



Nurturing critical thinking for implementation beyond the classroom: Implications from social psychological theories of behavior change

Yekyung Lisa Lee

Sogang University, J hall 717, 35 Baekbeom-ro, Mapo-gu, Seoul 04107, Republic of Korea

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ABSTRACT

Critical thinking is a higher order mental function influenced by social factors and performed within a social context. The aim of this paper is to suggest guidelines for critical thinking education on the grounds of social psychological theories of behavior change. Based on reviews of literature on the Reasoned Action Approach (Fishbein & Ajzen, 2011), and Social Cognitive Theory (Bandura, 1986), this paper suggests that educators should direct learners' attention to concrete and good models of critical thinking as well as their positive consequences through various sources. Guiding learners to be mindful about social pressures and their own personal biases that inhibit critical thinking should also facilitate critical thinking in actual circumstances.

1. Introduction

Critical thinking (CT) refers to the ability and will to be open-minded to ideas regardless of one's beliefs, and engage in reflective, balanced thinking (Ennis, 1993). It is essential not only for academic studies but also for solving social, political, and ethical problems as well (Abrami et al., 2008; Paul, 1995). Developing critical thinking abilities has been an important educational goal for nurturing intelligent, reasonable humans (Facione, 1990; Halpern, 1999; Paul, 1995) and even sustaining democracy (Dewey, 1993). The functional value of CT in our society implies that critical thinking is a holistic and composite ability including not only skills and dispositions, but also one's actions as well (Davies, 2015).

Educators and researchers have demonstrated the effectiveness of various instructional methods for nurturing CT (Browne & Freeman, 2000; Yang, Newby, & Bill, 2008). However, a crucial point that previous CT education research seem to have neglected is that CT is a higher order mental function influenced by social factors and performed within social contexts which make the transfer of CT skills learned in classrooms to real life situations to be quite a challenge (Halpern, 1999; Sternberg, 1985). Despite the social nature of CT, classroom teaching of CT mostly confines the social context of CT to interactions within the boundaries of the classroom. For example, facilitating offline/online interactions among students through discussions and collaborative work is a narrow interpretation of social interaction as it only targets the increase of CT abilities directly involved with the learning task. Research on creating CT learning experiences that prepare learners for the complexities in society are hard to find.

Such being the case, this paper will recognize critical thinking as a socially embedded action, and explore effective CT education methods which incorporate this aspect. Specifically, socio psychological theories of behavior change emphasizing environmental influences that inhibit or stimulate our behaviors should be useful for this purpose. The point of adopting this approach is to overcome the limitations of existing methods which assume the smooth transfer of classroom learning to life, even when that transition turns out to be difficult due to the social nature of our behaviors. By assuming the definition of critical thinking to include

E-mail address: yk.lisa.lee@gmail.com.

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‘action’ (Davies, 2015) carried out in our social environment, and by adopting the implications from behavior change theories, this paper aims to identify educational methods accommodating the complexities of performing actions reflecting CT in real life. In particular, this paper will focus on the two most highly applied theories in behavior change studies which are most applicable to education: Theory of planned behavior (Ajzen, 1991), and social cognitive theory (Bandura, 1986). After reviewing the meaning of CT, its educational practices, and the main ideas of both behavior change theories, their implications for CT education will be discussed.

2. Critical thinking: its meaning, educational methods, and challenges

Critical thinking has been mostly defined as a combination of skills and dispositions. As a skill, CT is “self-directed, self-disciplined, self-monitored, and self-corrective thinking” (Scriven & Paul, 2008, para 2). It is also the analysis and evaluation of arguments/claims in a reasonable/inquisitive/open-minded manner (Ennis, 1993; Facione, 1990, Halpern, 1999). A disposition oriented view defines CT as the inclination to think in an open and fair-minded way (Ennis, 1993; Facione, 1990), the attitude to explore various perspectives (Facione, 1990), and the propensity to make reasonable judgments (Ennis, 1993; Paul, 1995). Siegel (1988) provided a definition of CT integrating both aspects by stating CT as “thinking appropriately moved by reasons” (p. 23). Davies (2015) developed the idea of CT by stating that CT is more than mental processes (e.g., rational decision making), and should involve actions of the critical thinker. Davies used the term *criticality* to describe critical thinking as a trait which encompasses *thinking*, *reflecting*, and *acting* according to the aforementioned skills and dispositions. Thus, criticality is not a competency existing only in the mentality of the individual, but is a way of life that should be comprehended from a socio-cultural perspective.

Philosophically oriented definitions of CT provide a valid criteria and framework for understanding the nature of CT. Nonetheless, in order to develop effective interventions for nurturing CT, it is necessary to understand CT in light of its cognitive mechanisms as well. Research on rational decision making shed light on the cognitive mechanisms of CT. According to scholars such as Evans (2008), there are two types of thinking: Type 1 (unconscious, automatic), and type 2 (conscious, intentional) thinking. CT is considered as type 2 thinking, while biased thinking is considered to be type 1. Biased thinking, the lack of balanced, reasonable, critical thinking, is automatic, and difficult to correct even under conscious awareness. One way of looking at the difficulties with using critical thinking behaviors in many aspects of life is that regulating type 1 thinking by type 2 does not come easily, nor can instruction guarantee its behavior (Lilienfeld, Ammirati, & Landfield, 2009).

Educational methods for nurturing critical thinking mostly fall into the following categories (Lee, 2012): Discussions (argumentation, debate, etc.), questioning, problem solving, experiencing cognitive dissonance, and role playing. Discussions are carried out to stimulate critical thinking by exposing learners to different opinions in the process of clarifying or validating their ideas (Garside, 1996). An interactive environment filled with discussions among peers and parents have also been shown to increase critical thinking abilities (Murphy, Rowe, Ramani, & Silverman, 2014). Questioning methods are used to help learners recognize their ignorance in the face of questions about their beliefs (King, 1995). Educators can create cognitive dissonance presenting opposite beliefs to the learner with the aim of stimulating evaluative thinking (Browne & Freeman, 2000). Role playing enables learners to enact authentic situations so that they can view an issue from others’ perspectives and engage in deep reflection. Problem based learning usually requires analysis of the problem, evaluation of the quality of evidence, and debates that increase argumentation skills, which have been shown to increase CT competence (Byrnes & Dunbar, 2014).

Despite positive results of CT strategies used in previous research, and the constant effort of educators to nurture CT, the difficulties of engaging in CT in our everyday lives has been pointed out through various sources (Halpern, 1999; Lee, 2012; Sternberg, 1985). There are even studies indicating that popular CT education methods such as argumentation, debates, and presenting opposite evidence may even fortify personal biases detrimental to CT (Lilienfeld et al., 2009). The reason why strategies for CT instruction actually stimulate uncritical thinking could be that they focus on the ‘process’ of the instructional methods and the performance of students without due consideration of socio psychological factors influencing critical thinking. In other words, existing methods tend to fall short of incorporating the complex nature of human behaviors involved in critical thinking, especially in socially authentic contexts (Lee, 2012).

3. Theories of behavior change

With the exception of social cognitive theory (Bandura, 1986) which will be discussed later, models and methods for inducing behavior change have been studied mostly in non-educational areas such as physical health (e.g., AIDS prevention, weight control), and marketing (e.g., purchasing behaviors of consumers). Although one might contest the use of theories rarely applied in education, similarities between behaviors studied in theories of behavior change and critical thinking behaviors exist as such: 1) in both cases our actions are not just the result of who we are and what we know, but also the consequences of the environment that inhibits or stimulates our behaviors, 2) the individual will have to make a choice regarding whether one will carry out the activity or not, and 3) both require the involvement of the whole person emotionally and intellectually, as well as knowledge and skills. On the basis of these similarities it would be worthwhile to identify the characteristics and implications of theories of behavior change relevant to educational research. The following section will discuss two major theories of behavior change, the Reasoned Action Approach (RAA), and Social Cognition Theory¹ (SCT).

¹ Other theories include Protection Motivation Theory (PMT), Theory or Reasoned Action (TRA), Theory of Planned Behavior (TPB), Health Belief Model (HBM),

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