, and a self-proclaimed critical thinking 'movement' developed, the definition has became more concerned with developing criteria for classroom practice, and describing a broad range of interconnected skills:

> Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/ or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning or communication as a guide to belief and action (Paul & Scriven, 2003)

This has perhaps gained the greatest acceptance as a current and standard definition, and it is the definition recognized and disseminated by the National Council for Excellence in Critical Thinking, an extension of the Foundation for Critical Thinking in the United States. This definition is corroborated by, and to some extent based on that generated by "the Delphi Report" (Facione, 1990a), which gathered the consensus of forty-six professors adjudged to be experts, whose definition has a focus on what is essentially the same core of skills.

By viewing critical thinking as a 'guide to belief and action', Paul and Scriven's definition follows on from Ennis in suggesting that it is a generally applicable life skill and therefore worth studying as a subject in its own right. Reasoning, rather than being at the core, has been placed alongside stimuli like observation, or communication as a source of information; an activating spark for the five core processes: conceptualizing, applying, analyzing, synthesizing and evaluating. It is these processes that are the core of critical thinking: they are filters guiding actions or beliefs, and the use of these filters is something that can be trained and improved. Figure 1 is an attempt to illustrate the complex interactions that this definition describes:

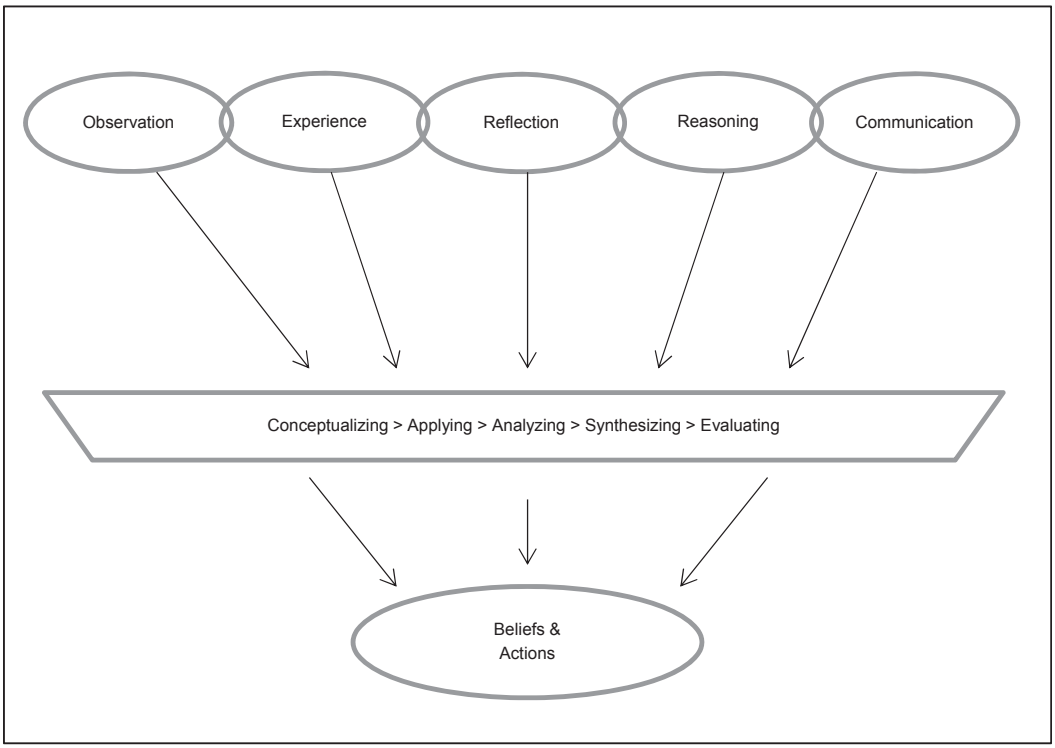


**Figure 1 : Visualization of Paul & Scriven's definition of Critical Thinking (2003)**

This visualization highlights the fact that critical thinking contains many processes that can interact in complex and numerous ways. In addition to the vertical filtering process described in the last paragraph, observation, experience, reflection, reasoning, and communication can also affect one another on a parallel axis. The five core skills that act as a filter for these stimuli develop out of one another: application of a concept, analysis of the application, synthesis of the insights generated by analysis, and final evaluation. They could also be used individually or in another order.

Thus, whereas previous definitions suggested critical thinking to be a single, complete process, this definition proposes an ongoing process, with a number of possible interactions, and indeed it would be impossible for all of these to be taking place simultaneously. Furthermore, the ways in which a student can think critically are far more varied than was possible within the limitations of previous definitions. They could be engaging with a problem critically by silently observing through listening, and synthesizing with their own beliefs, or communicating their own concept of the problem based on their own experience; rather than just following a taught pattern of logic in exercises, or analyzing the reasoning in an article.

Another key aspect of this definition, implied by the term 'intellectually disciplined' and the word 'actively', is that the critical thinker has learned to have a metacognitive grasp of these processes, and they are used in a way that is both autonomous and habitual. The inclusion of the word 'reflective' in the earlier definitions provided by Ennis and McPeck has been developed, so that an essential part of critical thinking 'in the strong sense' (as Paul distinguishes it), is thinking about one's own thinking.

## 4- Back to the question of subject-specific knowledge.

This definition, therefore gives a holistic view of the multiple processes involved, focused upon five core skills to be developed. However, Paul and Scriven follow it with the statement that: "it is based on universal values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth breadth and fairness" (2003). In whatever field critical thinking is applied, the evaluation, analysis, or conception, need to adhere to these intellectual standards. This aspect of Paul's definition has come in for criticism, for confusing intellectual virtues with moral ones (Wilson-Mulnix, 2010, p.466). This is a matter of interpretation of the use of terms such as 'fairness' or 'universal values'.

Yet even without regard to this, a further problem here is that the argument must be returned to McPeck's point about subject-specific knowledge: ability to apply these intellectual standards is surely dependent on familiarity with the topic in question: a scholar studying Japanese education for example, may be a good judge of the fairness, breadth and relevance of reasons and evidence given in a discussion on their field, but be out of their depth in considering issues surrounding a different world region or subject area. Yet the proponents of the critical thinking movement, following in the vein of Ennis' view of critical thinking as a broadly applicable life skill, assert that "as one learns to think critically, one is better able to master content in diverse disciplines" or that "in principle, all students can be taught so that they learn how to bring the basic tools of disciplined reasoning into every subject they study" (Paul, Elder, & Bartell, 1997, p.3, p.11).

While it may be the case that students can transfer these skills relative to the closeness of two disciplines or the breadth of their knowledge, it does not follow that practice in applying these skills to one discipline leads to the ability to perform them in another *per se*. In effect, this view portrays a kind of 'renaissance thinker' that can become a master of any discipline with ease, by applying their critical thinking skills. Yet realistically this is unattainable as an educational goal, in most of the contexts where critical thinking is discussed. Furthermore, if the critical thinker is someone who reflects on their own thinking, distinguishing facts from assumptions, then they must also be able to recognize the limits of their own knowledge of a subject, and when more knowledge is needed in order to form a judgment.

Charting the chronological development of a definition of critical thinking that educators agree on, it has been shown that the definition has moved beyond a focus on logic, to a core of teachable skills: conceptualizing, applying, analyzing, synthesizing and evaluating. These skills act as a filter of information, in order to guide beliefs and actions. Paul and Scriven's definition of critical thinking has gained wide acceptance, and in marginalizing the importance of logic in relation to a core of component skills, provides a definition that is more informative of approaches to teaching critical thinking. However, it is important to note that domain-specific knowledge is also essential for critical thinking skills to be practiced and developed, for while: "critical thinking skills transcend, in significant ways, specific subjects or disciplines, learning and applying these skills in many contexts requires domain specific knowledge" (Facione, 1990b, 10).

In other words, the core skills of critical thinking are universal, but the way in which they are applied

depends heavily on the context and the learner's knowledge of it. Yet the meaning of context here does not need to be limited to academic disciplines. From the learner's perspective, familiarity with the *social context* of the learning environment, has a significant affect on their ability to think critically about what they are learning, in terms of how their experiences differ from those of the other people in a classroom, and how communication takes place between them. Related to this, *cultural context* also affects the learner's ability to engage critically with his or her own learning, particularly in internationalized educational settings, or when the content being studied is related to global issues. Moreover, if adapting to apply critical thinking to the context is important for the learner, it follows that it is equally, if not more important for the educator to reflect on the best way to fit the core skills of critical thinking into the disciplinary, social, and cultural context of their own classes.

## 5- Adapting Critical Thinking to Context

The importance of context to a teacher's conception of critical thinking, can be seen in the fact that despite the development of broadly accepted definitions, educators and practitioners often feel the need to develop a personal or working definition that applies to their particular situation. The validity and importance of these has been highlighted by a study, which surveyed a variety of educators for their personal definitions in interviews (Esterle & Clurman, 1993). It has been commented that "there are as many definitions of critical thinking as there are writers on the subject" (Mayfield, 2001, p.4), and this is most likely because the differing teaching experiences of individual practitioners have nuanced their interpretation. How then, can teachers develop a personal definition of critical thinking that informs and guides their teaching practices?

Depending on the context of their academic discipline, different aspects of critical thinking may be marginalized or emphasized. An instructor of a course in environmental technology stresses that a critical thinker "makes comparative judgments from data ... analyses data for accuracy ... recognizes and corrects discrepancies". However, to a media studies instructor it is important that students "are willing to examine beliefs, assumptions, and opinions and weigh them against facts". In the field of science, "critical thinkers need an active imagination ... need to be able to detect, describe/report and use relationships between phenomena ... must be willing to submit their ideas and experiments to peer review" (Petress, 2004, p.4-6). These definitions reflect the specific needs of the tasks carried out by future data analysts, journalists and scientific researchers. Interestingly, creativity, in terms of the ability to generate new concepts and hypotheses tends to be given the most emphasis in the science and engineering fields, and in certain textbooks, critical and creative thinking are seen as two sides of the same coin (Fogler, 2014). As can be seen, while there are certainly universal traits to critical thinking between disciplines and common threads in all of the above working definitions, it is clear that the subject matter and context of each necessitate different aspects of critical thinking to be accentuated. Educators need to carefully consider the aspects they accentuate, and wish to accentuate in their personal definitions of critical thinking.

Cultural factors are also important to consider. It has been remarked that western educators in Japan "have the responsibility to resist evaluating Asian students through the lens of Western expectations"

(Long, 2003, p.232), yet as has been seen, critical thinking discourse has almost exclusively developed out of the United States. In the aforementioned Delphi report, all forty-six of the experts that were gathered to develop a definition of critical thinking were either American, or affiliated to American universities (Facione, 1990a, pp.18-19). Yet critical thinking is seen as increasingly vital in many other countries around the world as they respond to the challenges and opportunities of globalization.

How does this predominantly American discourse adapt to a Japanese cultural context? The common perception of Japanese students lacking in critical thinking skills, probably stems from a Western characterization of Japanese and other Asians as being poor at expressing their opinions (Long, p.231), a characterization that Japanese themselves are all too often inclined to accept themselves. Rhetoric, and the ability to construct and communicate convincing, arguments is perhaps valued over other critical thinking skills in American culture, more so than listening and observing attentively, hesitating to jump to conclusions, and accepting various points of view, which could be construed as traits of Japanese culture that show aspects of critical thinking. How then, can educators account for these cultural biases inherent in their teaching situations, and which aspects should be accentuated to provide benefit and value to students? On the one hand, those aspects of critical thinking that exist in their own culture can be emphasized, to show that critical thinking is universal, rather than an imported, foreign concept. There are those who have called for an Asian conceptualization of critical thinking, which can in turn broaden global understanding (Yoneyama, 2012) Yet it could also be argued that in educational settings that are increasingly internationalized, reflecting the complex diversity and competitiveness in the classroom, and in the world that students face outside of it, those 'foreign' aspects of critical thinking also need to be a part of the conception. As critical thinking has already become something of a tool for internationalization in Japan, the question of the extent to which it needs to be adapted, the degree to which Japan conversely may need to adapt in order be empowered by it is a pertinent one.

**References**

Dewey, J. (1933). How we Think, a Restatement of the Relation of Reflective Thinking to the Educative Process. Boston: D.C. Heath and Co.

Dinkelman, T.D. (1990). Critical Thinking and Educational Reform in the 1980's. *Illinois Schools Journal,* 69:2, 5-14.

Ennis, R. H. (1987). A Conception of Critical Thinking – with some Curriculum Suggestions. *APA Newsletter on Teaching Philosophy,* Summer. pp.1-5.

Ennis, R. H. (1993) Critical Thinking Assessment. *Theory into Practice*, *32*, 179-186.

Esterle, J., Clurman D. (1993). Conversations with Critical Thinkers. San Francisco: Whitman Institute.

Facione, P. A. (1990a). Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction: 'The Delphi Report'. California: California Academic Press.

Facione, P. A. (1990b). The disposition toward critical thinking: Its character, measurement, and relation to critical thinking skill. *Informal Logic,* 1(20), p.61-84.

Fogler, H. S. (2014). Strategies for Creative Problem Solving (Third ed.). Upper Saddle River, NJ: Prentice Hall.

Glaser, E. M. (1941). An Experiment in the Development of Critical Thinking. Teacher's College, Columbia University.

Lipman, Matthew. (1988). Critical Thinking- What Can It Be? In L.S. Behar- Horenstein & A.C.Ornstein (Eds.), Contemporary Issues in Curriculum (pp. 145-153). Boston: Allyn and Bacon.

Long, C.J. (2003) Teaching Critical Thinking in Asian EFL Contexts: Theoretical Issues and Practical

Applications. Proceedings of the 8th conference of Pan-Pacific Association of Applied Linguistics.
Mayfield, M. (2001). Thinking for Yourself: Developing Critical Thinking Skills through Reading and Writing (5th ed.). United States. Thomas Learning.
McPeck, J. E. (1981). Critical Thinking and Education. New York: St. Martin's Press.
MEXT (Japan Ministry of Education, Culture, Sports, Science and Technology), 2008. 'Chuo kyoiku shingikai toshin 2008' [Deliberations of the Central Council for Education]. Available at: http://www.mext.go.jp/a_menu/shotou/new-cs/news/20080117.pdf [Accessed October 30, 2014].
Mulnix, J. W. Thinking Critically About Critical Thinking. *Educational Philosophy and Theory, 44,* 464-479.
Paul, R. W., Elder, L., & Bartell, T. (1997). California Teacher Preparation for Instruction in Critical Thinking: Research Findings and Policy Recommendations. Sacramento, Calif.: Commission on Teacher Credentialing, State of California.
Paul, R. and Scriven, M. (2003). Defining Critical Thinking. The Critical Thinking Community. [Online]. Available at: http://www.criticalthinking.org/pages/defining-critical-thinking/410 [Accessed: 5 August 2014].
Petress, K. (2004) Critical Thinking: An Extended Definition. *Education, 124,* 461-7. Available at: http://isites.harvard.edu/fs/docs/icb.topic265890.files/Critical_Thinking_File/06_CT_Extend ed_Definition.pdf [Accessed: 25 June 2014].
Siegel, H. (1988). Educating Reason: Rationality, Critical Thinking, and Education. New York:Routledge.
Yoneyama, S., (2012). Critiquing critical thinking: Asia's contribution towards sociological conceptualization. In X. Song & K. Cadman, eds. *Bridging Transcultural Divides: Asian Languages and Cultures in Global Higher Education*. Adelaide: University of Adelaide Press.