INTERDISCIPLINARY TEACHER EDUCATION: WORLDWIDE IMPROVEMENT

KHOBRAGADE JYOTI WASUDEO

RESEARCH SCHOLAR, DEPT. OF EDUCATION
CMJ UNIVERSITY, SHILLONG, MEGHALAYA

ABSTRACT

The Global Age can be understood as an Age of Interdisciplinary, as complex global problems increasingly require interdisciplinary approaches. Interdisciplinary is a relatively nascent curricular approach yet one increasingly needed in the field of education. This study advocates postsecondary interdisciplinary teacher education reforms that effectively integrate discipline-based coursework with interdisciplinary courses to prepare future teachers to utilize interdisciplinary curricular approaches in P-12 education. It conceptualizes interdisciplinary teacher education based on a constructivist theoretical approach indebted primarily to State, and focuses especially on literature in the field of interdisciplinary studies, published in the India since 1997. The confluence of interdisciplinary and constructivist approaches, as well as interdisciplinary and disciplinarily are examined. Existing interdisciplinary teacher education programs, interdisciplinary teaching strategies, and curricular designs are explored. This study provides a conceptual model that addresses teacher professionalization, interdisciplinary vision, global consciousness and wide- awareness, and the democratic dimensions of interdisciplinary teacher education. It conceptualizes critical and sociocultural relevant education, learning communities, student-centered education, novice and non-specialist interdisciplinary inquiry, Deweyan cognitive disequilibrium, interdisciplinary research questions and questioning skills, interdisciplinary integration, and alternative academic structures and resources in interdisciplinary teacher education.

INTRODUCTION

Interdisciplinary has burgeoned worldwide at an unprecedented pace and scope during the Global and Information Ages, coinciding since the late twentieth century (Apostel, Berger, Briggs & Michaud, 1972; Beck & Kosnik, 2006; Lattuca, 2001; Pinar, Reynolds, Slattery, & Taubman, 2004). During this era, human beings have increasingly encountered and benefitted from interdisciplinary, so much so that the Global Age can be understood in part as a new or revalorized Age of Interdisciplinary. Increasingly, problems are gauged, solutions are discovered, and human expressions are manifest through interdisciplinary endeavor. There are many explanations for the particular phenomenon and timeliness of interdisciplinary in the Global Age. Miller and Boix Mansilla (2004) state In a world where most of the important dilemmas refuse to fit neatly into disciplinary boxes, fostering the capacity to synthesize knowledge from multiple perspectives, to capitalize on distributed

33

expertise, and adapt to changing disciplinary and professional landscapes becomes an essential aim in our efforts to prepare young professionals for effective participation in contemporary life.

Similarly, Davies and Devlin (2007) find, "Certain conceptual issues demand new perspectives to provide breakthroughs. These insights can certainly come from different disciplines" (p. 4). Interdisciplinarian Ronald Jones (n.d.) explains the need for interdisciplinarity, which he finds linked in this epoch to the "fundamental shift in western culture from an object-based to an information-based culture wherein information networks distribute knowledge and influence on a global scale". In the Global Age, it has become increasingly necessary to understand and act upon issues through the integration of multiple discipline-based forms of knowledge and experience, what The National Academies (2005) refer to as "deep knowledge from different perspectives" (p. 17). Removing disciplinary and academic barriers through interdisciplinary pursuit facilitates the development of the fluency and skills required to engage complex issues, to create conditions that enable flashes of understanding from one field to illuminate another, and to utilize and revalorize knowledge that draws upon expertise from and interface with more than one disciplinary perspective. Interdisciplinarity addresses dire twenty-first century social and environmental crises, including global warming, famine, terrorism, and pandemics, as well as diminishing food, environmental, and energy resources, for major contemporary problems are not disciplinarily, culturally, or geopolitically bound, and require interdisciplinary solutions. Former United Nations Secretary-General Kofi Annan (2003) states, "The challenges of our age are problems without passports; to address them we need blueprints without borders" (n.p.). The global issues and calamitous problems for which human beings are largely responsible have reached unprecedented levels of complexity. Interdisciplinary inquiry examines the problems and wonders of the world, cultivating creativity and inspiration that fires the human imagination, affirming meaningful connections between human existence and the world, and helping human beings transcend what divides us. It has become increasingly necessary to engage in interdisciplinary inquiry and problem solving, which extends knowledge beyondthe confines of traditional disciplinary approaches and ways of knowing, and affirms the value of the interminable forms of knowledge and understanding (Greene, 2001). As Klein (2002) states, "Interdisciplinarity.. .has become more important because the needs it serves, although varied and even conflicting, are pervasive" (p. 9). In the Global Age, interdisciplinary is implicated at every turn as an essential mode of research and education, a phenomenon that "has delivered much and promises more" (The National Academies, 2005,
p. 1) in terms of initiating critically important human understandings and undertakings that would otherwise be inaccessible or unachievable, yet upon which the survival of humanity depends.

CONCEPTUALIZING INTERDISCIPLINARY TEACHER EDUCATION

As this study maintains that there is a need for research in the field of interdisciplinary teacher education, it attempts to bridge the scholarship of interdisciplinary studies and teacher education and support efforts to conceptualize interdisciplinary teacher education. This is a study *on* and *of* interdisciplinarity that establishes common ground between the fields of teacher education and interdisciplinary studies as well as a conceptual framework for developing interdisciplinary teacher education programs. This study advocates, "interdisciplinary relationships formed for the purposes of teaching and learning" (Davies & Devlin, 2007, p. 4), and advances the claim that interdisciplinarity is helping to shape the academy in the Global Age (Humphreys, 2002). Interdisciplinarity "should not be peripheral to teacher education" (Klein, 2002, p. 201).

Educators should facilitate interdisciplinary research by providing educational and training opportunities for undergraduates, graduate students, and post-doctoral scholars, such as relating foundation courses, data gathering and analysis, and research activities to other fieldsof study and to society at large. (The National Academies, 2005, p. 5) Further, this study endorses cultivating interdisciplinary *pre-cultures* that prepare future educators to do transformative interdisciplinary work in P-12 education (Klein, 2002). It examines howteacher education can be enriched and expanded across interdisciplinary epistemologies, research paradigms, ideologies, and experiences (Sleeter, 1997, p. 2), focusing on issues of primary importance in conceptualizing interdisciplinary teacher education. It advocates teacher education programs that address a practical twofold purpose: To explicitly foster preservice teachers in making useful connections between and among their required coursework, and in learning firsthand interdisciplinary approaches they can in turn pass alongto their future students (Fiume, 2005). In addition to this introduction, this chapter situates Maxine Greene as its major theoretical referent, who provides a constructivist framework suitable for conceptualizing interdisciplinary teacher education. It finds support for interdisciplinary work in the scholarship of curriculum theorists and teacher educators. It addresses the state of the field, including a survey of various forms of interdisciplinary teacher education programs in the States. It considers the uncertain future of interdisciplinary studies programs and advocates the need for developing interdisciplinary teacher education reform and curriculum. This study can be understood as a response to an imperative derived from Klein (2002), who finds the ultimate goal of interdisciplinarity is "To reconstruct whatis taught and how it is taught" (p. 8).

Among the most pronounced constructivist threads that run through Greene's work and guide this study is the basic assumption that education enables people "to become different, to enter the multiple provinces of meaning that create perspectives.. .and look through the lenses of various ways of knowing, seeing, and feeling in a conscious endeavor to

impose different orders upon experience" (Greene, 2001, p. 5). Greene (1995) recognizes that student's endeavor "to make sense of their lived lives, to make connections, to construct meanings" (p. 90). While students are conscious and unique individuals at the center of the educational enterprise, Greene (1995) stipulates, "the individual does not precede community" (p. 197). Further, through various forms of community, Greene (2001) recognizes people "in their diversity... engage... against the background of their own lived lives" (Greene, 2001, p. 148). Greene (1995) asserts we must construct meaning and rewrite texts within the context of our shared experiences and stories, through which we gain a broader and enriched understanding of the world. Moreover, Greene writes of the human "hunger for community" (p. 23), and the need for emancipatory education through which "persons in their plurality.. .can become different, where they can grow" (p. 56). Our efforts to initiate change and transformation require the help of others (Greene, 1973). Various forms of learning communities (Gabelnick, Matthews, MacGregor, & Smith, 1990) and collaborations (such as interdisciplinary seminars) can lead not only toward social transformation but also self-discovery (Greene, 1978).

INTERDISCIPLINARY TEACHER EDUCATION MODEL

The professionalization of the teaching profession is tantamount, and it is associated more with *educating* than *training,* based on Dewey (1921, 1963) and Eisner (2002). Dewey (1921) sharply demarcates being "trained like an animal rather than educated like a human being" (p. 13), critiques methods of teaching that neglect the development of the mind, and insists the only viable approaches to improving learning must focus on "the conditions which exact, promote, and test thinking" (Dewey, 1921, p. 153; see also Dewey, 1933). Eisner (2002) distinguishes between *teaching* and *instruction,* and finds the complexities of teaching are misconceived and undervalued when the differences between education and training are neglected. Eisner (2002) associates teaching with that which is flexible, emergent, expressive, and artistic, whereas instruction corresponds to the kind of rote, technological, or mechanical processes that could be aptly described in an instructional manual, or with forms of education that stress standardization, efficiency, and routine, as well as "skills obtained apart from thinking" (Dewey, 1921, p. 152). Educating cultivates what Eisner (2002) refers to as "fluid intelligence" which finds parallel in Dewey's (1963) "flexible purposing," the ingenuity to shift goals, thoughts, and actions to problem solve, as well as modify or adjust the environment (Eisner, 2002, p. 163). Eisner (2002) claims "What diminishes human rationality is the thwarting of flexible human intelligence by prescriptions that shackle the educational imagination" (p. 165). Educating stands in contrast to training and interdisciplinary teacher education strives to teach, not merely train future educators.

This does not in any way serve to advance alternative teacher certification programs that, for example, provide teacher certification for people with bachelor's degrees in non-education fields. Interdisciplinary teacher education strives to enhance the academic integrity of the teacher education program by preparing teachers as

36

well-educated, transformative leaders through an integrated curriculum that provides a solid theoretical and practical grounding in the field of teacher education. Eisner (2002) endorses taking "alternative routes" that embrace the possibilities of education, just as interdisciplinarians advocate "alternative" interdisciplinary approaches to teaching, learning, and researching, yet those *alternatives* clearly have no connection with alternative teacher certification. Cochran-Smith (2006) points out "there are no clear, compelling, and empirically strong conclusions" (p. 91) that prove alternative certification programs, including *Troops to Teachers* and *Teach for America,* improve P-12 education. Interestingly, alternative teacher certification finds support at present among influential individuals and groups, including the U.S. Department of Education, conservative foundations endorsing deregulation of teacher education and other market-based reforms, and the Board for the Certification of Teacher Excellence (Cochran-Smith, 2006, p. 91). Cochran-Smith (2006) maintains that alternative certification denigrates the professionalization of teacher education as it imposes false binaries onto teacher education in two significant ways. First, she attacks the claim that alternative certification dichotomizes college graduates and educational school graduates, hinging on the notion that college graduates possess subject matter knowledge and verbal ability, whereas teacher education graduates are deficient in both areas. Second, she rejects the presumption that education courses are superfluous but discipline-based content- area courses are not. Eisner (2002) reminds us that to endorse benchmarks that attempt to deskill the profession, to "teacher proof [and] develop methods that do not require the use of the teacher's judgment, is to demean teachers and to expect them to function as automatons rather than professionals who have a stake in what they are doing in classrooms" (p. 41). Cochran-Smith (2006) maintains alternative teacher certification represents an enduring and deep disagreement in public perception about the purposes of schooling, the value of teaching, and the academic preparation of teachers. These are among the reasons why interdisciplinary teacher education does not endorse or intentionally align with alternative teacher certification programs. The more clearly we can articulate the sorts of people we wishour P-12 educators to be, the more effectively we will be in declaring why professional teacher education is essential.

CONCLUSION

The conclusion of this study is guided by a question posed by Geertz (1983): "The interesting question is not how all this muddle is going to come magnificently together, but what does all this ferment mean" (p. 34)? This study conceptualizes interdisciplinary teacher education programs and advocates interdisciplinary approaches to teaching and learning as a postsecondary educational reform. This study of interdisciplinary teacher education is itself an interdisciplinary study, forging common ground between the fields of interdisciplinary studies and teacher education and integrating them within a social constructivist methodology and theory of learning. Using Maxine Greene's constructivist methodological lens, this study provides a review of the literature of recognized scholars in the fields of interdisciplinary studies, social constructivism, and teacher education to conceptualize and produce a model of

interdisciplinary teacher education. It is acknowledged that arguments can never prove the truth of their presuppositions or conclusions (Magee, 1999). Yet, this study supports Adler's (2001) claim "whether a fragmented system of education can in any effective way produce integrated beings is perhaps the most significant question confronting practitioners of .. .education today" (p. 151). It holds that interdisciplinary teacher education is essential in the Global Age as it challenges teacher education to more fully consider and implement interdisciplinary curricular and pedagogical innovations.

REFERENCES

Arti Pandya (2001). Uncommon sense: Liberal education, learning communities, and the transformative quest. *Reinventing ourselves: Interdisciplinary education, collaborative learning, and experimentation in higher education*

Amitabh Basu & Dilip Vardha *International studies; An interdisciplinary approach to global issues.*

Augsburg, T. (2005). *Becoming interdisciplinary; An introduction to interdisciplinary studies.* Dubuque, Iowa: Kendall/Hunt Publishing Company.

Baum, J. (2003). Maxine Greene, philosopher & aesthete. *Education Update Online.* Retrieved October 8, 2008

Beane, J. A. (1995). Curriculum integration and the disciplines of knowledge. *Phi Delta Kappan,* 76(8), 616-622. Beane, J. A. (1997). *Curriculum integration: Designing the core of democratic education.* New York: Teacher's College Press. Beck, C. & Kosnik, C. (2006). *Innovations in teacher education; A social constructivist approach.* Albany, NY: State University of New York Press.

Bentson, K. (2005). Beyond the circle: Challenges and opportunities for the contemporary liberal arts teacher-scholar. *Liberal arts colleges in higher education: Challenges and opportunities* (pp. 98-112). Council of Learned Societies (ACLS Occasional Paper, SerialNo. 59).

Burbules, N.C. (2000). Moving beyond the impasse. In D.C. Phillips (Ed.),*Constructivism in education; Opinions and second opinions on controversial issues* (pp. 308-330). Chicago: The University Press.

Carlson, D. (2006a). Are we making progress?: Ideology and curriculum in the age of no child left behind. In L. Weis, C. McCarthy, C., & G. Dimitriadis, G. (Eds.), *Ideology, curriculum, and the new sociology of education; Revisiting the work of Michael Apple* (pp.

91-114). New York: Routledge. (2006b). Response to "Response to objectivism and education." *The Educational Forum 70(4),* 296-309.

Charmaz, K. (2003). Grounded theory: Objectivist and constructivist methods. In N.K. Denzin & Y.S. Lincoln (Eds.), *Strategies of qualitative inquiry* (2nd ed.) (pp. 249291). Thousand Oaks, CA: Sage Publications, Inc. Cat, Jordi, "The Unity of Science", The StanfordEncyclopedia of Philosophy (Fall 2007 Edition), Edward N. Zalta (Ed.), Retrieved December 8, 2007 The challenge of connecting learning. (1991). Liberal learning and the arts and sciences major (Vol. 1). Washington, DC: Ford Foundation. Retrieved July 8, 2007

Clark, E.T. (2002). *Designing and implementing an integrated curriculum: A student- centered approach.* Brandon, VT: Holistic Education Press. Cochran-Smith, M. (2006). *Policy, practice, and politics in teacher education; Editorials from the journal of teacher education.* Thousand Oaks, CA: Corwin Press. Cochran-Smith & Fries, K. (2005). Researching teacher education in changing times: