CRITICAL THINKING IN CAREER EDUCATION: THE DEMOCRATIC IMPORTANCE OF FOUNDATIONAL RATIONALITY

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ABSTRACT

This article illustrates how the generic employability skills approach to critical thinking suffers from serious conceptual and epistemological difficulties that impact deleteriously on both its practical effectiveness and democratic appropriateness. Unlike technical skills, employability skills, in this case cognitive capacities such as critical thinking and problem solving, are traditionally presented as not job specific, and are intended to remain broadly applicable across a variety of occupations and professions. The emphasis that career education places on technical rationality in critical thinking violates principles of democratic learning by disregarding the historical context of vocational experience. Within career education, critical thinking conceived as technical rationality refers to means/end reasoning that pursues human capital and business objectives with the maximum possible effectiveness. This article proposes that a more effective, politically empowering, and epistemically coherent approach to critical thinking promotes student understanding of the various forces shaping contemporary vocational experience. Finally, this article proposes a revised critical thinking construct based on foundational rationality to remedy these problems, and offers examples of concrete classroom strategies, such as praxis, problem-posing education and collaborative learning, that protect democratic learning in career education programs.

INTRODUCTION

Consistent with the human capital requirements of economic globalization, many secondary level career education programs are designed with the intention of preparing students for the formidable challenges, such as employment instability, marking

contemporary vocational experience (Hyslop-Margison & Graham, 2003; Spring, 1998). The majority of these programs advocate teaching students transferable, or generic, critical thinking and problem solving "skills" that are intended to address the occupational instability marking current labor market conditions (Kerka, 1993). In the present labor market, job security is largely an anachronism, and the promise of transferable employability skills entails obvious practical benefits. Unfortunately, there are significant pedagogical problems with the construct of critical thinking commonly found within many career education programs. In this article, we identify the pedagogical and democratic shortcomings of present critical thinking practices within career education. We propose an alternative critical thinking construct for career education based on *foundational rationality.* Critical thinking that respects foundational rationality encourages students to explore the historical context of contemporary vocational experience, and promotes the fundamental principles of democratic learning.

We begin the article by illustrating how the generic employability skill approach to critical thinking suffers from serious conceptual and epistemological difficulties that impact deleteriously on both its practical effectiveness and democratic appropriateness. We then argue that the emphasis career education places on technical rationality in critical thinking violates principles of democratic learning (Hyslop-Margison & Graham, 2003) by disregarding the historical context of vocational experience. In the final section of the article, we propose a revised critical thinking construct based on foundational rationality to remedy these problems, and offer examples of concrete classroom strategies that protect democratic learning in career education programs.

Conceptual Problems with Critical Thinking in Career Education

Secondary level career education, based largely on human capital assumptions, generally categorizes critical thinking and problem solving as transferable employability skills (British Columbia Ministry of Education, Skills and Training, 1998; Conference Board of Canada, 1992; Johns Hopkins University, 2003; New Jersey Department of Education, 2001). Unlike technical skills, employability skills - in this case, cognitive capacities such as critical thinking and problem solving - are presented as not job specific, but are intended to remain broadly applicable across a variety of occupations or professions (Buck & Barrick, 1987). The idea of critical thinking and problem solving as transferable employability skills understandably appeals to many career education stakeholders. Transferable employability skills, at least in theory, prepare human capital for a labor market where many workers are forced to change occupations several times during their vocational lives (Crouch, Finegold & Sako, 1999). However, as we shall argue below, the belief that critical thinking is a transferable, or generic, employability skill confronts insurmountable conceptual and epistemological difficulties.

Many scholars investigating critical thinking have enumerated the epistemic problems with the generic skill approach (Barrow, 1987; Bailin, Case, Coombs & Daniels; Hyslop-Margison & Graham, 2003). Critical thinking in career education is typically characterized as a set of heuristics, or guiding principles, intended to provide workers with an effective problem solving strategy regardless of occupational context. The *New*

Jersey Core Curriculum Standards for Career Education and Consumer, Family, and Life Skills (New Jersey Department of Education, 2003), for example, proposes a four step heuristic model to equip students with problem solving skills for application in various occupational and life circumstances: a) recognize and define a problem; b) plan and follow steps to make choices and decisions; c) identify and access print and non-print resources that can be used to help solve problems; d) demonstrate brainstorming skills. British Columbia's secondary level *Business Education* (British Columbia Ministry of Education, Skills and Training, 1998) offers a similar, if somewhat more sophisticated, heuristic strategy referred to as the *designing model*: a) identify problem; b) determine parameters; c) conduct research; d) generate solutions; e) choose best solution; f) implement solution; g) test and evaluate; h) redesign and refine. Although advocates of this approach confidently extol the virtues of their particular model, heuristic strategies suffer serious epistemological shortcomings.

The epistemic limitations of critical thinking and problem solving heuristics are illustrated simply by considering different occupational contexts where these approaches might be applied. If an automobile refuses to start without any obvious indication why, the typical heuristic approach suggests identifying the problem. However, for an individual lacking significant knowledge about automobiles - including fuel, ignition, and electrical systems - pinpointing the specific cause of the mechanical failure is apt to prove extremely difficult. Even a youthful automotive technician trained in modern electronic ignition and fuel injection systems might be unable to isolate the problem in an older car equipped with a carburetor, points, and a distributor. Our general point here is simply that while heuristic strategies for critical thinking and problem solving offer procedural guidelines, they are practically worthless in the absence of sufficient background knowledge related to the specific applied context. This characteristic of heuristic approaches to critical thinking and problem solving raises serious questions regarding their actual transferability between occupational contexts.

Our current infatuation with heuristic strategies in career education is at least partially predicated on Dewey's (1933) writings that originally proposed a series of stages and principles to guide student reflection: a) perplexity, confusion, and doubt; b) conjectural anticipation and tentative interpretation; c) examination, inspection, exploration, analysis of all attainable considerations; d) elaboration of the tentative hypothesis suggestions; and e) deciding on a plan of action. However, Dewey also fully understood that procedural knowledge alone was insufficient to produce reflective thinkers, and advocated fostering dispositions in students such as open-mindedness, intellectual sincerity and responsibility, wholehearted interest, and a critical spirit of inquiry. Unfortunately, the heuristic strategies adopted by many career education programs fail to emphasize the fundamental role character qualities play in effective critical thinking and problem solving. Obviously, career education students will not think critically unless they acquire the necessary dispositions to do so.

When critical thinking and problem solving are categorized as transferable employability skills, another potential pedagogical problem rears its ugly head. The concept of a "skill" traditionally denotes some type of physical or technical expertise that is mastered through

repeated practice of the capacity in question (Barrow, 1987). Skilled surgeons spend many hours operating on cadavers to sharpen their surgical expertise and biological knowledge. Skilled airline pilots require considerable in-flight or simulator time to master aircraft controls and navigational guidance systems. This type of procedural or technical knowledge is categorically distinct, however, from the propositional knowledge required for critical thinking and problem solving. Critical thinking seeks determinations of truth, evaluates relevant evidence, and justifies arguments, all epistemic objectives that procedural knowledge and practice alone simply cannot achieve. Cognitive capacities such as critical thinking and problem solving depend on propositional knowledge and, contrary to the career education approach, they do not qualify as transferable skills mastered through generic practice. When teachers adopt the idea that critical thinking and problem solving are mastered through abstract practice, they are unintentionally misleading their students.

The most sophisticated constructs of critical thinking typically emphasize two essential elements (Siegel, 1999). First, thinking critically about any issue or problem requires considerable background knowledge about the subject under investigation, a point we have emphasized and illustrated above. It makes no pedagogical sense to encourage students to think critically about career options, for example, without relevant knowledge regarding labor market trends, working conditions, and remuneration packages. In fact, when students are asked to think critically without sufficient background knowledge, it may instead provoke ill-informed or rash judgments on extremely complex questions and problems (Case & Wright, 1999). Second, a successful critical thinker inevitably possesses certain dispositions, habits of mind, or intellectual virtues, such as open-mindedness, a commitment to truth, an acceptance of personal fallibility, and a willingness to entertain alternative perspectives and viewpoints (Hyslop-Margison, 2003). The dispositional component, an aspect of critical thinking that ironically does transfer between different contexts, is virtually ignored by the generic employability skills approach. An effective construct of critical thinking in career education will emphasize the importance of these two requirement areas (knowledge and dispositions), to students.

To summarize, when critical thinking and problem solving are depicted as transferable employability skills based on some heuristic strategy, their crucial epistemic and dispositional requirements are undermined. The conceptual error that terms critical thinking a “skill” fallaciously implies to career education practitioners and students that it can be practiced in the abstract for successful application in distinct occupational arenas. Although personal dispositions are necessary for critical thinking and transferable between occupational contexts, the relationship between character qualities and reflective thought remains generally unrecognized by career education programs. In the following section, we suggest that these problems pale in their potential classroom implications, however, when compared to the anti-democratic ideological messages students receive from the technical rationality emphasis of critical thinking constructs in career education.

TECHNICAL RATIONALITY AND CRITICAL THINKING

Although respecting student rationality is frequently defended in educational discourse, there is often little attention devoted to its various interpretations, and their respective pedagogical and political implications. Rationality most generally refers to the abstract employment of reason, but the application of reason may be either instrumental or foundational in its approach. Technical, or instrumental, rationality denotes a series of actions organized to achieve predetermined goals. In other words, if the predetermined objective is "x", technical rationality charts the various steps leading to the realization of "x". Within career education, for example, critical thinking conceived as technical rationality refers to means/end reasoning that pursues human capital and business objectives with the maximum possible efficiency. A critical thinking approach consistent with foundational rationality, on the other hand, is not restricted to enhancing practical efficiency within predetermined human capital education frameworks. Foundational rationality explores the entire social, economic, and political context of the vocational problem or issue under investigation. Unlike technical rationality, critical thinking that practices foundational rationality is not merely managerial expertise focused on achieving predetermined objectives, but evaluates objectives in light of possible alternatives, and respects the moral imperatives of a democratic society.

Critical thinking in career education is widely portrayed as a problem solving strategy to generate technical solutions within a naturalized market economy system. *Five Steps to Better Critical Thinking, Problem Solving, and Decision Making* (Guffey, 1996), a business resource created for teachers of career education, emphasizes the daily practical challenges that workers might expect to confront: "Some problems are big and unmistakable, such as the failure of an air freight delivery service to get packages to customers on time. Other problems may be continuing annoyances, such as regularly running out of toner for an office copy machine" (n.p.). *Business Education* (British Columbia Ministry of Education, Skills and Training, 1998) reflects a technical rationality focus more directly by suggesting that, "Critical thinking is an important aspect of all courses. Instruction should include opportunities for students to justify positions on issues and to apply economic and business principles to particular circumstances" (n.p.). The Iowa City Community School District (2003) *Career/Business Education* high school curriculum describes problem solving as "an employability skill required by employers" (n.p.) The Missouri Department of Elementary and Secondary Education's Division of Vocational and Adult Education (2003) suggests critical thinking skills help students "solve everyday, practical problems" (p. 1). These critical thinking constructs promote technical rationality by encouraging students to address problems from a limited perspective that ignores wider workplace, labor market, and socio-economic issues. When students are tacitly or openly discouraged from engaging the social and economic forces shaping contemporary vocational experience, their democratic right to participate in directing these forces is correspondingly undermined. Indeed, the moral imperatives of education within a democratic society require students to be provided with the necessary knowledge and dispositions to make informed choices about current working and labor market conditions, and entertain possible alternatives to improve these conditions.

Kincheloe, Slattery, and Steinberg (2000) recognize the problem with current critical thinking constructs by suggesting they limit student learning to "a modernist logic in which thinking is hyperrationalized and reduced to a set of micrological skills that promote a form of procedural knowledge" (p. 249). Critical thinking approaches in career education that advocate technical rationality view cognition "as taking place in a vacuum," (p. 249) and inappropriately disregard the various forces shaping contemporary vocational experience. Vocational preparation should not be taught in isolation from historical context because many of the occupational problems students confront emerge directly from social and economic conditions, and the political policies that create them.

The anti-democratic implications of technical rationality highlight the need to promote foundational rationality as the critical thinking model within career education. A critical thinking construct based on foundational rationality encourages in-depth student examination of economic globalization and international trade agreements, explores current labor market conditions, and considers how general working conditions might be transformed to improve the vocational experience of working Americans. Without addressing these various forces and considering means to mediate them, students are politically marginalized, and become workers merely responding to crises arising from the actions of others rather than critically engaged, participating citizens in a meaningful democratic society.

CRITICAL THINKING IN DEMOCRATIC CAREER EDUCATION

We have heretofore argued that current constructs of critical thinking and problem solving in career education are inadequate to meet the epistemic, dispositional, and democratic requirements of vocational preparation within American society. We believe a more effective, politically empowering, and epistemically coherent approach to critical thinking promotes student understanding of the various forces shaping contemporary vocational experience. This requires discussing with students issues such as globalization, neo-liberalism, international trade agreements, and the impact these agreements currently have on both American and foreign workers. It also involves an extensive examination of the role and obligations of business and industry in a democratic society, an open discussion of labor history, the organizing and bargaining rights of American and international workers, occupational experience, and the relationship between a sustainable economy, occupational experience, and the environment. More generally, foundational rationality is practiced in career education critical thinking when and only when students are provided with significant information about the entire socio-economic context of contemporary vocational experience.

The dispositional requirements of critical thinking in career education are inevitably linked with respecting the democratic right of students to participate in constructing the conditions that shape their working lives. This means distinguishing between natural and social reality (Searle, 1995), and helping learners appreciate that labor market and working conditions are formed through conscious human actions, and transformed in precisely the same manner. Critical thinking approaches in career education that practice foundational rationality portray students and workers as legitimate participants in a

democratic dialogue about economic, labor market, and working conditions. We also believe that encouraging the direct political participation, or *praxis*, of students as part of their critical thinking experience in career education helps develop the necessary dispositions required for participatory democratic citizenship.

Another effective career education teaching practice that respects foundational rationality is reflected in Freire's (1970) model of problem-posing education in which students construct personal understanding through successive stages of critical inquiry. Problem posing begins by exploring the present perspective of students, and gradually assisting them to become more informed and critical social participants. Career education students could begin by focusing on local employment losses and expand their inquiry by considering the present global economic practices provoking such suffering. Foundational rationality in career education would utilize problem posing techniques because they elucidate the connections between self and society, and enhance student understanding of how structural forces influence individual vocational experience. When applied to career education, problem posing might focus on the unequal power relations between workers and corporations, the substance and conditions of various collective bargaining agreements, social and labor market conditions, and the labor market treatment of underprivileged workers. Students could also investigate technology ownership, its general impact on employment, and question who profits or gets hurt by its development and implementation.

Collaborative learning represents a third career education practice that effectively promotes foundational rationality. This learning approach begins by examining the assumptions and beliefs held by students regarding various constructs, primarily social constructs, with the intent of bringing to the surface each student's knowledge, but eventually moving beyond individual knowledge. After establishing individual understanding, learners in a collaborative group begin to construct additional knowledge by considering how their collective experiences are shaped by social phenomena. Again, this learning approach provides an effective critical mechanism that illustrates to students their individual labor market difficulties are directly connected to global economic practices. This process of constructing new knowledge is consistent with democratic learning because it requires students to consider alternative viewpoints, knowledge and possibilities. It also promotes the communicative dialogue fundamental to democratic social experience.

The principal role of foundational rationality in career education is affording students the knowledge and perspectives that promote informed judgments and decision-making. For example, there are numerous ecological issues directly related to contemporary vocational experience that might be discussed during critical thinking activities. These include questioning whether the free market values of individualism and unconstrained consumerism can harmoniously exist with a respect for nature and sustainable development, or whether our present cultural values of unconstrained consumerism require significant readjustment. Smith and Williams (1999) suggest introducing students to employment alternatives that counter the dominant consumerism embodied within contemporary vocational opportunities. They suggest discussing with students

occupational choices that protect the natural environment over the long term rather than exploit it for temporary profit and short-term economic gain. Students might investigate occupations such as sustainable forestry, community-supported organic farming, environmental cleanup, and energy efficient building construction as alternative career choices sensitive to pressing environmental concerns.

Career education adopting a critical thinking approach based on foundational rationality pursues the following principles of inquiry:

1. Critical thinking that respects foundational rationality considers the social and economic context a legitimate unit of analysis;

2. Critical thinking that respects foundational rationality encourages the political engagement of students in shaping the conditions that determine their vocational lives;

3. Critical thinking that respects foundational rationality places career education and vocational experience in a historical context;

4. Critical thinking that respects foundational rationality provides students with alternative viewpoints on possible labor market and workplace structure;

5. Critical thinking that respects foundational rationality fosters critical dispositions among students by providing continuous opportunities for social, economic, labor market, and vocational critique.

CONCLUSION

Critical thinking in career education has the capacity to promote a more complete understanding among students of the various forces shaping contemporary vocational experience. When students develop such an understanding, and the necessary dispositions to transform that knowledge into practice, they are empowered as democratic citizens to influence the quality of their own occupational lives. Unfortunately, current models of critical thinking in career education are conceptually problematic, epistemologically incomplete, virtually ignore dispositions, and merely promote technical rationality aimed at improving human capital efficiency within difficult labor market and working conditions. The challenge for critically minded career education teachers, then, is expanding the unit of analysis to explore the social, economic, and political boundaries of contemporary working life.

Truly critical vocational educators are committed to pedagogical approaches that politically empower students in their personal working lives. A critical and liberating career education considers political participation and social justice, including the right to satisfying and financially rewarding employment, as fundamental democratic objectives. For critical thinking in career education to achieve its full pedagogical potential, it must encourage students to assume a far greater measure of decision-making power over the

policies influencing their occupational lives. This means challenging the human capital assumptions and corporate dominated education reform movements that reduce critical thinking to technical rationality and a transferable employability skill, and correspondingly preclude serious critique of morally questionable social, economic, and labor market practices. We suggest that critical thinking respecting foundational rationality can meet the pressing challenge of creating politically informed subjects in the democratic construction of vocational experience rather than mere objects of market economy efficiency.

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