Graduate Program in Critical and Creative Thinking (CCT)
Self-study for 2002-3 AQUAD Review

Prepared by the core members of the CCT faculty—Professors Blum, Greenwald, Millman, Schwartz, Smith and Taylor
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Preamble

Critical thinking and creative thinking are defined or construed in many different ways; there is, moreover, no standard definition of what it means to combine the two pursuits. This has allowed the mission of the Graduate Program in Critical and Creative Thinking (CCT) at UMass Boston to grow and develop over more than twenty years in response to personal interests and professional needs of the students in the Program and in response to the changing make-up and and ongoing personal and professional engagements of the faculty. Such engagements build on, but have often extended some distance from, their original disciplines of education, philosophy, psychology, mathematics, and the life sciences. As one way to convey the flavor of CCT as an evolving entity, we start with the personal story of the newest faculty member.[1] We follow this with historical background for the Program as a whole and set the scene for the current AQUAD review.

<u>A journey (Peter Taylor, Faculty advisor for CCT)</u>
As a young environmental and political activist in Australia in the 1970s I was involved in a wide range of actions—from working with trade unionists to oppose the construction of an inner city power plant through campaigning against excess packaging to establishing a natural foods co-operative. However, when someone asked me: "If you could wish for one thing to be changed when you wake up tomorrow, what would it be?" my answer was not a concrete political success or environmental improvement. I replied simply: "I would want everyone to question," by which I meant not to be merely sceptical, but to consider alternatives to accepted views and practices. This interest in critical thinking led, eventually, to my teaching science students to examine the social influences on knowledge-making. Addressing the challenges of this kind of teaching led, in turn, to my applying for the second full-time faculty position in the CCT Graduate Program at UMass Boston (UMB) in 1998.

When I look back at the path from Australia in the 1970s to CCT, I see that I was also moving in the direction of creative thinking. Where, we can ask, do a critical thinker's ideas about alternatives come from? Not out of individual inspiration, but from borrowing and connecting. The more items in your tool box—the more themes, heuristics (rules of thumb), and open questions you are working with—the more likely you are to make a new connection and see how things could be otherwise, that is, to be creative. Yet, in order to build up a set of tools that works for you, it is necessary to experiment, take risks, and reflect on the outcomes. Such "reflective practice" is like a journey into unfamiliar or unknown areas—it involves risk, opens up questions, creates

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[1] Biographical sketches of other CCT faculty members are included in their curriculum vitae.

more experiences than can be integrated at first sight, requires support, and yields personal change.[2]

Traditionally exponents of critical thinking have emphasized the teaching of skills and dispositions for scrutinizing the assumptions, reasoning, and evidence brought to bear on an issue by others and by oneself. In short, they promote thinking about thinking. But how do students come to see where there are issues to be opened up and identify those issues without relying on some authority? The current form of my evolving "answer" is that people can understand things better if they place them in tension with alternatives, but, in order to encourage them to do so, they also need support as they grapple with inevitable tensions in personal and intellectual development.

This picture of critical and creative thinking and reflective practice makes a virtue of my personal history of chewing on many questions, exploring alternative practices, and accumulating diverse tools; of relying less than many of my peers on established intellectual positions and institutional arrangements; and of not following well-intentioned advice to get established in one discipline and use that as a base to seek a wider impact. My continued journeying prepared me to present myself as a "work in progress" once I joined the CCT community, in which we are engaged in learning how to support others to "develop reflective practice and change their schools, workplaces, and lives"—and to keep journeying.

The Program's journey
When the Master of Arts degree in Critical and Creative Thinking at UMass Boston was established in 1979-80, three interrelated objectives were stated:
-- to improve the critical and creative thinking skills of the program participants;
-- to help the participants achieve an understanding of the phenomena of critical and creative thought, and to think through the problems and issues concerning these phenomena... explored in the intellectual community; and
-- to translate this understanding into significant classroom or other educational practice in various subject areas.[3]
The founding faculty—Bob Swartz, Steve Schwartz, and Delores Gallo[4]—came from philosophy, psychology, and education, respectively. When the program began, there was only one specialty area, Moral education and moral issues, and participants were teachers and administrators from local schools.

By 1986, two additional specialty areas—Literature and Arts, and Mathematics and Science—had been added and faculty members Arthur Millman and Carol Smith were hired in Philosophy and Psychology, respectively, with a 50% commitment to CCT. Theses since then have shown students pursuing their personal and professional development in the creative arts, government and social services, and the corporate sphere, as well as in education, broadly construed. A gradual evolution has continued. By the time of the last scheduled review in 1994-95, dialogue had emerged as an exciting new theme, which led to the addition of the fourth specialty area, now called Workplace and Organizational Change. The original emphasis on critical and creative

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[2] Peter Taylor, "We know more than we are, at first, prepared to acknowledge: Journeying to develop critical thinking," under review for Journal of Pedagogy, Pluralism, and Practice. Manuscript available on-line at http://omega.cc.umb.edu/~ptaylor/journey.html.
[3] Cited in the 1994 self-study.
[4] Bob Swartz left the Program in the late 1980s. He and Delores Gallo retired from the University in 2002.

thinking in mostly philosophical and psychological terms has been enriched by the faculty and students paying more attention to the social influences on critical and creative thinking and to the supports needed to foster such thinking—or, more accurately, to foster critical, creative, and reflective <u>practice</u>.

A number of strands have contributed to the evolution of the Program towards social concerns and organizational change, including: Larry Blum's contributions since the early 1990s to antiracist education; Peter Taylor's emphasis on the life and environmental sciences in their social context since his appointment as the second fulltime CCT faculty member in 1998; and Nina Greenwald's work on problem-based learning (PBL), especially in the biomedical sciences. (Nina has been a half-time visiting faculty member since 2000, but has taught in the Program on a part-time basis since the 1980s). Student interests in facilitating organizational change and in math. and science education have grown substantially in recent years, but a wide range of students' interest persists. Significant numbers of CCT students still work in areas such as writing and the creative arts and general classroom teaching—sometimes in combination with organizational change or math. and science education!

The previous Program Review in 1994-95 under the leadership of Pat Davidson was very favorable. However, during a University budget crunch the following year it was decided to move the Programs' home from the College of Arts and Sciences (CAS) to the Graduate College of Education (GCOE), with a concomittant increase in teaching load and decrease in the number of faculty members assigned full-time to the Program (from three to two). Other details of the move were not formalized, but it was expected that CCT would, as it has done, continue to offer courses that had been taken by many students in education programs. The .5 faculty teaching load contributions from the Philosophy and Psychology departments that originated with the appointments of Arthur Millman and Carol Smith continued, as did Philosophy's contribution of Larry Blum's teaching of one section every third semester. Resources within the GCOE have turned out to be less stable. Many factors have contributed, including: a delay in replacing a retiring full-time CCT faculty member; the extended medical leave of Delores Gallo since Summer 1999 and now her retirement; two years of lower-than-target admissions; and the focusing of GCOE resources on teacher preparation and national accreditation. Now that CCT admissions have returned to high levels (above its target), the current University budget crunch has not allowed a restoration of resources to the Program.

Ongoing adjustment to these circumstances is reflected in the goals and objectives spelled out in the Program's June 2000 AQUAD planning document, which this self-study assesses. By reconfiguring CCT's operations and achieving greater efficiencies the Program has sought to:
-- maintain its strength as an interdisciplinary program with a strong focus on individualized learning, growth, and mid-career professional development;
-- develop a clear and constructive role in GCOE, coordinating with other GCOE graduate programs and outreach initiatives; and
-- address the 1994-95 review committee's recommendations, in particular, that of presenting a higher profile, within the university and in the wider community, for what is distinctive about CCT's work.
The report and supporting material document an impressive level of planning, innovation and accomplishment given the reduced resources available to the Program. Nevertheless, the current AQUAD review cannot be seen as routine. The mission, institutional location, survival of CCT as a graduate program have been called into

question during recent years, resources from GCOE have been reduced, and decisions have been postponed pending the outcome of this review. Furthermore, maintaining the Program at the level of resources available within GCOE has come at significant personal cost to the primary faculty members—first Delores Gallo and now Peter Taylor and Nina Greenwald—so the current situation does not seem sustainable.

It is not straightforward to identify "the solution" given the current institutional flux at UMass Boston—a new Provost needing to conduct several searches to replace interim or retiring Deans; the College of Arts and Sciences being separated into two colleges; further budget cuts to the University and consequent tuition and fee hikes looming; and new regulations from the Department of Education for teacher licensure yet to be finalized. The future plans section of the report begins, therefore, by identifying general conditions for sustaining a small interdisciplinary graduate program whose faculty span departments and colleges. If these conditions, which would benefit other programs as well, could be established, the virtues and implications of specific options for CCT are easier to analyze. The current strength of the faculty as a whole and the two faculty assigned primarily to CCT—Peter Taylor and Nina Greenwald—together with the primary interest of a significant number of CCT students point to a possible focus in a general area we might call "science, sustainabilty, and social change." This would combine emphases on organizational change and reflective practice, life and environmental sciences in their social context, and science and environmental education (construed broadly to extend from improving the teaching of scientific concepts and methods to involving citizens in community-based research).

Yet such a reorientation should not be made without careful consideration and allowance for a reasonable transition period. To avoid losing the pool of applicants historically attracted to the Program, a more modest change might be considered—adoping the name "Reflective Practice" to highlight the Program's emphasis on personal and professional development for mid-career practitioners. "Science, sustainabilty, and social change" would then become a growth area to pursue under the inclusive umbrella of a Program on Reflective Practice.[5] After all, the Program has not lost its relevance or currency. As this self-study will demonstrate, CCT's mission remains distinctive and attracts and engages students from locally and from abroad. The Program enables them to advance their personal and professional lives; testimonials from many graduates point to CCT providing a deeply meaningful, life-changing experience. Since the last review the Program has averaged 16 M.A.'s awarded per year—135 in total—and, after some lower years, graduation numbers in 2002-03 will move back up above this figure. If other virtues are needed to warrant institutional recognition and support for CCT, readers will also find in the pages to follow evidence of a graduate program that serves its students very economically, offers courses that serve more students outside the program than any other at UMass Boston, contributes to the University and wider communities, provides models of ways to adapt and develop in response to new challenges and opportunities, and produces graduates who are constructive, reflective agents of change in education, work, social movements, science, and creative arts.

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[5] It might be noted that a very powerful contribution to sustainability education is currently being made by a student who is an artist. She is developing a program of training for artists that combines responsibility to their own health, the environment, and their communities.

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Abbreviations

AQUAD	Academic QUality Assessment and Development
AY	Academic year
CAS	College of Arts and Sciences
CCT	Critical and Creative Thinking graduate program
CLR	Course Load Reduction
C&I	Department of Curriculum and Instruction (formerly School Organization, Curriculum and Instruction)
FTE	Full-time equivalent student = 9 credit-hours for a graduate student
GA	Graduate Assistant (includes RAs and TAs)
GCOE	Graduate College of Education
GPD	Graduate Program Director
NERCHE	New England Research Center for Higher Education
OIRP	Office of Institutional Research & Policy Studies, a.k.a. Institutional Research
PBL	Problem-based learning
RA	Research Assistant
TA	Teaching Assistant
UMB	University of Massachusetts Boston, a.k.a. UMass Boston

I. Description

A. Description
1. Program Identity
Graduate Program in Critical and Creative Thinking
M.A. and Graduate Certificate

Home Department since 1996/97: Curriculum and Instruction (until 2001, School Organization, Curriculum and Instruction) in the Graduate College of Education. Continuing faculty assignments from Departments of Psychology and Philosophy in the College of Arts and Sciences.

2. Mission and Overview (from 6/00 AQUAD plan,[6] with some revisions)
The banner on the website of the Graduate Program in Critical and Creative Thinking (CCT) reads: "developing reflective practice and changing our schools, workplaces, and lives." In this spirit CCT provides its students with knowledge, tools, experience, and support so they can become constructive, reflective agents of change in education, work, social movements, science, and creative arts.

Content of Studies: Traditionally, the knowledge base emphasized in Critical and Creative Thinking has included psychological studies of the scope, limits, and techniques of critical and creative thought, information processing, and conceptual learning in children and young adults; philosophical studies of reasoning, argument, logical thinking, valuing, and judging; and work with cognitive structures and metacognitive techniques for stimulating creativity and critical thought. This knowledge base is expanded through elective courses that take students into areas of specialization and through training in research, evaluation, and writing, allowing students to gain a range of tools for their own personal and professional development and for helping others develop equivalent processes. More recently, CCT has delved further into inter- and intra-personal dimensions of critical and creative thinking and reflective practice, involving empathy, listening, dialogue, and facilitation of other group processes. An interest in contributing to constructive social change has also led CCT faculty and students to address anti-racist and multicultural education and to promote the involvement of teachers and other citizens in debates about science in its social context. Like the students in the Program, CCT faculty members are engaged in ongoing personal and professional development, which builds on, but extends some distance from, their original disciplines of education, philosophy, psychology, mathematics, and the life sciences.

Students and intended impact of studies: The CCT Program appeals to mature students who are interested in learning from and with others of diverse backgrounds and interests. Many are mid-career educators: teachers and college professors, curriculum specialists, teacher educators, museum educators, or school administrators. Others are policy makers or personnel trainers in government, corporate, or non-profit settings. Some are artists, musicians, or writers. Through course projects, independent studies, and the capstone synthesis projects, CCT students translate what they learn into strategies, materials, and interventions for use in diverse educational, professional,

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[6] The original plan can be viewed at http://omega.cc.umb.edu/~cct/aquad00.html. A summary of webpages referred to in this self-study is included as appendix II.10 and available online at http://omega.cc.umb.edu/~cct/aquad02webnotes.html.

and social settings. The Program's mission is that students graduate well equipped for ongoing learning, addressing the needs of their schools, workplaces, and communities, adapting and contributing to social changes, and collaborating with others to these ends.

3. Goals and Objectives

3.1 Goals and Objectives from 6/00 AQUAD plan [with additions noted in brackets]

Goal A. To provide graduate students with an understanding of the processes of critical thinking and creativity, and with ways of helping others develop these processes in a variety of educational, professional, and social situations.

Objective A1. Establish forms of evaluation of student outcomes that reflect the Program's educational philosophy.
   a. Document the achievement of this educational goal through a self-evaluation on the part of graduating students in which they take stock of i) ways they have translated what they have been learning into strategies, materials and interventions for use in their own settings, and ii) directions that need further development.
   b. Experiment with new, "authentic" evaluations for required CCT courses that provide more useful information about the course experience to the instructor, future students, and collegial reviewers, and allow current students to take stock of what they have learned about learning. [See also objectives A3c & d concerning making changes in response to these and other course evaluations.]
   c. [Added since 6/00] Compile documentation, especially theses and syntheses, that displays the range of ways graduates have become "constructive, reflective agents of change in education, work, social movements, science, [or the] creative arts."
   d. [listed under goal A2 in June 2000 plan] Communicate with lapsed students to learn ways the CCT Program could serve students better; [added since 6/00] do the same for graduates and current students.

A2. Attract and retain [qualified and diverse] students to reliable Program offerings.
   a. Maintain new enrollments in CCT programs of study to an average of 21-25 admits per year,[7] increasing the proportion of matriculants going on to graduate.
   b. Promote the new CAGS Concentration in Facilitating Reflective Practice [made possible by a partnership with the Educational Administration program] and recruit one-three students for each summer's cohort starting in 2001.
   c. Maintain a reliable roster of CCT courses allowing students to specialize in the four areas listed in the Program mission.
   d. Maintain course enrollments that ensure that no more than one course per year is cancelled for lack of sufficient enrollment.
   e. Review and streamline the published course offerings so the Graduate Bulletin reflects closely what is available on a regular basis.

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[7] The June 2000 plan misstated the target set by the College for the program (as communicated by Assoc. Dean/Acting Dean V. Harvey). It was 21-25 <u>admits</u> per year, not 21-25 matriculants.

f. Institutionalize the weekly "CCT in Practice" series of presentations so, in particular, new students become acquainted with the range of areas addressed by members of the wider CCT community.
[g. See Objective A1d.]
h. [Added since 6/00] Maintain a system of advising current and prospective students that attends both to general issues about CCT studies and students' particular concerns.
i. [Added since 6/00] Make effective use of computers and other technologies to recruit and advise students.
j. [Added since 6/00] Maintain or increase the i) quality and ii) diversity of students admitted to the Program.

A3. Develop [and revise] Program offerings in emerging areas of social relevance, faculty specialization, [added since 6/00] and use of educational technology.
a. Develop and offer regularly courses that involve critical and creative thinking in the areas of i) science in its social context/ science, technology and values, including environmental studies; ii) dialogue and collaboration in personal and organizational change (through Continuing Education courses), and iii) invention (seeded by a National Collegiate Inventors and Innovators Alliance grant).
b. Establish two targeted certificate programs, "Science, Education, and Society, " and "Dialogue and Collaboration in Organizational Change," to be offered in collaboration with Continuing Education and a CCT outreach unit (see E1 below).
c. Review the Program requirements and content of required courses to complement and adjust new directions in CCT offerings.
d. [Added since 6/00] Review and revise the content of courses to keep them up to date with current scholarship and practice.
e. [Added since 6/00] Make educationally justified and sustainable choices about when and how to integrate computers and other technologies into the teaching of CCT courses and requirements for students.

B. To establish planning parameters that allow CCT faculty to determine the best use of their experience and energies and [added since 6/00] adjust operations to work within those parameters.[8]

B1. Set or settle parameters for CCT's role in the GCOE
a. CCT's Mission [in relation to the GCOE]
b. Level of CCT course offerings
c. Continuation of two full-time lines with primary responsibility to CCT, and replacement when faculty are on leave. (This is particularly important for CCT's mission and for the realization of this plan.)
d. Expected student numbers in the CCT Program and courses
e. Emphasis on the synthesis option, not the thesis, for the M.A. capstone

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[8] Goals B and C and several other objectives in A2 and E reflect ongoing adjustment to the new institutional location in GCOE and to the reduction of resources since the previous Program Review in 1994-95 (see section IA. 3.2, Rationale).

   f. Cross-college institutional arrangements to recognize the CAS faculty who
   work in CCT, secure continuing CAS contributions, and include those faculty in
   promotion and other reviews for CCT faculty in GCOE
   g. Support for part-time faculty
   h. Administrative support, to facilitate smooth day-to-day running of the
   Program and outreach to create conduits that bring in new students.

B2. Achieve recognition of CCT's mission and the other planning parameters by other
GCOE Programs and Departments.
   a. Circulate the CCT Mission statement, with an appendix on the planning
   parameters once they are set/settled
   b. Invite GCOE leaders and other faculty to briefings or forums on CCT
   c. [Added since 6/00] Explore possibilities and make the case for institutional
   support at UMass Boston of CCT's mission outside the GCOE.

B3. [Added since 6/00] Institute measures for recruitment, advising, and other
administrative tasks (such as preparing for program reviews) that preserve time and
attention for instructional needs and scholarship.

C. To contribute to increased cross-program collaboration in the GCOE.

C1. Promote and foster the new CAGS Concentration in Facilitating Reflective Practice
made possible by a partnership with the Educational Administration program.

C2. Establish a forum for cooperation among the mid-career professional
development-oriented MA programs, in particular, contributing ideas and referring
students to each others' teacher-research and research preparation courses.

C3. Play a significant role in a strong and distinctive GCOE contribution to educating
math. and science educators, a role that combines CCT's emphases on conceptual
change in students and understanding science in its social context (see A3ai).

C4. Contribute to the evolution of standard GCOE course evaluations and streamlining
of procedures for passing on the results in a form that faculty can use to develop their
teaching (see A1b).

C5. Promote CCT outreach efforts (see E below) through joint publicity and shared
sponsorship where appropriate with other GCOE centers and projects.

C6. [Added since 6/00] Contribute to the NCATE accreditation of the Professional
Education Unit (PEU), centered in the GCOE.

*D. To contribute to increased collaboration with and contributions to other units within the
University*

D1. CCT faculty offer two presentations per year on teaching innovation through the
Center for Improvement of Teaching [added since 6/00] and other fora.

D2. CCT faculty members take an active role in supporting further development of the undergraduate Program in Science, Technology and Values.

D3. Enlist faculty from within the University to teach CCT courses, advise students, and participate in other Program activities to replace faculty members previously teaching for CCT, but no longer doing so.

D4. [Added since 6/00] CCT faculty members take an active role in new developments in Environmental and Science Education at UMass Boston.

D5. [Added since 6/00] Collaborate in the projects and initiatives of other UMB centers and projects.

E. To undertake outreach [beyond UMB] that builds on the professional strengths of the part-time faculty and growing network of graduates, as well as the regular faculty.

E1. Prepare a prospectus for an outreach unit by the summer of 2000, detailing the planning premises, mission, initial projects, governance and processes of evaluation and ongoing development, resources and funding plans, and integration with the CCT Program, GCOE, Continuing Education, and the University.

E2. Involve the outreach unit in the two targeted certificate programs (see A3b).

E3. Add at least one project or activity under the [outreach] unit each year (added since 6/00) that serves communities beyond UMass Boston.

E4. Expand the network of CCT graduates involved in the unit each year.

E5. Maintain a monthly schedule for the Changing Life working group [and make other contributions to] teaching critical thinking about the life and environmental sciences.

E6. Undertake outreach and community service through other channels.

F. To support CCT faculty and students in research on and publication of their distinctive contributions to the fields of critical and creative thinking.

F1. Establish a website of techniques and illustrative cases that CCT faculty members have developed in courses and other forums (see A2f & E5).

F2. Prepare a prospectus for publication of a fieldbook of these techniques and cases by summer of 2002.

F3. Establish a process to identify students prepared to undertake thesis research, and establish advising relationships to support them in completing their theses.

F4. [Added since 6/00] Arrange discussions of the works in progress of individual CCT faculty members and draw wider attention to the resulting publications.

G. To evaluate and continue developing the Program.

G1. Constitute an advisory board by the summer of 2000, which would meet twice a year to give advice to both CCT and its outreach unit, help keep CCT faculty abreast of new developments, and monitor the support and resources CCT and the outreach unit provide each other.

G2. Review and revise this planning document at the first meeting of the Advisory Board and then on an annual basis.

G3. Arrange facilitated, participatory planning sessions so as to enhance the participation and investment of CCT faculty in the resulting plans.

G4. Develop during the 2001-2 academic year and begin to implement a strategic plan for increasing the social diversity of CCT students and for CCT courses to address the issues of increasing diversity.

G5. Prepare a plan by summer of 2002 for establishing CCT as a place to train and support activists, concerned scientists, and other citizens in community-based research.

G6. Use evaluations (see A1a&b) and feedback from lapsed students (see A1d) to revise and improve CCT courses and other operations; [added since 6/00] ditto for graduates and current students.

G7. Arrange a survey of CCT graduates each AQUAD cycle to document ways their CCT experience has influenced their career development.

3.2 Overall Rationale for the Goals and Objectives (from 6/00 AQUAD plan, with addendum)
    Since the previous favorable Program Review in 1994-95, the home of CCT has moved from the College of Arts and Sciences to the Graduate College of Education and the Program experienced, unfortunately, a significant reduction of resources.[9] Ongoing adjustment to these circumstances is reflected in the goals and objectives.[10]

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[9] Specifically, office space, the resource room, and the half-time secretarial position were lost; the budget for part-time faculty and graduate assistants was reduced; the third full-time faculty position [filled by Judy Collison on a two-year visiting appointment during 1994-96] was not continued. The standard course load for faculty with full-time CCT lines increased to 6 per year; it had previously been 4 courses with supervising M.A. theses counting for the other 2 courses. [Added since 6/00] Since the June 2000 plan, the Program has lost the seminar room used for most of its classes, the Program office, the course load reduction for the Program Director to run the Program, the Graduate assistantships (30 hr/week) assigned to CCT to assist in running the Program and the large, interaction-intensive core courses, control over the funds distributed back to Programs for courses offered through Continuing Education, and the co-teaching of large core courses that allowed for intensive interaction and projects imprtant to this first experience students have in the Program. The half-time replacement in 2000-1 for the full-time faculty member on medical leave since Summer 1999 (and retiring in June 2002) was continued in 2001-3 only through funding from the Provost's office. See sect. IB for summaries of resources available to the program during the period since the 1994-95 Program review.
[10] Specifically, Goals B & C and several other Objectives in A2 and E.

Reconfiguring CCT's operations and achieving greater efficiencies are needed for the Program to be able to:
--maintain its strength as an interdisciplinary program with a strong focus on individualized learning, growth, and mid-career professional development[11];
--develop a clear and constructive role in GCOE, coordinating with other GCOE graduate programs and outreach initiatives[12] ; and
--address the 1994-95 review committee's recommendations, in particular, that of presenting a higher profile, within the university and in the wider community, for what is distinctive about CCT's work.[13]

      Let us elaborate on this general rationale: To develop efficient, reliable operations[14] based on the reduced resources now available requires that the parameters within which it is operating be clear and recognized[15] and that CCT's goals and objectives be supported by collaborations with other GCOE programs[16] and University activities[17]. Clear parameters will also help CCT faculty see where best to put their considerable, but not unlimited energies. Indeed, if the enthusiastic participation of CCT faculty [most of whom are not in the home college of CCT[18]] is to be retained, the Program must not simply consolidate, but must evolve in directions that reflect the emerging faculty interests,[19] including outreach that draws on part-time faculty and CCT graduates.[20] One of those faculty interests—increasing social diversity of the student body and of the cases and other course materials—is particularly challenging and thus the need for some strategic planning.[21]

      Continuation of two full-time lines with primary responsibility to CCT[22] is a precondition for achieving an efficient, reliable operation with sufficient enrollments.[23] Yet, despite the recent changes and resource reductions, the Program aims for more than a stable operation. Initiatives to address recommendations from the previous review include the targeted certificate programs, outreach activities, and publication.[24] These have been designed, however, to develop gradually and stay within the Program's means. In this spirit, writing about and disseminating techniques and illustrative cases that CCT faculty members have already developed[25] is given a higher priority for CCT-as-a-program than securing funding for new research projects. (This is not to preclude individual faculty members developing their own research

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[11] See Mission and Goal A

[12] Goals C and E

[13] Goals D-F

[14] Objective A2

[15] Goal B

[16] Objective B2 and Goal C

[17] Goal D

[18] Of the regular teaching faculty, only Prof. Taylor and visiting Professor Greenwald (replacing Prof. Gallo) are in GCOE. Professors Millman, Blum and Farrell Smith from the Philosophy Department and Professors Schwartz and Smith from the Psychology Department are in the College of Arts and Sciences.

[19] Objective A3

[20] Goal E

[21] Objective G4

[22] Objective B1c

[23] Objective A2

[24] Objective A3b and Goals D, E and F

[25] Objectives F1 and F2

proposals.) [Addition since 6/00:] Given the overall reductions in funding for the University and the specific reductions to CCT since the June 2000 plan, outside funds need to be sought simply to maintain basic services to students.

Constituting an advisory board will allow outsiders to provide perspective on how well CCT is balancing the demands of teaching, developing certificate programs, publication, and outreach.[26] The Program and course evaluations will provide valuable information on how well the Program is fulfilling the primary component of its mission, teaching students.[27] The survey of graduates' career development[28] might also generate donations to support the Program's development and outreach.

3.3 Strategy for Assessing Progress towards Goals and Objectives

The strategy for assessing progress towards these goals and objectives is addressed by the Program and course evaluations (objective A1) and other contributions to the ongoing development of the Program (goal G). In particular, the Advisory Board will take stock of whether the specified targets have been met and review the self-evaluations. If there are major discrepancies, the Board should insist that the Program convenes a facilitated, participatory planning session to analyze the situation and develop concrete responses.

4. Curriculum

a. Programs: Most students in CCT seek a Master of Arts (M.A.) degree (10 courses or 30 credits), but others study for a Graduate Certificate (5 courses or 15 credits). CCT courses also allow students from other graduate programs to fulfill requirements for courses in critical and creative thinking and in teaching in the different subject areas, especially in mathematics and science. Non-degree students can also take CCT courses; this opportunity, together with workshops, summer institutes, forums, and other outreach activities further extend the range of educational experiences offered by the Program. To accommodate the schedules of teachers and other professionals, courses are offered after 4pm as well as in intensive three-week sessions during the summer, and the Program can be completed on a part-time or full-time basis. Off-site courses have not been offered for several years and distance learning is not available.

b. M.A. Concentrations: M.A. students complete four foundation courses, three electives, and three final required courses including a capstone thesis or synthesis (see listing of courses below). The elective courses offered specifically address four areas in which students apply critical and creative thinking skills:
• moral education and ethical issues
• literature and arts
• mathematics, science, and technology (including sub-specialties in science in society, and environment, science, and society); and
• workplace and organizational change.
Additional areas of specialization can be constructed through cooperation with other UMass Boston graduate programs, such as Instructional Design, Special Education, Educational Administration, and Dispute Resolution.

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[26] Goal G

[27] Objective A1

[28] Objective G7

c. Capstone experience: The CCT Program offers two capstone options for synthesizing and extending Program learning—the Synthesis Project and the Thesis—which are available to all CCT students upon the completion of eight or nine courses. The Synthesis Seminar, available in the Spring and sometimes in the Fall semesters, provides structure and support to students choosing the Synthesis project as their capstone experience.

Synthesis Project Options:
All Final Projects must demonstrate knowledge and the integration of critical and creative thinking skills, processes and strategies. The final Synthesis is (at least) 20-40 pages (4500-9000 word), depending on the option selected:
    Long essay/paper;
    Case Study/Practitioner's Narratives;
    Curriculum Unit/ Professional Development Workshop Series;
    Original Products (with shorter documentation); and
    Arts Option (Performance) (also with shorter documentation).
Each Synthesis Project is read by two CCT or affiliated Faculty and culminates with a 30-45 minute oral presentation to be offered in the final weeks of the Synthesis Seminar.

Thesis Options
The Thesis option is available to those students who succeed in offering an acceptable—clear, thoroughly researched and well-written—Thesis Proposal (10 - 15 pages). The Thesis Proposal should demonstrate the student's ability to work independently, to research a topic of interest and write a clear, coherent, well-supported literature review using the conventions of academic writing.
The thesis provides an opportunity for the student to integrate and synthesize the knowledge and skills gained in the program into a significant work. Students may choose one of three options:
    the traditional thesis;
    the curriculum development thesis; and
    the arts and technology thesis.

d. Graduate Certificate: Students seeking the certificate take a total of five courses: a sequence of two foundation courses, Critical Thinking and Creative Thinking; and three other CCT courses. Customarily, these include either Foundations of Philosophical Thought or Advanced Cognitive Psychology, an elective course, and Practicum: Processes of Research and Engagement. Alternatively, students may, after consultation with their faculty advisor and with the approval of the Faculty Advisor [formerly, Program Director], take up to three electives in one specialty area. Students can choose these electives freely, but special themes in "Science, Education, and Society" and "Dialogue and Collaboration in Organizational Change" are brought to students' attention in program publicity, for which students select electives from, respectively, CCT 619, 640, 645, or 652 and CCT 616, 618, and 693.

e. Courses:
(Attachment A provides a Compilation of Syllabi)

Required Foundation Courses

CCT 601   Critical Thinking (spring and summer)
CCT 602   Creative Thinking (fall)
PHIL 501   Foundations of Philosophical Thought (fall) (formerly PHIL 601)
PSYCH 650   Advanced Cognitive Psychology (spring)

Elective Courses (three to be taken)
CCT611   Seminar in Critical Thinking (occasional)
CCT612   Seminar in Creativity (spring)
CCT616   Dialogue Processes (winter) (formerly The Dialogue Process)
CCT618   Creative Thinking, Collaboration and Organizational Change (summer)
CCT619   Biomedical Ethics (pending final approval)
CCT620   Moral Education (every third semester)
CCT627   Issues in Antiracist and Multicultural Education (every third semester)
CCT630   Creativity And Criticism in Literature and Art (fall)
CCT640   Environment, Science and Society: Critical Thinking (formerly Critical and
             Creative Thinking about Science and Technology) (every second-third
             semester)
CCT645   Biology in Society: Critical Thinking (formerly Seminar in Scientific
             Thinking) (occasional)
CCT650   Mathematics Thinking Skills (spring, offered through Teacher Ed.
             Program)
CCT652   Children And Science (fall or spring)
Possible electives from other programs
POLSCI 348   Science and Public Policy
POLSCI 370   The Darwinian Revolution
PPOL 797   Reprogenetics: Politics and Policy
plus others with advisor's approval

Required Final Courses
CCT 693   Seminar in Evaluation Of Educational Change (spring) (formerly CCT685
             Seminar in Educational Evaluation)
CCT 698   Practicum: Processes of Research and Engagement (fall; must be
             completed before taking CCT694)
CCT 694   Synthesis of Theory and Practice (fall and spring) (formerly CCT695)

5. Advising System

a. Recruitment and new student advising: Being a unique graduate program, there are
no standard conduits for students into CCT. A variety of means are used to make the
program known to prospective students, from word of mouth recommendations and
bookmarks distributed by members of the wider CCT community at events they
attend to a website that ranks high in google searches.[29] Once prospective students
find about CCT advising is mostly done through phone calls and emails and inquirers
are directed first to the detailed CCT Student Handbook (in printed form—Attachment
B—or on-line[30]), which takes the student through the steps from applying to

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[29] http://omega.cc.umb.edu/~cct/recruit.html.

[30] http://omega.cc.umb.edu/~cct/handbook.html or http://omega.cc.umb.edu/~cct/handbook.pdf

graduating, and the CCT website[31]   Prospective students are added to the email list for regular news compilations, invited to community events, and encouraged to take a course or two before matriculating. Summer is a particularly important period for recruiting and the Faculty Advisor (formerly Program Director) has to maintain a phone/email/advising presence out of the academic year (formerly the Program Director's stipend compensated for this). Students are called for an interview when the admissions committee has questions about whether an applicant fully appreciates the nature of the Program.

b. General advising: General advisors from the core CCT faculty are assigned to students upon acceptance to the program, but students tend to consult the Faculty Advisor by email or phone first, if they have not already used the CCT Student Handbook or website to answer their queries. Course plans, now required of all students, are entered into the Program's database and used to manage enrollment (e.g., when required courses are predicted to be over capacity students who can are encouraged to shift to another course). Required courses are offered on a regular schedule to simplify planning.[32] At one CCT meeting each semester, the faculty dicusses the situation of students having difficulties—usually manifest as incomplete incompletes—and decides what will be said to the student and by whom.
 Regular email news compilations are sent to the whole CCT community and specific announcements about courses, registration, etc. sent to current and prospective students.[33] Course offering brochures or flyers are distributed in classes before registration. The Program is slowly building a culture of mentoring of newer students by experienced students and alums. (A directory of students and alums from the last 20 years—attachment C—which lists interests and accomplishments, helps people make connections.) Events, such as orientations, open houses, and public presentations of capstone and pre-capstone projects, show current and prospective students how students, faculty, and alums put CCT into Practice. Given the diversity of careers from which CCT students are drawn, career advising takes the form of one-on-one conversations as requested.

c. Thesis and synthesis advising:
 CCT has a thesis and a synthesis option, both of which result in a bound scholarly product. The synthesis option requires only two advisors, as against three for the thesis, and the synthesis seminar provides a structure for much of this advising. Given the small size of the Program faculty, all students are now steered into the synthesis option, the required length of which is less than for a thesis. (Many students exceed the required length, however.) To reduce the advising time spent on form and formatting issues an extensive document giving guidelines and examples is distributed[34] and a website of links related to the various phases, including graduation, is kept up to date.[35]
 Students are supposed to submit a proposal and arrange advisor and reader before commencing this capstone project. This system was difficult to sustain with the

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[31] http://omega.cc.umb.edu/~cct   See printout of homepage, Appendix 8.4

[32] http://omega.cc.umb.edu/~cct/planner.html

[33] http://omega.cc.umb.edu/~cct/news.html

[34] M. Liblanc, a CCT alum, wrote the original version after she graduated as a gift to students who came after her.

[35] http://omega.cc.umb.edu/~cct/synthforms.html

extended absence of one of the two full-time faculty members, especially after the elimination of the Program Directorship stipends for advisors or readers outside regular UMass faculty. When topics and advisors are established after the synthesis seminar begins, students usually do not finish during the semester. The synthesis advising has to continue over the summer and winter months (and sometimes longer) that follow. Since 2001 the Program has had a growing number of almost, but not quite finished syn/thesis projects and has begun to ask students to sign up for a one credit independent study to gain recognition from all parties of the ongoing relationship.

The syn/thesis advisors are established with the student when they submit their syn/thesis proposal. Recently, the default option has become for the instructor of the synthesis seminar to serve as the main advisor and the cap on the synthesis seminar has been reduced to 6 this year to reflect that change.

6. Co-curricular activities

The Graduate student organization, the CCT Forum, has maintained a continuous existence over the period under review, using funds from the Graduate Student Assembly to host parties and co-host with the Program community gatherings and Open House events, in which students, graduates, and faculty lead mini-workshops to "share and experience ways to put critical and creative thinking into practice in schools, workplaces, and other settings."[36]

An outreach unit was initiated in Spring 2000, tentatively named "Thinking *for* Change." The main activity under this unit has been the Thinktank for Community College Critical Thinking Teachers, which was established in Fall 2000 to support the dedicated work of community college teachers as they face the challenges of serving students from diverse backgrounds—students who are often under-prepared for college education or lacking confidence in their abilities to thrive in that setting. The Thinktank has taken a break during the preparation of this AQUAD review, but should reconvene in Spring 2003. During 2001-02 CCT also hosted a number of professional development activities in schools based on contacts made at the annual meetings of the Massachusetts Teachers Association.

CCT has hosted a series of workshops for teachers and college faculty since Spring 1999 designed to foster critical thinking about science in its social context. Plans are underway to host an annual "Boston Summer Workshops on Science and Social Change."

7. Scheduling

To accommodate the schedules of teachers and other professionals, courses are offered after 4pm as well as in intensive three-week sessions during the summer, and the Program can be completed on a part-time or full-time basis. Course schedules are arranged so that students can often take two courses (the most common courseload) back to back on one evening. Although tiring for students, this is respectful of the large distances some students commute to campus.

The roster of required courses has had a fixed semester and day of offering for a number of years. The roster of electives has settled into a stable pattern of once/year or once/every three semesters that students can plan on, but the day the electives are offered may vary.

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[36] http://omega.cc.umb.edu/~cct/openhouse.html; http://omega.cc.umb.edu/~cct/orientation.html

The CCT faculty prepares a proposed course schedule and submits it through the Department of Curriculum and Instruction. (The only exception are the sections of CCT650, Mathematics Thinking Skills, which are organized by the Teacher Ed. program to serve as a math. methods course for their students.) Adjustments to the CCT schedule are made when requested to co-ordinate with the scheduling of related Teacher Ed. courses. For this and other reasons, there has been an imbalance in numbers of electives offered between the fall and spring semesters, which is not optimal for maintaining even course enrollments.

Since the 1980s many CCT courses were held in Wheatley 2-209, which was well suited for seminar-style courses and break-out groups. After the GCOE converted this room into a computer lab in the summer of 2001, the Psychology Department has found space for most CCT courses in their seminar rooms and teaching labs.

Off-site courses have not been offered for several years. Distance learning is not available, but future plans may emerge building on the experience of the part-time CCT faculty member, Allyn Bradford, who has been piloting distance learning courses on Teamwork under the Communication Department.

8. Governance

The Faculty Advisor (formerly the Graduate Program Director) for the CCT Program convenes face to face meetings of the CCT faculty an average of three times per semester, but email is increasingly used to present and refine course proposals and other plans. (Sometimes issues other than business even get on the agenda for these meetings!) Since the elimination of the GPD positions in the GCOE in 2001, the chair of the home department, Curriculum and Instruction, has had formal decision-making power over the Program; the constitution formalized for the Department in 2001 specifies no procedures for consultation or delegation around programmatic matters. However, the former GPD remains the contact person for the Graduate Registrar and Graduate Admissions offices and for many administrative matters handled by the Office of Graduate Studies. The relationship of the post-2001 governance structure in GCOE and the by-laws for graduate programs at UMass Boston is not known to the CCT faculty.

Besides meeting as a committee of the whole, there is one CCT sub-committee, a two-person Admissions Committee, whose members review applications as they become available.

9. Appendices and Attachments
I.1 Sample schedule [http://omega.cc.umb.edu/~cct/spring03.html]
I.2 Catalog copy
I.3 Fact sheet
I.4 Home page of website [http://omega.cc.umb.edu/~cct]
I.5 Brochure [http://omega.cc.umb.edu/~cct/brochure.doc]

Attachments
A. Compilation of Syllabi [see links from
http://omega.cc.umb.edu/~cct/courses.html]
B. Student Handbook [[http://omega.cc.umb.edu/~cct/handbook.html]
C. CCT Community Directory [to be added in a forthcoming supplement]

B. Human and Material Resources

Table 1, Figures 1-3 (both included at the end of the section) summarize most of the information on resources and enrollment for sections B and C. Table 1 provides human resources data for AY 1994/95 -2002/03 in rows indicated for:

Row	Data series
14	Faculty teaching sections (incl. part-timers & joint teaching), fall
19	Faculty teaching sections (incl. part-timers & joint teaching), fall & spring
20	Faculty with primary assignment to CCT (incl. full & half-time)
21	Regular faculty teaching in program [(sections+CLR)/course load]
22	Fall & spring CCT sections (& CLR) funded by GCOE
23	Fall & spr CCT sections funded by CAS
24	Admin. Staff for CCT
25	Grad. Assts. to Program (AA, TA, RA)
26	Grad. Admin. & Teaching Assts. (AA, TA)

The sections to follow highlight specific points, but the general features are a reduction in resources accompanying the move of the Program's home from CAS to GCOE in 1996 and further reductions since to well below the levels immediately after that move.

1. Regular faculty
a. Faculty assigned primarily to the Program
2002-3: one full-time and one half-time faculty member

Peter Taylor (full time, tenured)
Specializations: Critical Thinking and Reflective Practice, especially about Environment, Science, and Society and Biology in its Social Context
Faculty advisor (former Program Director) responsible for recruitment and admissions, general student advising, program administration and office management, website and handbooks.
Responsible for teaching final required courses in educational change, research, and writing (CCT694, 698, and 694) and critical thinking electives on biology and environment.

Nina Greenwald (half time, non-tenure track; funded by Provost's office)
Specializations: Educational psychology, teaching creative and critical thinking, problem-based learning, gifted education, teaching to multiple intelligences
Responsibilities include recruitment advising, outreach, teaching required foundation courses in creative and critical thinking, advising synthesis projects, and teaching electives in creativity and problem-based learning

(Curriculum vitae with biographical sketches included in Attachment D.)

Peter Taylor was hired starting 20 months after John Murray's retirement. No plans are in place to search for a full-time replacement for Delores Gallo, who retired in June 2002 after an extended medical leave.

Summary since last review

Year	# faculty assigned primarily to the Program	Faculty
1994-96	3	Delores Gallo, John Murray, Judith Collison (2 year replacement for Pat Davidson)
1996 Fall	2	Delores Gallo, John Murray (retired Dec. 96)
1997 Spr - 1998 Spr	1	Delores Gallo
1998-99	1.83	Peter Taylor, Delores Gallo (1/6 teaching for Doctoral programs)
1999-2000	1	Peter Taylor (Delores Gallo on medical leave)
2000-02	1.333	Peter Taylor (1/6 teaching for Teacher Ed.) , Nina Greenwald (1/2 time, funded by Provost's office in 2001-02) (Delores Gallo on medical leave; retired Jun. 02)

b. CCT Faculty from other units

1996-2003: 50% of a full-time teaching load commitment from Psychology and 50% of a full-time teaching load from Philosophy, as part of longterm agreement originating at time of hiring Profs. Smith and Millman, plus Larry Blum as long as he chooses at an average yearly contribution of 12% of a full-time teaching load.

Larry Blum (Philosophy Dept., CCT627, Anti-racist and multicultural education) (except 1997-98 & 2000-01)
Arthur Millman (Philosophy Dept., CCT601, Critical Thinking, Phil 501, Foundations of Philosophical Thought & synthesis advising)
Carol Smith (Psychology Dept., CCT652, Children and Science) (except 2000-01)
Steve Schwartz (Psychology Dept., CCT602, Creative Thinking & Psych 650, Advanced Cognitive Psychology) (except sometimes replaced by part-timers or, in Fall 02, with a grant-funded "consultant")
(Curriculum vitae with biographical sketches included in Attachment D.)

Also
1 section, CCT650, Math. Thinking Skills, taught by various faculty assigned from Math. Dept. or Teacher Ed. Program (except 1998-99; 2 sections in 2000-02 staffed by Teacher Ed. program to serve as math. methods course)
1 section in 1999-2000 of Creativity in Literature and Arts, CCT630, taught by faculty member assigned from Teacher Ed. Program
1 section in 1997-98 of Practicum, CCT698, taught by faculty member assigned from Teacher Ed. Program

2. Part-time faculty with instructional roles
a. Regular fall and spring semesters
Summary 1996-2003: 1-3 sections/ year; averaging 2 funded through GCOE and 0.3 funded by CAS

1 section in 1996-98, 2001-02 of CCT620, Moral Education -- Diane Moore, Ted Klein
1 section in 1999-2003 of CCT612 or CCT630, Creativity courses -- Ben Schwendener

1 section in 1996-98, 1999-2000 of CCT601, Critical Thinking -- Nina Greenwald
1 section in 1997-98, 1999-2000 of CCT602, Creative Thinking -- Nina Greenwald
1 section in 1999-2000 of CCT645, Scientific Thinking (Environmental education theme) -
        - Barbara Waters
2nd section, 2002-03, CCT650, Math. Thinking Skills -- Robert Oliver (staffed by Teacher
        Ed. program to serve as math. methods course)

b. Winter and summer sessions through Continuing Education
Four sections regularly taught:
1 summer section of CCT601, Critical Thinking -- Nina Greenwald, Janet Farrell-Smith
(Philosophy), and others
1 winter section of CCT616, The Dialogue Process -- Allyn Bradford* (when student
numbers have been sufficient)
Taught since 1999: 1 summer elective on theme of Biomedical ethics, now CCT619 --
Janet Farrell-Smith (Philosophy)
Taught since 2001: 1 summer elective, Creative Thinking, Collaboration and
Organizational Change, now CCT618 -- Allyn Bradford*, Peter Taylor, and others
(team teaching).
(*Curriculum vitae with biographical sketch included in Attachment D.)

3. Professional and classified staff
Until 1997-98 the Program had a half-time secretarial position. Since then CCT has
employed no professional and classified staff of its own.
No data are available to quantify the occasional assistance provided by the staff of the
Departments of Curriculum and Instruction, Psychology, or Philosophy.

Graduate assistants in the GCOE have historically included Administrative assistants
who help Graduate Program Directors run the different graduate programs (see 6
below). This administrative assistance is no longer available to CCT (since summer
2002).

4. Material resources
One MAC computer and 100 MB zip drive (both donated)
Telephone
Photocopying through allowance to individual faculty members
Laser printing and paper using Departmental printer
Offices: The full-time faculty member assigned primarily to the Program has his own
office, where most of the active program materials are stored; the half-time faculty
member shares an office.

5. Library use
Stimulated by library orientation sessions in courses, students' use of on-line reference
material increases each year. Some professors use the library reserve system, but the
reserve materials are borrowed less each year.

6. Student support
Historically, CCT students have secured support though the following channels:
        graduate assistantships that originate in the Office of Graduate Studies, but are
                allocated within the GCOE, either as research assistants to individual

> > GCOE faculty members or as teaching and administrative assistants to the Programs;
> > other graduate assistantships (e.g., to non-CCT faculty in GCOE; Office of Student Life; Sport & Recreation department);
> > international student tuition waivers; and
> > miscellaneous grant funding.

In 2002-03, one 1/4 time RA (=5 hours/week) is shared by one CCT faculty member. No other assistantships come through GCOE to the Program or its faculty for CCT students. Another student is serving effectively as a 1/4 time TA for the CCT core courses, with stipend funding from a faculty member's grant and another faculty member's income from Continuing Education teaching.

Table 1 and Figure 3 show past GA support, from a high of equivalent to 4.75 full assistantships (=20 Hours/week) in 1994-95, through the equivalent of 2-2.5 in years 1997-2001, to this year's allocation of 0.25. (Breaks in the lines in Figure 2 correspond to data unavailable for 1996-97.) The number of Graduate Assistants to the GCOE as a whole was more than halved in 2002-3 following the start of the new Union contract, but the reduction for CCT was greater.

7. Tables, Figures, and Attachment referred to in section IB
Table 1 Production, Resources, and Productivity Data by Academic Years 1994/5 - 2002/3 [http://omega.cc.umb.edu/~cct/aquad02table1.pdf]
Figure 1   Production by Academic Years 1994/5 -2002/3 (figures from Table 1)
Figure 2   Resources by Academic Years 1994/5 -2002/3 (figures from Table 1)
Figure 3   Productivity by Academic Years 1994/5 -2002/3 (figures from Table 1)
[http://omega.cc.umb.edu/~cct/aquad02figure123.pdf]

Attachment D. Compilation of Faculty Curriculum Vitae [see http://omega.cc.umb.edu/~cct/faculty.html]

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C. Student profile

1. Enrollment

Relevant data on student numbers ("production") and productivity (production per unit resource) are presented in Table 1 and Figures 1-3 as detailed below. The general features can be summarized as follows:

Production
The underlined admissions target of 23 for full year translates to 16.3 for the fall given historical fall:spring ratio of 70:30. This level was exceeded every year except 1997-98 and 2000-01. Those years followed periods with only one faculty member primarily assigned to the Program (referred to hereon as "primary faculty member").

The longterm average graduation rates corresponding to an admissions target of 23 would, given historical matriculation and retention rates of withdrawal, be 15. The much higher graduation levels for 1996-98 follow the start of the synthesis option as an alternative to the thesis and intensive advising to eliminate the large backlog of students with only their thesis remaining to complete. The lower levels for 1999-2002 follow mostly from lower admissions in 97-98 and 99-01, slightly higher withdrawals, and a new backlog in synthesis completion while the Program adjusted to the elimination in 2001 of the position and course load reduction for a Program Director.[37]

Productivity
The ups and downs of students per primary faculty member correspond to the downs and ups in primary faculty active in the Program.[38] With the move to GCOE the primary faculty dropped from 3 to 2 in Fall 1996 and to one from Spring 1997 when John Murray retired. In Fall 1998 Peter Taylor was hired but the primary faculty dropped to one again from Summer 1999 onwards with Delores Gallo's medical leave. This increased from Fall 2000 onwards with Nina Greenwald serving as a half-time replacement for Gallo.

The admissions target of 16.3 for the fall corresponds, prior to move into GCOE, to 5.4 admissions per primary faculty and 8.2 after the move. The Program is currently running at double this level.

The slight downward trend in enrollments per section from 1994/5 through 2001/2 can be traced to the large core courses being offered only once per year, which followed a drop in M.Ed. students taking these courses. Nevertheless, the enrollment per section this fall is similar to comparable Masters programs, the Teacher Ed.. M.Ed. program and the Masters of Public Affairs.

Table 1 (included at the end of the last section) provides enrollment data for AY 1994/95 -2002/03 in rows indicated for:

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[37] If tallied by the academic year September through August, the 2001-2 graduation rate moved back up towards the longterm expected average, a level the Program is on target to exceed this year.
[38] The actual number of students being advised as students in the program has averaged 25% higher than the figure at the Fall snapshot, the difference arising from late payment of program fees by students on leave or completing syn/theses. (* average for 1994-2002)

Row   Data series
1   Completed Applications, Fall
2   Admissions, Fall
3   Admission %, Fall
4   Admissions (Feb-Jan) (CCT db)
5   New matriculants, Fall
6   New matriculants, Full Year (CCT db)
7   Admits (Feb-Jan) didn't matric (CCT db)
8   Matriculants/admits
9   Total student body active start of fall
1 2   Fall enrollments (incl. Phil 501/601) (3cr)
1 3   Sections (incl. Phil 501/601)
1 5   Fall enrollments (non-CCT students)
1 6   % non-CCT students
1 7   Fall & spring enrollments
1 8   Sections (incl. Phil 501/601, Psych 650)
2 7   M.A. Graduations
2 8   Certificate graduations
2 9   Total graduations (Jul-Jun)
3 0   Av. time from matric to M.A. graduation
3 1   Withdrawals during year (CCT db)

To view these figures in relation to resources detailed in sect. IB, Table 1 provides productivity data for AY 1994/95 -2002/03 in rows indicated for:

Row   Data series
3 2   Admissions, Fall/ primary faculty
3 3   New matriculants, Fall/ primary faculty
3 4   Admissions/ primary faculty
3 5   New matriculants/ primary faculty
3 6   Total student body/ primary faculty
3 7   Total student body/ regular faculty
3 8   Fall enrollments/ section
3 9   Fall enrollments/ faculty teaching sections
4 0   Fall & spring enrollments/ section
4 1   Fall & spring enrollments/ faculty teaching sections
4 2   M.A. Graduations/ primary faculty
4 3   Total graduations/ primary faculty

To view these figures in comparison to other programs, Table 1 provides productivity data for AY 1994/95 -2002/03 in rows indicated for:
4 4   GCOE Admissions %, Fall
4 5   GCOE Female %
4 6   GCOE Ethnic minority %
4 7   M.Ed. Fall enrollments/ section [Graduate Teacher Ed. program]
4 8   MPA Fall enrollments/ section [Master of Public Affairs, a non-GCOE mid-career program]

2. Survey results and other evidence of student satisfaction

As part of our self-study, we sent detailed questionnaires to three groups of students: (a) students currently enrolled in the program; (b) students who have graduated from the program since Fall 1994[39]; and (c) students who had matriculated in the program, but then left the program without graduating. All students were asked basic questions about whether they were enrolled in the masters or certificate program, which track of the program they were in, how they heard about the program, and what led them to apply. They were also asked to explain their initial aspirations on joining the program and whether their aspirations had changed in any way. Students who had completed the program were then asked what professional or personal changes have happened to them that they attribute at least in part to their participation in CCT. Students in the program were asked how many courses they still needed to take to complete the program and to comment on what stands out as distinctive about their experience in the program so far. Finally, all students were asked to rate the overall quality of the program and to make suggestions for how the program could be improved in meeting the needs of students like themselves. The surveys were administered by an assistant who removed any respondent identification before they were read and summarized by CCT faculty member Carol Smith.

We received responses from 25 students currently in the CCT Program, 39 graduates of the CCT program, and 3 students who left the CCT program without graduating. The rate of return, eliminating questionnaires that were returned to us because of an incorrect or invalid address, was 41% for current students and 35% for recent graduates, a reasonable number for such surveys.[40] Not surprisingly, the rate of return was much lower (12%) for students who had left the program without completing it. Many students wrote quite lengthy and interesting responses to some of the more open-ended and probing questions. In this section, we offer a brief analysis of some of the main themes and ideas that emerged from our analysis of the questionnaires of the current students and graduates. A compilation of all questionnaires that we received is available for viewing.

a. Responses from Current Students

24 of the 25 current students who responded were enrolled in the masters program; one was in the certificate program. Students ranged from first semester students to those who would be completing the program in December 2002. Students also ranged widely in their interests: 5 were in the moral education track, 5 were in the literature and arts track, 3 were in the math, science, and technology track, 7 were in the workplace/organizational change track, and 2 were not yet sure of their area of concentration. In addition, 6 described their intended concentration as other: visual thinking, personal growth, arts: music, intercultural communication, environmental education, and critical thinking. (Note: several students listed themselves as having a combined concentration or as considering different concentrations, so the sum is greater than 25.)

Almost half of the current students had heard about the program by reading the graduate catalog, the other half from the UMB and CCT website. A few others mentioned hearing about the program from a CCT graduate. In describing what led

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[39] A clerical error meant that one survey went to a 1988 graduate.

[40] The response rate for graduates increases to a high figure of 60% if one excludes graduates for whom follow up phone calls went to an out-of-date phone number. If these graduates have moved, it could be that did not actually receive the survey sent to the address in the CCT database.

them to apply to the Program, students overwhelmingly mentioned features of the orientation of the program: its interdisciplinary nature, its flexibility, the intriguing descriptions of its courses and program philosophy, the fact that it was not just for teachers, the fit they saw between its ability to satisfy personal and career goals, etc. Several others mentioned consultations with faculty in the program and/or taking (and loving) an initial course in the program.

Students had a variety of aspirations on joining the program, but for the majority it was a highly personal choice rather than a job requirement. Many listed aspirations for personal growth or self-learning: for example to become a better thinker, to develop their own ability to create, to enhance their analytical skills. In addition, many wanted to learn how to enhance the thinking of others either so that they would become better teachers or more effective in the workplace. Indeed, most saw these two goals as inter-connected. Only three mentioned entering to meet other's expectations (for two a master's was a job requirement, for the other it was her employer's expectation)--and two of these three also stressed that personal goals and self-fulfillment were also very important to them. Most saw their aspirations as unchanged or being strengthened by being in the program. When aspirations changed it was in the direction of opening up even more, becoming even more deeply engaged with academic issues, developing even greater confidence. The general sense was that these people wanted to make a difference in the lives of others, to create nurturing environments or communities of artists, thinkers and learners, and that participating in the program strengthened their resolve and confidence in their abilities to do these things.

In describing what stands out as distinctive in the program, students typically praised the accessibility and helpfulness of the faculty, the innovative, mind-expanding courses with their use of a wide range of teaching methods, and the quality of their fellow students. The feel for what is important to these students is best captured in their own words. For example:

- "The faculty is phenomenal. I never imagined I could study with such brilliant minds and dedicated hearts as I have for the price of a public education. Peter Taylor has coaxed the soaring flights of intellectual thought to land solidly on the ground of practical application. All of this he does with a meticulous ethic. Arthur Millman and Nina Greenwald are also treasures."

- "Too many things to enumerate. Among them: the creation of community in the classroom; the exposure to novel and effective pedagogies (I am a teacher); the introduction to strategies for larger community engagement; the wide range of interests, projects of my fellow students; the unusually engaged and supportive faculty."

- "Everything. The focus on actual learning instead of memorization of information. How to process, think and make a difference in your life and the world."

- "The high caliber of students and teachers, the variety of students involved in the program, the rigor and high expectations."

- "Nina Greenwald's great teaching style and Peter Taylor's intelligence and devotion"

- "The availability of the teachers, the philosophy and emphasis on genuine learning and growth, and the sense of independence and ownership it creates for the participants through various projects and class activities. Through the variety of work I've done so far through the program,

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I've seen so much of how individual creativity and application of understanding is so vital to what we do."

- "The ability of the teachers to give us direction without stifling us. Their ability to be open minded and non-judgmental makes a student comfortable enough to pursue ideas they may not have. This helps us find ideas that we may have otherwise never given credence to."

- "The openness of the learning style. You end up doing a lot of work, but it's work you have taken upon yourself."

- "That I drive my studies. I am to a large extent free to learn and further my knowledge on issues/topics that interest me most."

- "What stands out for me is the variety of ways I learn in the CCT program. So much of the instruction is geared to teach me in meaningful ways that truly affect my learning and incorporating the information."

- "Accessibility, idealism, and enthusiasm of the faculty. Integrity, vibrancy, applicability of the discipline/curriculum, about which I have to confess I was originally skeptical. I see implications, applications ever day in my job, my workplace, my son's high school, my wife's non-profit community program, the daily news."

- "What stands out so far is the quality of the classes I have and am enrolled in. Also, I am equally as impressed with the quality of people I have met in my classes."

- "I am truly loving the people in the program--students and professors."

- "Friendliness and caliber/quality of students; flexibility of program; helpfulness of faculty."

- "The CCT program creates a space in which you can be free--to explore, to be yourself, to open your eyes, to try out new ideas…There is a definite structure to each class yet there is also an amount of freedom that has really challenged me to discover what it is I want and who I am. This is a difficult and exciting process and probably the most challenging thing I have ever done."

- "That the professors understand how best to gain knowledge, how to teach material so that we really learn it. Not just writing on the chalkboard or giving lectures, but teaching in a way we are really learning."

Students were equally enthusiastic in their rating of the overall quality of the program. 18 of the 25 students rated it as "excellent", 4 as very good or ranging from good to excellent in different aspects, and 2 as good. One first semester student simply said that it was "too soon to tell." The following chart shows that satisfaction was high for students at all phases in the program.

Overall Rating of Program by Current Students as a Function of Number of Courses Remaining to be taken (E= excellent; VG= very good; G= good)

# of remaining courses	0	1	2	3	4	5	6	7	8
Overall rating of quality of program (question 10)	E, E, E, E	E VG	E, E, E	E G to E	E, E, G	E	E, G to E, G to E	E,E,E,E, G, too soon to tell	E

Student suggestions for improving the program for other students with aspirations like themselves were as varied as the students themselves. Among the suggestions listed were: more financial backing and administrative support for the program, having courses scheduled later in the day, providing more legible photocopies of readings, including an overview of the history of the discipline of critical thinking in the core courses, infusing even more creative material throughout all the courses, having more teachers who could mentor artists, hiring a new faculty member who can replace Delores Gallo as the director of the literature and the arts track, developing a track in Critical Thinking, combining courses in curriculum/administration with CCT, broadening the applications discussed in the core courses to include non-teaching applications given that many in the program are not teachers, more frequent formally scheduled meetings with advisors, more options for course substitutions, and modifying the format of Cognitive Psychology.

b. Responses from Recent Graduates of the Program
Thirty-nine recent graduates of the program responded to our survey. Of these, 36 had been enrolled in the masters program and 3 had received certificates. Students from all the tracks of the masters program responded to the survey: 9 from the math, science, and technology track, 7 from the workplace and organization change track, 6 from the literature and the arts track, and 2 from the moral education track. In addition, 12 described their concentration as other. Of these, 4 had focused on dialogue process or reflective practice, 6 on specific teaching applications (teaching of creative thinking, foreign language instruction, teaching economics and US history, teaching of writing, and adult education), 1 on health psychology, and 1 did not specify their area of specialization.

Half of this cohort of students had first heard about the program from the graduate catalog. The remaining students each heard of the program in more idiosyncratic ways (with 2-3 students in each category): from UMB open houses, from the UMB or CCT website, from colleagues or CCT graduates, from reading about the program in a newspaper articles, or from taking a CCT course either as a student in another program or in the summer program. The main reasons for applying to the program focused on distinctive qualities of the program. These included mentioning the appeal of the interdisciplinary nature of the program and its flexibility, the appeal of the descriptions of the courses and the way it allowed students to combine intellectual interests with developing skills that could enhance their effectiveness in their current jobs. Several mentioned that they applied after taking courses in the program that they loved. Several others specifically mentioned that they wanted something related to the education area, but not a M.Ed.

Graduates of the program varied in their aspirations on joining the program. About half specifically mentioned the goal of improving their effectiveness as a teacher, although both the subjects taught and the kinds of students they worked with varied considerably. They ranged from teaching science, writing, language arts, and foreign language to working with nonconfident students, gifted students, students with learning disabilities, and adult, child, and adolescent learners. At the time of application, these future graduates also wanted to be able to assume a leadership role in schools and work on developing new curricular materials. Another large group emphasized their desire for personal growth, exploration of their own creativity, and enhancing of their knowledge and analytical skills. Still others specifically focused on enhancing their

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work in the business or corporate sector. For example, one had the desire to gain skills to foster creativity, diversity, and global perspectives in the workplace, another to gain skills to engage in corporate training and workshop design, and still another had aspirations of founding "my own company."

All these graduates reported that they experienced considerable benefit, both professionally and personally, from being in the CCT program and were able to provide rather specific evidence of this benefit (questions 7 and 8 on the survey). These included specific ways that their performance in their job had been enhanced or that they were able to move to a new job, often one that they considered an "advance" with more leadership role and potential, including teaching at the community college level. It also included getting specific awards in their work, running workshops, or publishing. Some also went on to pursue further graduate study. The deep importance, scope and diversity of these changes are best described in the graduates' own words. Hence we quote from the responses of many different students, some at great length. For example:

- "I got a job teaching….My thesis was a critical and creative Bible curriculum for the Jewish Day School and now I teach Bible (and science and math) in a Jewish Day School. Also, you could take a video of the excitement generated in my class as we do our science unit on inventors and inventions; we use the one written by Delores. It culminates in our annual invention convention, all inspired by her."

- "My background academically was in physics and computer science. Without my CCT degree I would not have been qualified nor eligible for my current job as the Director of Technology for a K-12 school system."

- "As a direct result of my participation in the CCT program I gained a new respect for my administrators and colleagues; I received an additional (alternative) certification; I moved to a different position on the local teaching staff; I received several awards (including the Kohl International Teaching Award, a Kennedy Library Award, and two Horace Mann Awards, as well as a CCT Department Award); I was tapped as a member of numerous committees at the local and state level; I served as a member of the Board of Directors for a charter school; I received innumerable consulting and teaching jobs in eight states; my writing appeared in numerous publications; I received jobs with several textbook publishers; I was a guest speaker many times in person, and on television and radio; I was instrumental in developing a CCT-based program that received national recognition and attention. CCT changed my life, and I had a great time!"

- "The CCT liberated a lot of creative energies in me, and developed a confidence in my own creativity, which enabled me to flourish as both a teacher and curriculum developer at the community college level. My thesis and other experiences…also influenced me strongly in my efforts to break new methodological and conceptual ground in my doctoral dissertation."

- "I am now head of the Math Department, advisor to the yearbook, advisor to the math club. In the school system, I am a member of the Ed Leadership Team, Math Vertical Team, and new Teacher Mentoring Team."

- "It added another dimension to the types of workshops I was offering and familiarity with the current educational jargon and thinking."

- "I have switched jobs to a pilot school that emphasizes the balance between critical and creative; I have been an ed consultant and have presented workshops locally and nationally about teaching methodology that truly accesses multiple intelligences, on creative writing as an essential tool in

the high school classroom, on empathy as an empowering ed tool, on making Shakespeare come alive, as well as several other topics."

- "The small school at which I was teaching closed. I sought work elsewhere and found employment as a teacher of critical thinking at a community college. My degree from UMass has been of direct benefit to me as it led to my becoming the coordinator for critical thinking, then to being coordinator of alternative instruction and now, to being chairperson of the Humanities Department. None of this would have happened without the UMass degree."

- "Currently I teach Critical thinking at Quincy College to ESL students. I have developed a media literacy program at the Boston Public middle school where I teach which has received recognition in Middle Ground magazine and throughout the Maryland Public schools. Currently, trying to publish a children's book and curriculum."

- "I have a new approach to life--inspired to use critical thinking in all aspects of my life and a passion for helping/teaching/leading others in how to do the same."

- "I have received 5 promotions in 4 years--have achieved VP status--I did not encounter any ceilings as a result of Educational level obtained."

- "Got hired at the Museum of Science, as a manager of an exhibit, and eventually made my way to K-8 Science Curriculum Coordinator in Brookline (and many interesting professional experiences along the way). All can be attributed, in part, to my experiences at CCT."

- "Evidence of how the CCT Program contributed to my success is that I applied to several doctoral programs, was accepted to my first choice, left my full-time job and became a full-time student. When applying to doctoral programs, I noted in my personal statement how valuable the CCT program had been and that I belied the transition to doctoral studies would be easier because of the program." (Now a 3rd-year doctoral student)

- "Well, I am no longer a teacher. I now work as a chemist at a nuclear power plant in Michigan. I believe CCT was/is helpful when doing procedure reviews and developing qualification guidelines for the tasks I must do. I also use some CCT skills for presentations that I have made. I earned department recognition for the series of "Tool Box" human performance exercises I created."

- "I have a career as an LD Specialist, I have gotten promoted as an administrator of Special Services at Suffolk University, I have been adjunct faculty in both English and Math at Quincy College, and adjunct faculty for freshman English at Suffolk University."

- "The approach that I have taken in creating innovative lesson plans began with the CCT program. This will be my eighth year teaching, and my lesson plans and my creative approach in teaching continue as a direct result of the program. There are quite a number of teachers with over 25 years of teaching experience that are learning from me. I still use concepts that were introduced to my in my CCT classes. [Mentioned earlier: Many of my colleagues use my graphic organizers and worksheets. Some were included in my synthesis paper. I am hoping with time, they will become published.]…Many of my colleagues keep forgetting that I'm a fairly new teacher. The program didn't just give me ideas to take with me, it empowered me to continue the creative process on my own. It taught me a new way to "think" about teaching." [Also mentioned earlier: This summer I applied and was accepted to work on revising the psychology I and II curriculum for the Virginia Beach City Public School system…. Only two teachers were selected to rewrite the curriculum. I have been teaching psychology and advanced placement psychology for the past seven years.] [Also mentioned successes of her students as evidence for impact of CCT: More importantly, the outstanding pass rates that I have had for the Virginia Standards of Learning (SOLs) and my

Advanced Placement scores of 100% for the past two years. Students scored well and most enjoyed my classes.]

- "I have published two papers that were written for coursework in the CCT program. I have done national and local workshops based on the theory and research developed as part of my synthesis project. Several Dialogue groups have begun as a result of these workshops, both locally and nationally. The original group, made of myself and three others, have continued to meet on a monthly basis for 5 years. I took on the role of chapter president for our state professional organization, and in my term used organizational change theory learned at CCT to plant seeds for change there. They have continued to grow…I've been asked to teach at the University level, for bachelor level students entering the profession, but have declined due to scheduling difficulties. My job has significantly changed, though informally, to include some of the tasks I considered for one avenue of exploration in my synthesis. The achievement I'm most proud of is within the agency where I work. There, those in my job title have met to Dialogue about our work, and expanded that once to the larger work group in associated titles across the state. This shook up ideas about what we had to say about the work the agency does, our roles within it, and how we serve clients. Most recently, it led to a request for cross training on the Ethical Codes, which govern our different professions. I am active in the development of this cross training, and hope to provide some Dialogue activities within it."

- "I have found that I have a remarkable ease at allowing/inviting diversity, at being able to voice my opinion without clinging dogmatically to it, to be a good witness to my own reactions and to hold on to them, not dismissing them, to be responsive (vs. reactive). My own personal growth--as a school committee member, wife, mother, and later president of my church--was spawned by the CCT courses of Critical Thinking, Philosophy, moral education. But my ability to use this knowledge evolved in the dialogue process. For me the dialogue process provided the real practicum for thought and creativity."

- "I have redesigned my curriculum around the theories of second language acquisition that I studied during my coursework and synthesis in CCT. The culminating assessments for one of my units I available online at: http://www.bigelowmiddleschool.com/library/eagan/eaganendangered.html"

- "I began to write poetry seriously. I began to promote my own creativity."

- "I will be presenting the workshops developed in my thesis to a non-profit organization. This has added a dimension to my personal and professional life. If the training proves successful, I hope to make it available to similar organizations."

- "Placement in 'doctorate' column. Team Leader-Cohasset High School. President Cohasset Teachers Association."

- "I believe that the teaching jobs I have I would not have gotten without the degree. I also apply what I have learned to my classroom on a regular basis and have received outstanding evaluations from the principal and assistant superintendent for having a creative curriculum and environment in the classroom."

- "It was a great program and applied directly to my working with gifted students. I did become a department head and just received a Mass. G.T. award this year. I served as chair of DOE Advisory Council on G.T. and am a M.A.G.E. Board member." [DOE = Departmentof Education and, we think, G.T. = gifted teaching and G.E. = gifted education]

- "During my years at UMass, I realized the quality of the learning experience there and later reaffirmed the uniqueness of the program when I spent 8 years both at MIT's Organizational

Learning Center spearheaded by Dr. Peter Senge and among 100 so-called thought leaders in the field of organizational learning and change management. I was well aware of the deep experiential quality of learning I had internalized as a result of the spirit of CCT. I became quite disillusioned in fact by the inability of the more well known, highly resourced, well paid, and famous to practice what they superficially espoused. My consulting work has been intimately shaped by my CCT experience--the only real "learning organization" I have yet to see…."

- "I was able to secure a new job and promotion at the college that I work at. Several members of the search committee cited my graduate study in Critical and Creative thinking as a key element in their interest in me as a candidate for the new position."

- "The skills I have learned impact every area of my life. When does one not need to think clearly or creatively? I am presently taking courses at another institution where I consistently receive acknowledgement for my papers and class contributions. This is directly due to my CCT experiences."

When asked in question 10 to rate the overall quality of the program, graduates of rated the overall quality of the CCT Program (at the time they were enrolled) quite enthusiastically and favorably:
- 21 of the 39 rated the program as "excellent" (or a close synonym, such as outstanding or terrific), with no reservations or qualifications.
- 7 rated the program as very good to excellent, good to excellent or very good. In general, the reasons for their variable ratings were that some courses were more inspiring than others, although all the courses were at least good.
- 5 rated the program as uniformly good
- 3 rated at least some courses in the program as excellent, but other courses only as fair or not to their liking
- 2 rated the program as fair (one with this evaluation gave no elaboration, the other noted that the program needs more financial resources and full-time faculty)

In the words of one student whose comments appeared to sum up the thoughts expressed by many students at some point in their surveys: "I have never, before or since, encountered such committed teachers. The quality of instruction as well as the course content was, in most cases, relevant across domains, and provided me with a springboard for further inquiry. I would recommend this program to anyone who wishes to expand their thinking to prepare for critical action."

A number of students gave no suggestions for improving the program other than continuing to do what we were already doing. However, most graduates offered some suggestions for ways that the program could be strengthened or improved. These included: developing a doctoral program, providing more career counseling, having greater financial support from the university that would enable having a full time staff assistant, having more full-time faculty (and women faculty), decreasing the faculty/student ratio, expanding institutional alliances with foreign language and applied linguistics, having more electives or offerings regular courses more frequently, and having distance learning opportunities. Several students wanted a greater emphasis on non-educational CCT applications; in contrast, one wanted more professors with more experience in the elementary or secondary classroom; still another wanted more courses on teaching thinking skills. Graduates also made some concrete suggestions regarding program requirements and institutional rules: for

example, make the synthesis a year rather than semester course; allow a creative final product;[41] document area of concentration on transcript; allow certificate students to participate in graduation (this was an important milestone for one student who felt left out at graduation). Finally, graduates noted the importance of tapping the expertise of alumna, for having CCT think more about how it could productively relate to the reality of MCAS, and for having periodic outreach efforts that helped maintain connections with whole schools, or. In the words of one particularly eloquent respondent:

> "I would strongly suggest that the CCT program itself (as well as its students) would be well-served by effecting some kind of periodic outreach program which would occasionally touch base with schools (or whatever institutions) which it has had a connection to in the past, as well as continuing to forge partnerships with new ones. It is virtually impossible to make a significant impact in isolation. If critical an creative thinking are not the current buzz words in a particular institution, not only won't the individual receive necessary administrative support, but the alternative current local focus will demand all of the time and energy. It is EXTREMELY effective to have an entire school moving in the same direction at the same time…"

c. Students who had left the program without completing it

For two of the three responses the reasons for withdrawal were scheduling. One needed required courses offered later than 4pm; the other needed a greater range of class times to lessen the burden of a 90 minute evening commute. The third response, from 1997, indicated a desire for more courses focused on adult learning, workplaces, and organizations.

The Program's own database shows the following reasons for withdrawal for 18 of the 36 former students, which were: interests not met (5); health (4); moved to another program (3); was not able to complete incompletes (2); work demands (2); financial (1); personal/family (1).

d. Testimonials

When the Program's future was threatened by cost-cutting measures in 1995, many students, graduates, and other associates wrote in support of the Program. These letters have been compiled and are available for viewing during the site visit. Excerpts from these testimonials are included in Appendix I.6. Some testimonials written since then can be viewed on the CCT website[42] or as notes in the CCT Community Directory. A video of testimonials from the retirement tribute for Delores Gallo will also be available during the site visit.

3. Descriptive data

a. Diversity

Table 1 (included at the end of the last section) provides enrollment data for AY 1994/95 -2002/03 in rows indicated for:

Row	Data series
10	% Female
11	% Minority (of MA residents with known ethnicity)

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[41] This is now one of the options for a synthesis project.

[42] http://omega.cc.umb.edu/~cct/alums.html#changes

Appendix I.7 summarizes the diversity of students' work and interests or aspirations that they see being furthered through CCT studies.

b. Admissions data from Institutional Research are included in sect. IC.1. Applicants' GPAs and date of birth have not been recorded in the Program's database, so trends are not available. Of the students currently active or admitted, but not yet matriculated, the average GPA is 3.18 (coefficient of variation 14%, N = 53; GPAs not available for 21 students from abroad and from non-traditional degree programs). 17 of the 53 were granted provisional admission[43] because their GPAs were less than 3.0. GREs are not required for applicants to CCT. The average year of undergraduate degree was 1992 (range 1972-2001), which corresponds to a student body mostly in its late 20s to early 40s. Appendix I.7 indicates that almost all have careers and are pursuing personal and professional advancement.

4. Appendices referred to in section IC

I.6   Extracts from Fall 1995 testimonials
[http://omega.cc.umb.edu/~cct/testimonials95.html]
I.7   Current work and interests being furthered through CCT studies
[http://omega.cc.umb.edu/~cct/studentwork02.pdf]

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[43] Students receiving provisional admission must achieve B+ or higher in their first two courses to gain full admission.

II. Self-assessment in relation to Mission, Goals and Objectives from June 2000 AQUAD plan

Section II of the self-study assesses the Program in relation to the mission, goals and objectives, and rationale laid out in CCT's June 2000 AQUAD Planning Document.[44] Before doing so we present a summary that links the self-assessment to the categories and criteria of the April 1999 Procedures and those of the November 2002 Graduate Studies.

1. Overview

In this section we provide a brief overview of the detailed self-assessment with respect to the Mission, Goals and Objectives in our June 2000 AQUAD document that is presented in the next section, and indicate how they relate to the broad guidelines for AQUAD reviews.

A. Teaching and Learning
1. Curriculum Delivery. Despite resource constraints, we have generally been able to offer sufficient required and elective courses on a regular schedule (including summers), so that full-time students could complete their Masters Degree within a two year period or shorter. (Most students study part time and take a year longer.) Likewise, with the help of internal and external grants, we have been able to develop new courses and creatively adapt our curriculum to better prepare students for their capstone synthesis project. One shortcoming or adjustment with the departure of Delores Gallo is that students interested in the area of Literature and the Arts have had to pursue those interests in the context of more generalized electives on creativity.

2. Curriculum Quality. A variety of sources of evidence point to the high quality of the curriculum offered. Among these are: the survey of past and present CCT students; the positions our graduates attain; the theses and synthesis projects; the course syllabi; the use of diverse and experienced-based teaching strategies (e.g., active, problem based, and group learning projects); the opportunities to engage in sustained reflection and receive extensive personnel attention in each course; the high student evaluations our courses generally receive; and the innovative use of technology in courses and advising.

3. Student Learning Outcomes. Our program prides itself on changing student's lives. The skills and perspectives they have acquired have prepared them to teach in new ways, assume leadership positions in their organizations, venture into new careers, gain in confidence and take risks they were fearful of prior to participating in the CCT program.[45] Evidence of this is manifested in the awards, promotions, leadership roles, publications, workshops presented, distinguished doctoral programs some have gone on to, and other professional accomplishments.

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[44] http://omega.cc.umb.edu/~cct/aqaud00.html

[45] Students indicated significantly more willingness to take risks in their professional lives after taking the Creative Thinking Course, reported in Schwartz S.H., Greenwald N., & Gallo D., Poster presented at the National Institute on the Teaching of Psychology, Tampa, Florida, 2001.

B. Professional Service and Outreach. The level of professional service and outreach has remained high in CCT despite the departure of Pat Davidson and the retirement of Delores Gallo—both academic practitioners noted for these activities. Our current outreach extends to the University, the Boston area community and schools, and to professional organizations.

C. Scholarship and other professional contributions. The core faculty in the program—Profs. Blum, Greenwald, Millman, Schwartz, Smith, and Taylor—have an impressive record of scholarship and professional accomplishments. Among our ranks is one of only three current "University Distinguished Professors" (Larry Blum). Most of the faculty has produced numerous scholarly publications in their fields as they relate to issues in Critical and/or Creative Thinking.[46] Carol Smith, Steve Schwartz and Peter Taylor have shown their ability to secure external grant funding. If the heavy administrative, teaching, service and advising load in recent years, necessitated by the lack of resources, were alleviated, increased levels of scholarship, grant activity and professional contributions could be expected.

D. Resource Use and Planning. As was detailed in sections IB and IC, the CCT program is one of the most resource-efficient graduate programs in the University—possibly the most. Much effort has gone into attempting to increase productivity to adapt to resource reductions. Program planning is thoughtful and responsive to new developments and opportunities in the field and our University. We have laid out and pursued detailed goals and objectives, and, as the section to follow, demonstrates, have taken stock of our accomplishments and adapted constructively to the changing institutional priorities. The Program does, however, need a minimal rstoration of resources in order to serve its students adequately and bring the workloads of the faculty assigned primarily to the Program down to a sustainable level on par with comparable programs.

2. Mission (presented in section IA.2)

The mission remains distinctive—no other graduate program in the United States combines critical and creative thinking—and attractive to students. Putting aside some rearrangement of sentences and paragraphs in the statement presented in sect. IA.2, let us note a few small but significant changes made in the Program's "Mission and Overview" since the June 2000 plan:

> a. "professional development" is recast as "personal and professional development" in recognition that attempts to change one's practice benefit from attention to relationships (horizontal and hierarchical), sense of self, and emotions;
> b. the mission identifies students first as agents of change, rather than by their professions—teachers, educators, and other professionals—in recognition that many students and graduates take leadership roles not captured by their formal job title or description;

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[46] Steve Schwartz, the long time chair of Psychology, has been a major administrator most of his career and has a smaller set of relevant publications.

c. the goal of "reflective practice" as a natural complement of critical and creative thinking is becoming increasingly evident in a range of Program materials, courses, requirements, and activities[47];

d. in referring to what the Program provides its students the terms "experience and support" have been added to "knowledge and tools," in recognition that the CCT Program of study works by allowing the time and extended interaction with faculty and fellow students that personal and professional development requires. In short, CCT is a Program, not a set of individual courses;

e. "ethical issues" has been added to clarify that the moral education concentration is applicable not only for educators; and

f. "organizational change" has been added to clarify that the workplace concentration is applicable not only for students in for-profit corporations, but in all kinds of organizations.

To a large degree a-d are changes in wording that correspond to long-standing characteristics of the program—CCT has always been a program about changing practice, not merely about improving thinking. Becoming more explicit about these qualities, however, gives clear recognition to the new developments, especially in workplace and organizational change, described in the sections to follow.

The extent to which CCT's impact on students matches the mission stated above is assessed in sections II.2 below. Possible adjustments to the Program's mission are discussed in section III.

3. Outcomes in Relation to Goals and Objectives from 6/00 AQUAD plan [with additions noted in brackets]

Goal A. To provide graduate students with an understanding of the processes of critical thinking and creativity, and with ways of helping others develop these processes in a variety of educational, professional, and social situations.

Objective A1. Establish forms of evaluation of student outcomes that reflect the Program's educational philosophy.

a. Document the achievement of this educational goal through a self-evaluation on the part of graduating students in which they take stock of i) ways they have translated what they have been learning into strategies, materials and interventions for use in their own settings, and ii) directions that need further development.

Self-assessment: CCT materials, courses, requirements, and activities increasingly emphasize the goal that graduates continue to experiment and take stock of what works well and what needs further development. Exit self-evaluations in this spirit have been required of M.A. graduates since Spring 2000 (Appendix II.1).

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[47] See http://omega.cc.umb.edu/~cct/CCTRs.pdf

A compilation of the responses will be available for perusal during the site visit. The second aspect of the self-assessment—directions that need further development—needs more attention and elaboration, given that this is needed to demonstrate that graduates are set to continue to experiment and take stock of what works well and what needs further development. Students about to graduate tend to concentrate on meeting the deadline for completing their syntheses, so efforts have begun to have students record items for their self-assessments (including directions for further development) throughout the period of their studies.[48] Self-assessments from the pre-capstone course in Fall 2002 indicate yield from these efforts.[49]

b. Experiment with new, "authentic" evaluations for required CCT courses that provide more useful information about the course experience to the instructor, future students, and collegial reviewers, and allow current students to take stock of what they have learned about learning. [See also objectives A3c & d concerning making changes in response to these and other course evaluations.]

Self-assessment: Various initiatives have been taken in CCT courses, including formative (during-the-course) evaluation, summative (at-the-end-of-the-course) evaluation, and other means of making useful information available about courses.

i) Formative evaluations are now used regularly, most notably in the two pre-capstone courses, CCT693 and CCT698,[50] which include Critical Incident Questionnaires, cardstorming, mid-semester self-evaluations, Strategic Personal Planning, Strategic Participatory Planning, and teacher-Research[51];

ii) Summative evaluations include Historical scans, Sense-of-place maps, Written narrative evaluations that supplement the official "bubble" sheets[52];

iii) Information is made available to future students through posting of evaluations in faculty portfolios[53]; having alums of a course invited back to be interviewed by the next class; including examples of students' assignments in course packets[54]; and placing bound compilations of past students' final projects on reserve or linked to websites.[55]

As more faculty members become comfortable with using the internet and more students have high-speed internet connections, these initiatives could be extended to all CCT courses.

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[48]   See http://omega.cc.umb.edu/~cct/competencies.html.

[49]   …/~ptaylor/698examplesJ.doc

[50]   http://omega.cc.umb.edu/~ptaylor/693-02.html and http://omega.cc.umb.edu/~ptaylor/693-02r.html, respectively.

[51]   http://omega.cc.umb.edu/~ptaylor/CITreport.html

[52]   e.g., http://omega.cc.umb.edu/~ptaylor/698eval.doc

[53]   e.g., http://omega.cc.umb.edu/~ptaylor/698-01eval.html

[54]   e.g., http://omega.cc.umb.edu/~ptaylor/698ExamplesA.doc

[55]   e.g., http://omega.cc.umb.edu/~ptaylor/698-02reports.html

c. [Added since 6/00] Compile documentation, especially theses and syntheses, that displays the range of ways graduates have become "constructive, reflective agents of change in education, work, social movements, science, [or the] creative arts."

Self-assessment: Bound copies of theses and syntheses are shelved in the office of Peter Taylor; abstracts and some full-text versions are available on-line.[56] Testimonials (Appendix I.6), news announcement,[57] and occasional reports of work of former students[58] further document the ways that graduates build on their CCT studies.

Details of theses and syntheses: Since the 1994-95 academic year 136 theses and syntheses have been produced in a wide range of areas (Appendix II.2). When compared with the years before the last review , some new areas have emerged—Diversity and Race; Facilitating Reflective Practice & Group Processes; Sport, Outdoor; some areas have increased in frequency—Gender, Women; and Teacher Ed, College-level Ed & Student Affairs; and some areas, although still popular, have declined—Elementary Education; and Middle and Secondary Education (Appendix II.3).

Since 1998 all students have undertaken syntheses, not theses, and students are beginning to explore the wider range of options, such as "Original [creative] Products (with documentation)."[59] Some of these syntheses match theses in length and quality; others are more equivalent to extended term papers.

d. [listed under goal A2 in June 2000 plan] Communicate with lapsed students to learn ways the CCT Program could serve students better; [added since 6/00] do the same for graduates and current students.

Self-assessment: Feedback from lapsed students has been sought but with limited yield. The views of graduates and current students about the Program as a whole have been elicited through surveys (as part of students' course work in CCT693) and workshop activities at community gatherings. This communication has fed into the general mode of CCT faculty experimenting and through experience and reflection evolving their tools and perspectives, more than into producing specific changes in the Program. However, one change-in-process for which students have laid the basis is supporting/requiring students to practice their ideas before graduating through internships, volunteering, workshops in their community or workplace.

i) In the recent survey to lapsed students two of the three respondents suggested alternatives to 4pm classes. Reasons for withdrawal recorded in the Program's own records do not suggest any specific changes (see sect. IC.3c),

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[56]   Abstracts of all syn/theses are available on a searchable webpage linked to the CCT website, http://omega.cc.umb.edu/~cct/abstracts-TOC.html. Since 2000 some of these have links to the full text of the corresponding syn/thesis. Because syntheses are not deposited in the University library, the office copies are lent to or sometimes copied for students and other inquirers.

[57] http://omega.cc.umb.edu/~cct/news.html

[58] http://omega.cc.umb.edu/~cct/alums.html

[59] See sect. IA.4c describing synthesis and thesis options.

ii) Examples of workshop activities at recent community gatherings are: "Design your ideal graduate program," and "What's in a name?" The former endorsed the qualities of attentive advising, intensive class interaction and space for students to pursue specific personal and professional projects. The latter played with alternatives names that would convey more about the Program. "Critical, Creative and Reflective Practice" was one suggestion, but it was recognized that long names are inevitably shortened into acronyms.

Objective A2. Attract and retain [qualified and diverse] students to reliable Program offerings.

a. Maintain new enrollments in CCT programs of study to an average of 21-25 admits per year,[60] increasing the proportion of matriculants going on to graduate.

Self-assessment: New admissions to CCT over the last two years jumped to record levels (after low years in 1997-98 and 2000-1) and the graduation numbers are returning to levels that match the desired 21-25 admits followed by historically expected matriculation and retention rates. We see no grounds for interpreting the low graduation numbers in 1999-2002 as a longterm decline in relevance or failing of the Program.

Details (see also Table 1 in sect. I)[61] The number of M.A. graduates from the Program follows directly from four factors:

i) Admission rate: The average for the years 1994-95 to 2001-2 was 24.75, with 14 in 1997-98 and 19 in 2000-1 representing the only shortfalls during that period. Admissions climbed to 33 for Fall and Spring 2001-2 and 33 (as of 12/30) for Fall and Spring 2002-3.

ii) Matriculation rate: The proportion of admits going on to matriculate has averaged 83% since 1994-95, with the average over the last 3 years of 80%. We attribute this slight decrease to the strong economy until 2000 attracting students into jobs and since 2000 to higher tuition and fees and lessened assistantship support. Future plans for the Program can allow for this increase by setting the admissions goal closer to 25 than 21.[62]

iii) Retention rate: The proportion of matriculants graduated or still active in the program has averaged 78% since 1994-95, with the average over the last 5 years of 76%. Given that some of those 76% still active may not graduate, there is a slight decrease in the proportion of matriculants going on to graduate.[63] The annual

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[60] The June 2000 plan mistated the target set by the College for the program (as communicated by Assoc. Dean/Acting Dean V. Harvey), which was 21-25 admits per year, not 21-25 matriculants.

[61] Figures have been drawn from OIRP statistical portraits and research, except where the Office recommended other sources. The portraits are based on a fall snapshot, so the Registrar's UIS database and Program's own records ("CCT db") were needed to fill in the matching picture for the spring. The CCT filemaker database is available on request.

[62] See Goal B, which concerns the establishment and recognition of planning parameters for the Program.

[63] The number of students active in the Program is always more than the figure in the Institutional Research Fall snapshots, because some students not taking courses, including those working on their

attrition rate during the years '98-'01 was high, averaging 15% (compared with the average since 1994-95 of less than 9%), but dropped back to less than 9% for 2001-2.

iv) <u>Delay in completing syntheses</u>: The backlog of students who have finished all work except the final thesis or synthesis was greatly reduced in 1996-98 (following the introduction of the synthesis as an alternative to a thesis) and was almost eliminated by summer of 1999, but built up again when the CLR for GPD was eliminated in Spring 2001. An additional section and lowered cap for the synthesis seminar, plus concerted advising beyond the seminar promises to reduce this backlog to a lower level by the end of the 2002-3 academic year.

v) <u>Graduation numbers</u>: In summary, we see no grounds for interpreting the low graduation numbers in 1999-2002 as a longterm decline in relevance or failing of the Program. Instead, it is attributable to: a lower than average admission and matriculation rate in the years '97-98, '99-00, and '00-01; a higher than average attrition rate from '98-01; and a backlog of students who have finished all courses but are still in the process of completing their syntheses that arose after the elimination of the Graduate Program Director's course load reduction. This year (Jul 02 - Jun 03) at least 23 students will graduate with an M.A., well above the average of 16 per year since 1994-95.[64]

b. Promote the new CAGS Concentration in Facilitating Reflective Practice [made possible by a partnership with the Educational Administration program] and recruit one-three students for each summer's cohort starting in 2001.[65]

    <u>Self-assessment</u>: This initiative was put on hold in Fall 2001 when the Educational Administration program moved to the Department of Leadership in Education and the Department Chair and Dean focused that program's energies on the N.C.A.T.E. Accreditation process and on forming a cohesive Department structure. Inquiries about a CAGS related to the CCT Program continue at a level that could yield 1-3 students per year if the initiative were reactivated and publicized.

c. Maintain a reliable roster of CCT courses allowing students to specialize in the four areas listed in the Program mission.

    <u>Self-assessment</u>: This objective has been achieved. See Appendix II.4.

        <u>Details</u>: i) The roster of required courses has had a fixed semester and day of offering for a number of years. The roster of electives has settled into a stable pattern of once/year or once/every three semesters that students can plan on.[66] The only deviations that occur in electives are when faculty members go on leave or have

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capstone syntheses, submit their program fee forms after the snapshot is taken. During the period under review the average is 25% higher.

[64] When counting graduates Institutional Research uses the fiscal year (July-June). If the year September-August is used, thirteen students graduated in 2001-2 and at least 17 will graduate in 2002-3.

[65] http://omega.cc.umb.edu/~cct/cags.html

[66] http://omega.cc.umb.edu/~cct/planner.html

been granted course load reductions, or when the courses are cancelled. Moral education electives have not been offered as consistently as electives in other areas, but over the last five years the demand for this area has been significantly lower than in earlier years of CCT.

ii) With the addition of electives taught through Continuing Education, each area of concentration is now represented in at least two electives:
Literature and Arts (CCT612, 630); Moral Education and Ethical Issues (CCT620, 627); Mathematics, Science, and Technology (CCT640, 650, 652); and Workplace and Organizational Change (CCT616, 618). (Moral Ed. electives are offered every third semester; the other are offered each year.) To make up the third elective students take out-of-area or out-of-program electives or transfer in credits taken before matriculation.

iii) In recent years, the area of Literature and Arts has broadened from a focus on literature to a range of creative arts and invention.

iv) The two subspecialties listed in area of mathematics, science, and technology -- science in society, and environment, science, and society -- are coming into shape with a more specific focus and title given to CCT640 (now Environment, Science, and Society) and CCT 645 (now Biology in Society) and the approval of CCT619, Biomedical Ethics, which also serves the area of Moral Education and Ethical Issues.

d. Maintain course enrollments that ensure that no more than one course per year is cancelled for lack of sufficient enrollment.
Self-assessment: With increased enrollment in the Program, enrollment in electives is up this year. However, the picture since June 2000 has been mixed. CCT electives have been designed to serve students from other programs, but changes over time have reduced or eliminated requirements that M.Ed. students take CCT courses. Continued adjustment of the electives offered will be needed to secure the necessary enrollment.
i) The average class size for CCT courses was 17 for Fall '02 (vs. 14.8 for Fall '99 and 15.6 for Fall '96), in part because this year the number of electives offered during the fall and spring semesters has been reduced to 6 (not counting two sections of CCT650, Mathematics Thinking Skills, now administered by the Teacher Ed. Program).
ii) In previous years Moral Education was cancelled twice (Spring '00 & '01) due to insufficient enrollment and since June 2000 four elective courses taught during the fall and spring semesters have ended up with fewer than 8 students, which could well have led to cancellation.

iii) Starting Fall 2002, the cap for the required Synthesis seminar (CCT694) has been reduced to 6 (in line with M.Ed. courses for supervision of trainee teachers; see A2.a.iv for rationale) and so lower numbers in this course compared with other courses are no longer an issue.

e. Review and streamline the published course offerings so the Graduate Bulletin reflects closely what is available on a regular basis.
Self-assessment: This was accomplished in time for 2002-4 bulletin. One course that has not been taught in recent years, CCT655, Metacognition, was retained because Prof. Schwartz hopes to teach it again in the near future.

f. Institutionalize the weekly "CCT in Practice" series of presentations so, in particular, new students become acquainted with the range of areas addressed by members of the wider CCT community.
Self-assessment: The weekly "CCT in Practice" series of presentations has not been institutionalized, but alternatives have been developed with the same objective in mind. This series began in 1999-2000 and became a one-credit special topics course in Fall 2000. However, because the series and subsequent course was handled as an overload by the GPD it was discontinued when the GPD position and course load reduction was eliminated. To acquaint students with the range of areas addressed by members of the wider CCT community the Program established a start-of-semester New Student Orientation/Community Gathering and continued the late-semester Open House (initiated in 1999-2000). At the Orientation and Open House events, students, graduates, and faculty lead mini-workshops to "share and experience ways to put critical and creative thinking into practice in schools, workplaces, and other settings."[67] In addition, the Program produces a directory of the CCT community (including all graduates) with information on their interests and occupation where known (Attachment C); makes available the abstracts of all theses and syntheses on the CCT website,[68] and sends out regular email compilations of news from the CCT commuity and beyond.[69]

[g. See Objective A1d.]

h. [Added since 6/00] Maintain a system of advising current and prospective students that attends both to general issues about CCT studies and students' particular concerns.

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[67] http://omega.cc.umb.edu/~cct/openhouse.html; http://omega.cc.umb.edu/~cct/orientation.html
[68] http://omega.cc.umb.edu/~cct/abstracts-TOC.html
[69] http://omega.cc.umb.edu/~cct/news.html

Objective A2. Attract and retain qualified and diverse students to reliable Program offerings.

> Self-assessment: Advising for the CCT Program can be characterized as available, informative, and attentive to students' particular personal concerns. It makes effective use of computers and other technologies (see A2i below), but the advising workload is heavy for the Faculty Advisor and would be eased by restoration of the Course Load reduction granted to Graduate Program Directors of most UMass Boston graduate programs.
>> For details of the advising system, see sect. IA.5

i. [Added since 6/00] Make effective use of computers and other technologies to recruit and advise students.

> Self-assessment: CCT has been an "early adopter" with respect to this objective, most notably in a well-developed website, the on-line Student Handbook, email advising, and regular email news bulletins to the wider CCT community.[70] In turn, such uses of the internet free up time for necessary phone and face-to-face advising around the particular concerns of applicants and students (see Objective h above).
>
> > The CCT website has become a key route by which prospective students become aware of the program (along with word of mouth) and email the primary means of initial contact. The website and on-line Student Handbook are becoming the first place prospective and current students consult for up-to-date information about the Program.

j. [Added since 6/00] Maintain or increase the i) quality and ii) diversity of students admitted to the Program.

> Self-assessment: We believe that the quality of students is high, but need to explore innovative ways to demonstrate this to others. The minority percentage of CCT students in Fall 2002, 14.6%, is slightly lower than the means for GCOE programs, 16.2%, and UMass Boston graduate programs as a whole, 15.8%.[71] The diversity of students' occupations and interests is, as stated in CCT's mission statement, is broad (see Appendix I.7).
>
> > i) Quality. The percentage of applicants admitted continues to run near 100%, but a high figure is to be expected because prospective applicants not suited to the Program select themselves out after consulting with CCT advisors, reviewing the range of materials on the CCT website, attending a course as a non-matriculated student, or beginning to draft their application essay. After all, CCT is a unique graduate program that does not provide students with a readily-recognized label or a license, so students have to be self-motivated.
> >
> > GREs or other test scores are not required for admission to CCT. Undergraduate GPAs are noted, but most applicants have many years of life and work experience since their undergraduate studies. Admission of applicants with a GPA under 3.0 is always provisional on the student earning grades of B+ or higher in the first two courses, which seems worth the risk given that most students have had considerable work and life experience sicne their undergraduate days.[72]

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[70] Respectively: http://omega.cc.umb.edu/~cct; http://omega.cc.umb.edu/~cct/handbook.html or http://omega.cc.umb.edu/~cct/handbook.pdf; email address: cct@umb.edu; and http://omega.cc.umb.edu/~cct/news.html

[71] The CCT figure would be higher if non-resident and foreign CCT students were included.

[72] Of the students currently active or admitted, but not yet matriculated, the average GPA is 3.18 (coeficient of variation 14%, N = 53; GPAs not available for 21 students from abroad and from non-traditional degree programs). 17 of the 53 were granted provisional admission because their GPAs were

Applicants' essays are the key factor in the admissions process. To write their essay applicants need to reflect on their experience and interests and do their homework on what CCT offers so that they can explain how studies in CCT will further their intellectual, artistic, professional or personal development. The resulting essays are usually informative and moving, and provide a springboard into a program that emphasizes reflective practice. ii) Diversity. The CCT faculty is committed to increasing the social diversity of the Program's students, but has not made a systematic plan for achieving this (see self-assessment of Goal G4). There is substantial age diversity[73] and diversity of backgrounds and interests (see Appendix I.7 in section IC).

Objective A3. Develop [and revise] Program offerings in emerging areas of social relevance, faculty specialization, [added since 6/00] and use of educational technology.
a. Develop and offer regularly courses that involve critical and creative thinking in the areas of i) science in its social context/ science, technology and values, including environmental studies; ii) dialogue and collaboration in personal and organizational change (through Continuing Education courses), and iii) invention (seeded by a National Collegiate Inventors and Innovators Alliance grant).
Self-assessment: Four new courses have been piloted and four existing courses revised in the three areas. The number of concentrators and non-CCT students interested in CCT science and environment courses is increasing, but further recruitment is neeeded if courses in that area are to be offered regularly and achieve adequate enrollment.

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less than 3.0. GREs are not required for applicants to CCT because the faculty is committed to working with non-standard students who bring diverse life experiences and motivations to their studies.
[73] The average year of undergraduate degree was 1992 (range 1972-2001), which corresponds to a student body mostly in its late 20s to early 40s. Some younger students and students in their 50s, 60s, and even 70s study in CCT.

i) <u>Science in its social context</u>. A special topics course, "New Directions in Science Education," offered in Summer 2000, served Teacher Ed. students completing their science requirement as well as CCT students. Formal approval of such a course was put on hold when a search was conducted in 2000-1 for a Teacher Ed. faculty member to teach secondary science education. With the appointment of Hannah Sevian to this position, the Teacher Ed. program instituted its own science courses and began to address the need for more science M.Ed. concentrators. To attract students to CCT science courses from across the university, the general purpose titles and descriptions for CCT640 and 645 were changed (effective spring 2003) and now reflect more specific foci in critical thinking about environmental and biological sciences, respectively. This change should make the course themes apparent to non-CCT students reviewing the course schedule book. There is a growing emphasis in these courses on Problem-based learning (one of the "New Directions in Science Education"), guided by Nina Greenwald publications and expertise in this area.[74]

In addition to these changes, Janet Farrell Smith and Diane Paul have been recruited to the CCT faculty. Janet Farrell Smith's Biomedical Ethics course, piloted as a special topics course in Summer 2000, has now been approved as CCT619, and will continue to be offered through Continuing Education during the summer. Diane Paul's science and society courses (offered through Political Science and Public Policy) are now advertized in CCT's publicity material. The CCT faculty has agreed to support petitions to substitute Paul's Science and Public Policy courses for the required Cognitive Science course (Psych 650) from CCT students specializing in Science in Society, but this option has not yet been taken up by any students.

ii) <u>Dialogue and collaboration in personal and organizational change</u>. Two special topics courses were piloted through Continuing Education, "Constructivist Listening" (Winter 2001)[75] and "CCT in the Workplace" (Summer 2001). The latter has now been formally approved as CCT618, "Creative Thinking, Collaboration and Organizational Change," but Constructivist Listening was viewed by Graduate Studies as a workshop more than a course. In the future the proposal may be resubmitted with stronger arguments for the course's emphasis on learning through practice. In the meantime, CCT616, The Dialogue Process, was revised to include additional approaches to dialogue and is now titled Dialogue Processes.

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[74] Greenwald, N. (2000). "Learning from Problems." <u>The Science Teacher</u> 67(April): 28-32 and ____ (2000). <u>Science in Progress: Challenges in Problem-based Learning for Secondary Schools</u>, Camp Hill, PA: Pennsylvania Society for Biomedical Research.

[75] http://omega.cc.umb.edu/~cct/courses.html#697w01

iii) <u>Invention</u>. Funds from an NCIIA grant were used to offer CCT612, Seminar in Creative Thinking, with an Invention and Innovation theme starting in Spring 2002,[76] and to revise CCT602, Creative Thinking, to prepare students for CCT612. Nina Greenwald stepped in when co-PI Delores Gallo remained on medical leave. Plans are underway for grant renewal application and the course will continue as long as funding for Nina Greenwald can be found to teach it.

b. Establish two targeted certificate programs, "Science, Education, and Society, " and "Dialogue and Collaboration in Organizational Change," to be offered in collaboration with Continuing Education and a CCT outreach unit (see E1 below).

<u>Self-assessment</u>: CCT publicity material now highlights the possibility for students to focus on one or the other of these two themes within the one set of requirements for the CCT certificate,[77] but marketing of these options has been limited.

Plans to package these certificate options and advertize them in Continuing Education bulletins were put on hold when NCATE accreditation became the priority in GCOE and distance education became the focus of new initiatives in Continuing Education.

c. Review the Program requirements and content of required courses to complement and adjust new directions in CCT offerings.

<u>Self-assessment</u>: Few changes to Program requirements have been needed but more changes have been made in required courses to complement and adjust new directions in CCT offerings (Appendix II.5).

<u>Detail</u>: i) Program requirements now allow more electives to be taken by students seeking the CCT graduate certificate;[78] slight changes have been made to the names of concentrations,[79] and support will be given to petitions to substitute Paul's Science and Public Policy courses for the required Cognitive Science course (Psych 650) from CCT students specializing in Science in Society.[80] ii) Since Spring '99 the required core course CCT601, Critical Thinking, has included activities concerning Science in its social context and various kinds of listening in order to entertain and evaluate alternative ideas. The pre-capstone courses, CCT693 and CCT698, now include units on strategic planning and action research, and activities involving listening, group process, and collaboration. Sharing and peer support are now built into CCT698 and the capstone synthesis seminar, CCT694. Units on invention

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[76] http://omega.cc.umb.edu/~cct/612-02.pdf

[77]   http://omega.cc.umb.edu/~cct/SEScert.html, http://omega.cc.umb.edu/~cct/DCOCcert.html. In spring 2002, changes were approved to allow more electives to be taken by students seeking the CCT graduate certificate.

[78] See self-assessment of objective A3a.

[79] See self-assessment of Mission, items e & f, and objectives A2c and A3a.

[80] See self-assessment of objective A3a, item ii.

have been added to CCT602, Creative Thinking, to prepare students for CCT612.

iii) A proposal is under development to introduce a course in "research and writing for reflective practice" early in the curriculum, making it more likely that students in the precapstone course would be ready to put their ideas into practice. This course would be an alternate for the required Philosophy or Psychology courses, thus reducing the pressure to allow over-capacity enrollments in these courses.

d.   [Added since 6/00] Review and revise the content of courses to keep them up to date with current scholarship and practice.

> Self-assessment: All courses have been reviewed and revised in significant ways (Appendix II.5).

e. [Added since 6/00] Make educationally justified and sustainable choices about when and how to integrate computers and other technologies into the teaching of CCT courses and requirements for students.[81]

> Self-assessment: CCT courses emphasize the value of intensive face-to-face interaction and dialogue around written work. Distance learning and transmission of content through web platforms does not seem conducive of this kind of teaching/learning, but internet communication that maximizes the use of class time for interaction is. All but one of the required CCT courses now makes use of a course listserv or discussion board. Syllabi for almost all courses can be viewed on line,[82] and many of these on-line syllabi now take the form of websites with extensive links to course-related material and handouts.[83]
>
> Since Fall 2002 new students in the Program are expected to achieve a number of "Research and Study Competencies," which include efficient computer use, before undertaking the required pre-capstone and capstone courses.[84]

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[81] This formulation of the goal for using educational technologies is elaborated in Taylor, P. (2002), "Guidelines about specific situations and specific ways in which specific technologies are of significant pedagogical benefit," http://omega.cc.umb.edu/~ptaylor/etguidelines.pdf

[82] See links at the end of each course on http://omega.cc.umb.edu/~cct/courses.html

[83] E.g., http://omega.cc.umb.edu/~ptaylor/693-02.html

[84] http://omega.cc.umb.edu/~cct/competencies.html

Goal B. To establish planning parameters that allow CCT faculty to determine the best use of their experience and energies and [added since 6/00] adjust operations to work within those parameters.[85]

Objective B1. Set or settle parameters for CCT's role in the GCOE
> Self-assessment: The specific parameters identified in the objectives a-h (below), e.g., level of course offerings, have not been explicitly negotiated and remain unsettled. The implicit or informally expressed expectations have been for CCT to serve other GCOE programs[86] and, when resource reductions led to lower numbers in CCT, to accept the new level of resources. The targeted level of production within the Program (admissions, enrollments, graduations, etc.) has not been lowered; given the reduction in resources for CCT since the last review, these expectations translate to a mandate for more than doubling the Program's productivity (production/unit resource). Over the period under review, the GCOE has focused on accreditation as a teacher preparation unit; the resulting mission has a tighter view of who is an educator than in CCT's mission.
>> i) The parameters within which CCT was to operate were not explicitly negotiated when the GCOE became the Program's home in 1996 and this remains the case. At various times GCOE decision makers have expressed expectations and proposals relevant to CCT's future in the GCOE. The CCT faculty has responded constructively to each new development,[87] but the institutional location, mission, and even survival of CCT have remained in question.
>> ii) Informal communications indicate that GCOE decision makers want(ed) CCT less as a degree-granting Program with a distinctive mission of its own (as given in the June 2000 AQUAD plan), than as a provider of courses for other GCOE graduate programs, especially the Teacher Education program.   Given the persistent strain on resources for Teacher Education and the push for national accreditation of the University's teacher preparation programs, it is not surprising that resource requests for the CCT Program have been given a low priority in the GCOE.
>> iii) During the last two years reductions in resources for UMass Boston as a whole have been severe, but CCT's share has decreased disproportionately.[88] Sustaining the Program and serving its students has been possible only with injection of funds

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[85] Goals B and C and several other objectives in A2 and E reflect ongoing adjustment to the new institutional location in GCOE and to the reduction of resources since the previous Program Review in 1994-95 (see section II.1, Rationale).

[86] Ironically, this perspective seems to derive from a virtue of the CCT Program, namely, that its courses have always served non-CCT students to a degree unmatched by any other UMass Boston program; see row 16 in Table 1 in sect. I.

[87]   A summary of such developments and responses during 2000-01 can be viewed at http://omega.cc.umb.edu/~ptaylor/portfolio01sIN.html. A more extensive summary can be provided if requested.

[88] See footnote 134

from outside GCOE and at significant personal cost to key CCT faculty members Taylor and Greenwald (as was the case for Delores Gallo in the years around the move of CCT's home to GCOE). The plans for the future of the Program in sect. III include, therefore, restoration of some resources and, equally importantly, an explicit framework that accommodates the interdisciplinary and inter-college make-up of the Program.

For objectives a-h that follow we do not assess our efforts to "set or settle" the individual parameters, but instead provide our best estimates of their de facto current values. "[*see III]" indicates that the Plans for the Future in section III propose a change.

a. CCT's Mission [in relation to the GCOE]
Self-assessment: CCT's mission of mid-career personal and professional development for a wide range of educators and other practitioners is not evident in the GCOE mission.[89] The same is true for the name, constitution, and mission of the Department of Curriculum and Instruction to which the CCT Program has been assigned within the GCOE.[*see III]

b. Level of CCT course offerings
Self-assessment: During the fall and spring semesters, current funding from Curriculum & Instruction, Philosophy, and Psychology allow CCT to offer the seven required CCT courses,[90] six electives taught by CCT faculty and part-timers, and two sections of CCT650, Mathematics Thinking Skills, now arranged by the Teacher Ed. program to meet M.Ed. students' math. methods requirements. Winter and summer sessions through Continuing Education add a second section of CCT601, Critical Thinking, and three electives.

c. Continuation of two full-time lines with primary responsibility to CCT, and replacement when faculty are on leave. (This is particularly important for CCT's mission and for the realization of this plan.)
Self-assessment: Although the CCT Program moved into the GCOE with two full-time lines, it has operated since 1996-97 with an average of 1.35 GCOE faculty members assigned to the Program. The difference has arisen when those faculty members have retired or gone on leave without a regular faculty member being assigned to replace them.[*see III] CCT faculty regularly teaching in the Program provide six additional sections.[91]

d. Expected student numbers in the CCT Program and courses

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[89] The mission of the GCOE has become almost synonymous with the mission of the Professional Education Unit (PEU) that secured NCATE accreditation in 2002. CCT, along with everal other GCOE graduate programs, are not part of the PEU.
[90] The large core courses, until this year team taught, now have a single instructor. Two or three sections of the synthesis seminar can be offered if enrollment per section is around six students.
[91] Only their required CCT courses are covered when the CAS faculty members are on leave.

Self-assessment: An average admission of 23 students per year (or 18.5 matriculants) produces capacity enrollments for required courses provided the rates of matriculation and retention of admitted students stay at their present levels (see Appendices II.6 & 7, which are based on a spreadsheet[92] developed to assist in enrollment management).[93] (One exception is that CCT602, Creative Thinking, which had to be taught by a single instructor for the first time in Fall 2002, warrants a second section [*see III].)
The enrollment for electives is expected to be lower than for required courses, but courses can be cancelled if the enrollment falls below 8.[94]

e. Emphasis on the synthesis option, not the thesis, for the M.A. capstone
Self-assessment: All CCT students are currently directed to take the synthesis option because the demands of thesis advising cannot be met under current faculty levels. In fact, in recognition of the demands of synthesis advising, a cap of 6 was instituted for the synthesis seminar starting in Fall 2002.

f. Cross-college institutional arrangements to recognize the CAS faculty who work in CCT, secure continuing CAS contributions, and include those faculty in promotion and other reviews for CCT faculty in GCOE
Self-assessment: No formal cross-college institutional arrangements have been made, but two CCT faculty members were on the first-level committee for Peter Taylor's pre-tenure and tenure review. Consultation in decision making regarding CCT is de facto and de jure not part of the governance structures formalized in the GCOE for NCATE accreditation.[*see III].

g. Support for part-time faculty
Self-assessment: In a typical year only one CCT section (apart from CCT650) is taught by a part-timer during the fall and spring semesters,[95] who is paid at the minimum rate for part-timers employed by GCOE. Stipends for part-times to advise synthesis students or independent studies are no longer available.[*seeIII]

h. Administrative support, to facilitate smooth day-to-day running of the Program and outreach to create conduits that bring in new students.
Self-assessment: Support is not adequate in these regards.
The individual Program Director (GPD) positions were eliminated in the GCOE starting January 2001, but in practice program administration remains the responsibility of the former GPDs. Course load reductions (CLR), sharing of workload among the

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[92] http://omega.cc.umb.edu/~cct/flowthru.xls
[93] The admission rate of 26 over the last 3 years would be expected to yield at or above capacity enrollments for required courses, which is now the case (Fall '02).
[94]   The same admission rate of 23 translates to an average enrollment in electives of 12 (Appendix II.6), but these enrollments are less predictable than for required courses because of the significant but variable fraction of non-CCT students served by these courses.
[95] There were two part-time sections in 2001-2.

different program faculty members, and staff, secretarial and graduate administrative assistance vary from program to program. In the case of CCT, there is no CLR for the former GPD and no other full-time faculty members in GCOE to share the workload. The graduate assistantships to help run the Program during the academic year and summer and to support the intensive interaction in the core courses were reduced last year ('01-02) and eliminated this year ('02-03).[96] No staff member or graduate assistant has been assigned to work with the former GPD so as to develop familiarity with the particular administrative and outreach/recruitment needs of the Program.[*seeIII]

Objective B2. Achieve recognition of CCT's mission and the other planning parameters by other GCOE Programs and Departments.

a. Circulate the CCT Mission statement, with an appendix on the planning parameters once they are set/settled

Self-assessment: The mission statement was distributed at the Fall 2000 orientation session (see Objective b below) and at a subsequent Departmental meeting on program missions, but this di dnot reuslt in CCT's mission being worked into the GCOE mission or the planning parameters being settled (see Goal B1).

b. Invite GCOE leaders and other faculty to briefings or forums on CCT

Self-assessment: An orientation session was held early in Fall 2000, at which the new Dean, Clara Jennings, and a dozen faculty (in addition to the CCT presenters) were present. This has not been repeated for the interim Dean.

c. [Added since 6/00] Explore possibilities and make the case for support at UMass Boston of CCT's mission outside the GCOE.

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[96] A teaching assistant has been funded this year from one faculty member's grant and another faculty member's salary payments from Continuing Education.

Self-assessment: Many possibilities for institutional support outside the GCOE have been explored, most notably, involving a CCT role in General Education, Science, Technology and Values,[97] and Education for Sustainability[98] (see Sect. III on Future Plans). Data has been assembled that indicate the high productivity (production/unit resource) of the CCT Program and demonstrate that shortfalls in production (admissions, enrollments, graduations, etc.) correlate with the absence of a second full-time faculty member assigned to the Program and time before a new faculty member could be expected to establish the presence required to recruit students (see Sect. IB & C).

Changes or restoration of institutional support have, however, been delayed and await the outcome of this current AQUAD review. The effort required to explore possibilities and the institutional "friction" from seeking institutional support outside the GCOE have, unfortunately, reduced the capacity of the CCT faculty to achieve many of the other objectives under Goals C-G in this plan, especially those under Goal G involving the ongoing development of the program .

Objective B3. [Added since 6/00] Institute measures for recruitment, advising, and other administrative tasks (such as preparing for program reviews) that preserve time and attention for instructional needs and scholarship.

Self-assessment: A considerable investment has been made since the summer of 1999 to compensate for the absence of a second full-time faculty member assigned to the Program. Initiatives taken may be divided into three main areas: a) Enhancing advising and office procedures; b) Creating more "horizontal" exchanges and support within and beyond the community of CCT students and alums; and c) Engaging CCT faculty outside GCOE and adjuncts in development of the program and in creating a wider impact. However, there are limits to the streamlining of the Program administration given a number of features of CCT: the absence of a standard conduit for students into the Program; the diverse interests and concerns of those admitted; the intensive seminar/ workshop/ activity format of CCT courses; and the syn/thesis requirement for completing the Program.

Details: In the Fall of 1998, after 20 months with only one full-time faculty member in CCT, Peter Taylor's appointment promised to make possible a sharing of the burden of administration, recruitment, advising, and thesis/synthesis supervision as well as outreach and program development projects. Unfortunately, by the end of his first year at UMass Boston the Program Director, Delores Gallo, had reduced her time on campus for health reasons and then began what has turned out to be a three-year medical leave ending in her retirement in spring of 2002. By a concerted effort she had cleared the backlog of students needing only to complete their theses and synthesis projects, but she was behind in record-keeping and other administrative projects. Taylor's response to the challenge of becoming program director (GPD) under these circumstances (and as a junior faculty member) involved—in addition to

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[97] http://omega.cc.umb.edu/~stv
[98] http://omega.cc.umb.edu/~cct/efsga.html

the routine duties of this position—the three sets of initiatives below. Further adjustments and efficiencies have been necessitated since January 2001 so that Taylor could continue to fulfill the responsibilities of the GPD position without the official title or Course Load Reduction.

a. Enhancing advising and office procedures

Advising -- Student handbook[99] ;Revived CCT website[100]; Publicity brochures and bookmarks[101]; Regularized roster of course offerings[102]; Handbook on synthesis projects[103]; Guidelines re: incompletes and passage through program requirements[104]; Exit self-assessment[105]

Administration -- Enhanced and updated program database[106]; Office operations manual; Application review procedures and tracking system; Working bees to sort through CCT materials in storage

b. Creating more "horizontal" exchanges and support within and beyond the community of CCT students and alums

CCT in Practice (weekly presentations in Fall '00 and '01 and full-day open houses); Bi-weekly email newsletter[107]; CCT Community directory[108]; Recruitment drives[109]; Links through ASCD Teaching Thinking network and other allied organizations[110]; Orientation and Community gathering (Fall '01 onwards)[111]

c. Engaging CCT faculty outside GCOE and adjuncts in development of the program and in creating a wider impact

Monthly meetings focusing on interests other than business (Spr. 99, Fall 01); Preparation of talking points and AQUAD plan ('99-00); Planning for outreach unit;[112] CCT in the Workplace summer courses and new certificate Options in conjunction with Continuing Education; Thinktank for community college teachers of critical thinking (Fall00-Sp02); Thinking for Change Fieldbook (Sum 01-)[113]; Preparation for initiative on diversity in CCT (Sp 01-)

Goal C. To contribute to increased cross-program collaboration in the GCOE.

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[99] http://omega.cc.umb.edu/~cct/handbook.html and http://omega.cc.umb.edu/~cct/handbook.pdf

[100]   http://omega.cc.umb.edu/~cct

[101] http://omega.cc.umb.edu/~cct/brochure.doc

[102] http://omega.cc.umb.edu/~cct/courses.html and http://omega.cc.umb.edu/~cct/planner.html

[103] http://omega.cc.umb.edu/~cct/synthguidelines.doc

[104] http://omega.cc.umb.edu/~cct/policies.html

[105] http://omega.cc.umb.edu/~cct/selfassess.html

[106] See appendix II.8

[107] http://omega.cc.umb.edu/~cct/news.html The email news became less regular in Fall 2002.

[108] See attachment C

[109] In particular, through contacts made at a CCT booth at the annual meetings of the Massachusetts Teachers Association in 2001 and 2002.

[110] http://omega.cc.umb.edu/~cct/allied.html

[111] http://omega.cc.umb.edu/~cct/orientation.html

[112] http://omega.cc.umb.edu/~cct/tfcprospectus.html

[113] http://omega.cc.umb.edu/~cct/tfcfb-TOC.html

Objective C1. Promote and foster the new CAGS Concentration in Facilitating Reflective Practice made possible by a partnership with the Educational Administration program.
> Self-assessment: This specific initiative was put on hold in Fall 2001 (see self-assessment of Objective A2a), but some prospective CAGS students enrolled for winter and summer CCT courses offered through Continuing Education. These people and current CCT students have also been served through connections CCT has developed with members and regular activities hosted by the Boston Facilitators Roundtable.

Objective C2. Establish a forum for cooperation among the mid-career professional development-oriented MA programs, in particular, contributing ideas and referring students to each others' teacher-research and research preparation courses.
> Self-assessment: Although syllabi from different programs were compiled, the forum was not established.
>> The focus of the GCOE on NCATE accreditation and the formalizing of the College into Departments meant the time was not right for cross-departmental cooperation across GCOE programs.

Objective C3. Play a significant role in a strong and distinctive GCOE contribution to educating math. and science educators, a role that combines CCT's emphases on conceptual change in students and understanding science in its social context (see A3ai).
> Self-assessment: CCT courses provided essential components for the Science Portfolio submitted in Fall 2000 for approval as part of the NCATE accreditation process. Since that time, however, GCOE curriculum planning has reduced the role for CCT courses. Changes in Department of Education regulations have favored a more conservative approach to Science and Math. Education, in which courses to be offered by Departments in the College of Arts and Sciences will provide the "content" required for teachers to become licensed.

Objective C4. Contribute to the evolution of standard GCOE course evaluations and streamlining of procedures for passing on the results in a form that faculty can use to develop their teaching (see A1b).
> Self-assessment: In 1999 CCT piloted and then disseminated a spreadsheet that allowed efficient summary of numerical and written responses on official GCOE evaluations (Appendix II.9). To prepare for NCATE accreditation a new bubble sheet evaluation form was originated and then revised. Certain rephrasings of questions were suggested by CCT faculty, but the spreadsheet summary has not been officially adopted by the GCOE committee charged with instituting the new evaluation system.

Objective C5. Promote CCT outreach efforts (see E below) through joint publicity and shared sponsorship where appropriate with other GCOE centers and projects.
> Self-assessment: Discussions were held with the Massachusetts Field Center for Teaching and Learning, but no jointly sponsored events took place before the Center moved to UMass Dartmouth in summer 2002. Feelers have also been put out regarding interests shared with NERCHE (New England Research Center for Higher Education).

Objective C6. [Added since 6/00] Contribute to the NCATE accreditation of the Professional Education Unit (PEU), centered in the GCOE.

> Self-assessment: CCT faculty members contributed in many ways: preparing the Science portfolio; serving on the Educational Technology task force[114] and as a fellow for the MEET educational technology grant[115]; reworking course syllabi to incorporate the "thoughtful and responsible practitioners" objectives and rubrics required for CCT courses to serve students in PEU programs[116]; and chairing the College Academic Affairs and Curriculum Committee as it developed and routinized procedures for reviewing NCATE-appropriate course proposals.[117] The CCT faculty is committed to offering CCT courses that serve students in the Education programs as well as CCT students.

Goal D. To contribute to increased collaboration with and contributions to other units within the University

Objective D1. CCT faculty offer two presentations per year on teaching innovation through the Center for Improvement of Teaching [added since 6/00] and other fora.

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[114] http://omega.cc.umb.edu/~cct/edtech.html

[115] http://omega.cc.umb.edu/~ptaylor/etguidelines.pdf

[116] e.g., http://omega.cc.umb.edu/~cct/645proposal.doc

[117] See http://omega.cc.umb.edu/~cct/AACC.html

Goal D. To contribute to increased collaboration with and contributions to other units within the University

Self-assessment: Since Spring 2000, CCT faculty members have led three workshops for the Center for Improvement of Teaching and made three presentations on the use of educational technology at UMass Boston.[118] Peter Taylor co-chaired the organizing committee for the two-day site visit which led to a Ford Foundation grant to develop a New England Center for Inclusive Teaching and Arthur Millman was a member of that committee.

Objective D2. CCT faculty members take an active role in supporting further development of the undergraduate Program in Science, Technology and Values.
Self-assessment: This work has begun in earnest this academic year.
A concerted effort is being made during this and the next academic year under Diane Paul's leadership to recruit undergraduates to the STV course of study. Peter Taylor was assigned by the Acting Provost to assist her and initiated a website showing updated lists of courses, advisors, and affiliated faculty.[119] This website was used to produce STV publicity material for pre-registration, but it is too early to assess whether STV students will increase. A number of CCT electives are included on the course list to be taken by upper-level undergraduates with the instructor's permission. CCT faculty members Millman and Greenwald are affiliated with the STV Program, and Diane Paul is now affiliated with the CCT faculty.

Objective D3. Enlist faculty from within the University to teach CCT courses, advise students, and participate in other Program activities to replace faculty members previously teaching for CCT, but no longer doing so.
Self-assessment: In a time of declining resources it has not been possible to recruit additional faculty to teach the regular fall and spring CCT courses, but a number of other connections have been made that may eventually bear fruit.
A number of UMass Boston faculty members have participated as guest lecturers in the "CCT in Practice" series and some other CCT courses. Janet Farrell Smith from Philosophy is now a regular teacher of two CCT summer courses offered through Continuing Education. The upper-level science-in-society courses taught by Diane Paul from Political Science are now included with CCT course listings. Emmett Schaefer, a regular part-time faculty member from Sociology, piloted the Constructivist Listening course and helped establish the "diversity awareness" component of CCT618, Creative Thinking, Collaboration, and Organizational Change, both courses offered through Continuing Education. Michael Novak from the College of Management collaborated with Nina Greenwald on the visit in Spring 2002 of fashion designer and UMB alum, Joseph Aboud.

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[118] Workshops for the Center for Improvement of Teaching: "Critical Incidents in Teaching," April and October 2000; "New Directions in Fostering Critical Thinking," April 2002. Presentations on educational technology: "Teaching with evolving tools: A lot about learning, a little about technology," Panel member, "Teaching for Transformation" conference, January 2002; "Guidelines about specific
situations and specific ways in which specific technologies are of significant pedagogical benefit," Teaching with Media Workshop, Instructional Technology Center, April 2002 and Graduate College of Education, December 2002.
[119] http://omega.cc.umb.edu/~stv

Further discussions about shared interests in creativity in the workplace took place later that semester.

Objective D4. [Added since 6/00] CCT faculty members take an active role in new developments in Environmental and Science Education at UMass Boston.

Self-assessment: CCT faculty members have contributed to many of the recent developments in environmental and science education at UMass Boston.

Peter Taylor has a leadership role in recent efforts to infuse sustainability concerns through the Curriculum.[120] CCT faculty members have been key participants in the 1999 proposal to establish a Math. and Science track in the M.Ed. track program and this year's successful NSF "GK12" proposal to involve science students in middle school classrooms in the Neponset watershed. They have also played a role in the successful COSEE (coastal and ocean environmental education) proposal and the Dean of Science's committee on science education, and consulted on a new proposal to establish an Environmental Science track in the M.Ed. program (or an MAT for this subject).

In Fall 2001 Peter Taylor piloted a version of a CCT course focusing on quantitative reasoning with a view to having experienced teachers who took the course go on to teach an equivalent course for the general Education program. As it turned out, the two students so qualified were already over-committed in their current jobs, but this possibility can be entertained when scheduling permits this course to be taught again.

Objective D5. [Added since 6/00] Collaborate in the projects and initiatives of other UMB centers and projects.

Self-assessment: CCT faculty members have responded to many requests for leading workshops.

In recent years Nina Greenwald has provided program development assistance and led a workshop for the Beacon Student Leadership Program; led workshops for the Donahue Institute on the application of CCT to diverse workplace issues and problems, and a workshop for the Beacon Thinktank's response to student concerns in the aftermath of 9/11/01, as did also Peter Taylor and Allyn Bradford. Steve Schwartz is also involved in the Beacon Student Leadership Program and collaboration with the Donahue Institute. Peter Taylor also led a workshop for the McNair minority fellows program.

Goal E. To undertake outreach [beyond UMB] that builds on the professional strengths of the part-time faculty and growing network of graduates, as well as the regular faculty.

Objective E1. Prepare a prospectus for an outreach unit by the summer of 2000, detailing the planning premises, mission, initial projects, governance and processes of evaluation and ongoing development, resources and funding plans, and integration with the CCT Program, GCOE, Continuing Education, and the University.

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[120] http://omega.cc.umb.edu/~cct/efsga.html. See, in particular, the vision and mission statements and listing of courses at http://omega.cc.umb.edu/~cct/efscourses.html.

Goal E. To undertake outreach that builds on the professional strengths of the part-time faculty and growing network of graduates, as well as the regular faculty.

Self-assessment: The prospectus was prepared and activities commenced (see below). The unit has not yet sought any formal status.[121]

Objective E2. Involve the outreach unit in the two targeted certificate programs (see A3b).

Self-assessment: Part-timer CCT faculty members involved in initiating the outreach unit, Allyn Bradford and Nina Greenwald, have taught in the summer courses that correspond to the two themes advertized for the CCT certificate, "Science, Education, and Society," and "Dialogue and Collaboration in Organizational Change." Bradford continues to teach in the summer and winter sessions. Greenwald has been a half-time faculty member since Fall 2000.

Objective E3. Add at least one project or activity under the [outreach] unit each year (added since 6/00) that serves communities beyond UMass Boston.

Self-assessment: Three main projects have been undertaken: the Thinktank for Community College Critical Thinking Teachers, workshops to foster critical thinking about science in its social context, and a series of professional development activities in schools during AY 2001-2.

i) The Thinktank for Community College Critical Thinking Teachers has been main activity under the outreach unit. This was established in Fall 2000 to support the dedicated work of community college teachers as they face the challenges of serving students from diverse backgrounds—students who are often under-prepared for college education or lacking confidence in their abilities to thrive in that setting. The Thinktank has taken a break during the preparation of this AQUAD review, but should reconvene in Spring 2003.

ii) CCT and the Outreach unit have co-hosted six two-day workshops for teachers and college faculty designed to foster critical thinking about science in its social context.[122] Plans are underway to launch an annual "Boston Summer Workshops on Science and Social Change."

iii) During 2001-02 CCT also hosted a number of professional development activities in schools based on contacts made at the annual meetings of the Massachusetts Teachers Association.

Objective E4. Expand the network of CCT graduates involved in the unit each year.

Self-assessment: The Thinktank involved CCT graduates and the Program's email news goes out to increasing numbers of graduates, but the outreach unit primarily depends on the founding regular and part-time faculty who initiated it.

Objective E5. Maintain a monthly schedule for the Changing Life working group [and make other contributions to] teaching critical thinking about the life and environmental sciences.

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[121] http://omega.cc.umb.edu/~cct/tfcprospectus.html

[122] • "New Directions in Science Education and Society" -- four 2-day workshops offered through Continuing Education in July 2000

• "Helping each other to foster critical thinking about biology and society" and "...about environment, science, and society" -- intensive weekend workshops for college-level educators in July 2000 and 2001, respectively

Goal E. To undertake outreach that builds on the professional strengths of the part-time faculty and growing network of graduates, as well as the regular faculty.

> Self-assessment: This working group had monthly meetings in Spring 1999, but mutated into the summer workshops held in 2001 and 2002 (see under goal E3). Two one-day workshops were also organized by the Program.[123] Nina Greenwald and Peter Taylor played leading roles in extended professional development workshops and courses out of state and internationally as well as locally.[124]

Objective E6. [Added since 6/00] Undertake outreach and community service through other channels.

> Self-assessment: Larry Blum has undertaken extensive outreach and community service in the area of anti-racist education, including courses in the Cambridge school district, acting as a consultant to Facing History and Ourselves, and serving on the advisory board of the Kenan Ethics Institute at Duke University. The work of regular and part-time faculty members, Allyn Bradford, Ben Schwendener, and Carol Smith also takes them into local, national, and international settings. (See Curriculum Vitae for details.)

Goal F. To support CCT faculty and students in research on and publication of their distinctive contributions to the fields of critical and creative thinking.

Objective F1. Establish a website of techniques and illustrative cases that CCT faculty members have developed in courses and other forums (see A2f & E5).

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[123]• "Science-In-Society, Society-In-Science" -- a one-day event in July 1999 (see evaluation at http://omega.cc.umb.edu/~cct/workshop99eval.html)
• Pre-conference workshop on "Teaching History, Philosophy, and Social Studies of Biology" before the July 2001 meetings of the International Society for History, Philosophy, and Social Studies of Biology.
[124] See their curriculum vitae for details.

Goal F. To support CCT faculty and students in research on and publication of their distinctive contributions to the fields of critical and creative thinking.

Self-assessment: With support of a Public Service Grant and a senior fellowship to Peter Taylor in the Instructional Technology Center, techniques and illustrative cases that CCT faculty members have developed in courses and other forums are now available on the web.[125]

Objective F2. Prepare a prospectus for publication of a fieldbook of these techniques and cases by summer of 2002.
Self-assessment: The initial compilation of techniques and illustrative cases (see F1 above) is available online as a prototype for a Thinking *for* Change Fieldbook. More entries are being sought so that themes can be identified and used in writing the prospectus.

Objective F3. Establish a process to identify students prepared to undertake thesis research, and establish advising relationships to support them in completing their theses.
Self-assessment: The process has not been established because faculty numbers are not sufficient to advise theses at this time.

Objective F4. [Added since 6/00] Arrange discussions of the works in progress of individual CCT faculty members and graduates and draw wider attention to the resulting publications.
Self-assessment: The "CCT in Practice" seminar series (now discontinued), the Program open houses, and some non-business CCT faculty meetings have allowed discussions of works in progress. The emailed CCT news bulletins and faculty profiles on the CCT website[126] draw some attention to CCT-related publications. Both parts of this objective, however, have had to take a backseat to serving the Program's current students.

Goal G. To evaluate and continue developing the Program.

Objective G1. Constitute an advisory board by the summer of 2000, which would meet twice a year to give advice to both CCT and its outreach unit, help keep CCT faculty abreast of new developments, and monitor the support and resources CCT and the outreach unit provide each other.
Self-assessment: Constitution of an advisory board was put on hold until questions about the institutional location, mission, and survival of the Program are resolved.

Objective G2. Review and revise this planning document at the first meeting of the Advisory Board and then on an annual basis.
Self-assessment: Not undertaken; see Objective G1 above.

Objective G3. Arrange facilitated, participatory planning sessions so as to enhance the participation and investment of CCT faculty in the resulting plans.

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[125] This can be viewed on line at http://omega.cc.umb.edu/~cct/tfcfb-TOC.html or downloaded as a pdf document, http://omega.cc.umb.edu/~cct/tfcfb.pdf. A copy will be available for perusal during the site visit.

[126] http://omega.cc.umb.edu/~cct/faculty.html

Self-assessment: No such sessions have been undertaken with CCT faculty. Students in CCT693, Evaluation of Educational Change, in Spring 2002 learned about Action Research through a project in which they addressed the challenges of "Enhancing diversity in and through the CCT Program" and "Shaping CCT's future in a time of growing constraints." Given the unresolved questions about the institutional location, mission, and survival of the Program, the students' Action Research did not, unfortunately, generate longlasting "participation and investment of CCT faculty in the resulting plans."

Objective G4. Develop during the 2001-2 academic year and begin to implement a strategic plan for increasing the social diversity of CCT students and for CCT courses to address the issues of increasing diversity.

Self-assessment: In summer 2001 a CCT student, Michael Ruf, produced a "Diversity portfolio," which surveys key ideas, references, and other resources for the proposed strategic planning.[127] Unfortunately, the energies of CCT faculty since that time have been devoted to determining the Program's future so the diversity planning has not progressed further. The Action Research of CCT693 students (see Objective G3 above) brought attention to the "hidden diversity" among CCT students' class/family backgrounds and life histories/aspirations. Students' work on hidden diversity and on diversity awareness as part , together with Ruf's portfolio and the recent publications of CCT faculty member Larry Blum and associate Emmett Schaefer,[128] should provide valuable insights when the diversity planning does get underway.

Objective G5. Prepare a plan by summer of 2002 for establishing CCT as a place to train and support activists, concerned scientists, and other citizens in community-based research.

Self-assessment: This plan has not yet been developed, but Peter Taylor is connected with the national Community Research Network and discussions have recently begun with faculty members in the College of Public and Community Service who have experience and interest in this area.

Objective G6. Use evaluations (see A1a&b) and feedback from lapsed students (see A1d) to revise and improve CCT courses and other operations; [added since 6/00] ditto for graduates and current students.

Self-assessment: CCT faculty evaluate their courses and the Program as a whole in ways that exemplify the goal of reflective practice (see self-assessment for Objective A1).

Objective G7. Arrange a survey of CCT graduates each AQUAD cycle to document ways their CCT experience has influenced their career development.

Self-assessment: This survey was undertaken and its results are given in section IC.2 of this report.

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[127] http://omega.cc.umb.edu/~cct/diversityplan.html
[128]   Blum, L. (2001). I'm Not a Racist But...: The Moral Quandry of Race. Ithaca, NY: Cornell University Press; Thompson, C., E. Schaefer and H. Brod (2003). Just Living: White Men Challenging Racism. Durham, NC:Duke University Press.

<u>Note on the "Strategy for Assessing Progress towards Goals and Objectives" outlined in the June 2000 AQUAD Plan.</u>

The strategy for assessing progress towards these goals and objectives [was to be] addressed by the Program and course evaluations and other contributions to the ongoing development of the Program. In particular, the Advisory Board [was to] take stock of whether the specified targets have been met and to review the self-evaluations. If there [were] major discrepancies, the Board [would] insist that the Program convene[d] a facilitated, participatory planning session to analyze the situation and develop concrete responses.

<u>Self-assessment</u>: Because the Advisory Board was not constituted and no strategic planning sessions were convened (see G1-G3 above), the CCT faculty has kept the AQUAD plan in mind, but progress towards the goals and objectives laid out in the plan has not been systematically assessed until this self-study.

4. Appendices and List of Attachments referred to in section II

II.1 Exit self-assessment form[129] [http://omega.cc.umb.edu/~cct/selfassess.html]
II.2 Thesis and synthesis topics, 1994/5-2002[130]
[http://omega.cc.umb.edu/~cct/synthtopics02.pdf]
II.3 Subject areas for Theses and Syntheses, Current review vs. Earlier years
[http://omega.cc.umb.edu/~cct/synthcomp02.pdf]
II.4 Course planning guide [http://omega.cc.umb.edu/~cct/planner.html]
II.5 Major Revisions to Course Content and Process
[http://omega.cc.umb.edu/~cct/courserevise.pdf]
II.6 Flow-through from target admissions level of 23
[http://omega.cc.umb.edu/~cct/flow23.pdf]
II.7 Flow-through from admissions levels (average last 3 years)
[http://omega.cc.umb.edu/~cct/flow02.pdf]
II.8 Sample page of CCT database
II.9 Sample spreadsheet summary of GCOE evaluation
[http://omega.cc.umb.edu/~ptaylor/sampleeval.pdf]
II.10 List of websites referred to in sections I and II
[http://omega.cc.umb.edu/~cct/aquad02webnotes.html]

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[129] A compilation of the exit self-assessments will be available for perusal during the site visit.
[130] Copies of theses and syntheses will be available for perusal during the site visit.

III. Plans for the Future

If the CCT faculty were asked today to prepare an AQUAD planning document for the next seven-year cycle, its mission, goals, and objectives could build strongly on the framework laid out in the June 2000 plan and updated in section IA. Continuing along these lines would be justified since, to repeat what we stated in the Preamble, CCT's mission remains distinctive and attracts and engages students from locally and from abroad. The Program enables them to advance their personal and professional lives; testimonials from many graduates point to CCT providing a deeply meaningful, life-changing experience. Since the last review the Program has averaged 16 M.A.'s awarded per year—135 in total—and, after some lower years, graduation numbers in 2002-03 will move back up above this figure. CCT serves its students very economically, offers courses that serve more students outside the program than any other at UMass Boston, contributes to the University and wider communities, provides models of ways to adapt and develop in response to new challenges and opportunities, and produces graduates who are constructive, reflective agents of change in education, work, social movements, science, and creative arts.

Some crucial details of this new planning document would, however, depend on the current AQUAD review leading to institutional support being secured for the Program's future. Support refers, of course, to resources, but not to resources alone. To allow the CCT faculty to determine the best use of their wide experience, but not-unlimited energies, the parameters under which the Program is expected to operate need to be settled. As part of our self-study we generated a check-list (appendix III.1) of institutional arrangements that would stabilize resources and governance so the multi-departmental, cross-college character of programs like CCT could be seen as a virtue, not as a source of recurrent problems for University administrators. The items on the list come under four headings: explicit agreement from contributing units, arrangements for primary faculty members to take leave, commitment to consultation and systematic review, and the Provost as guarantor of the above.

We spent time on the issue of general institutional conditions because we believe that no single department could preserve the distinctive interdisciplinary character of CCT, nor are resources likely to be made available to any one department to replace the current contributions from the departments that would be left out. We included the check-list as an appendix so we could focus this future plans section on different options for CCT's institutional home and support, their common features and their specific virtues and implications. This is not, however, to downplay the importance of the desired institutional arrangements given in the appendix. None of the options would eliminate the uncertainty of recent years for CCT without attention to the overall institutional conditions; conversely, securing institutional support to sustain CCT as an innovative and productive graduate program would be far less challenging if such general conditions could be agreed on.

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1. Features common to the range of options to be analyzed in this section

Before analyzing the different options, we identify features common to them:

The Program would continue to offer courses that serve students outside CCT, especially from Education graduate programs, but would also promote its electives to students from the sciences interested in education (broadly construed) and students from other fields interested in workplace and organizational change. (The expected level of outside students in CCT courses is around 10 FTEs in each of the fall and spring semesters,[131] supplemented by winter and summer Continuing Education offerings).

With an admissions target of 21-25 students per year, we would plan to offer the required courses in section sizes that maintain the intensive teacher-student interaction and writing requirements of these courses and to offer electives in each of the current areas of specialization (see listing in sect. IA.4e).[132]

Given the strength of the CCT faculty in the area of "science, sustainability, and social change," sufficient electives would be offered to attract graduate students to UMass Boston specifically to work in this area, even if some enrollments were lower than average at first. Selected electives would be designed to prepare CCT students who are experienced teachers to offer equivalent sections in the undergraduate General Education program (under supervision of CCT faculty members).

The resource needs to carry out these plans are minimal:
• Two faculty members be assigned full-time to the Program, one of whom serves as the Program Director (or in an equivalent position). The GPD would be given a course load reduction to administer the Program and lead its development in directions laid out in the AQUAD plan for the next review period.[133] (In light of the restrictions on filling the lines of faculty who took early retirement in 2002 and budget cuts, the second position could be non-tenure track until recent high student numbers proved to be continuing and reliable);
• Continuation of the .5 faculty teaching load contributions from the Philosophy and Psychology departments and Philosophy's contribution of Larry Blum's teaching of one section every third semester;
• Graduate assistantship adding up to 20 hours/week (10 hours/week during summer) to assist Program faculty undertake research, teach courses, arrange co-curricular activities, advise prospective and current students, prepare Program funding proposals, annual reports, and reviews;
• Any sections by part-timers be offered through Continuing Education to save funds and to get instructors paid at Continuing Education rates; and

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[131] See row 16 of Table 1 in sect. IB

[132] See Appendix II.7 for analysis of flow through of students with current admission rates under historical rates of retention and time to graduate. Some of the required courses are above the enrollment conducive the intensive class interaction, writing and project work. An additional alternate foundation course, "Research and Writing for Reflective Practice," is being submitted for approval this spring. This would reduce the overcapacity enrollments in Foundations of Philosophical Thought and Cognitive Psychology, as well as provide earlier preparation for undertaking the research and writing required in the synthesis.

[133] The first of these full-time positions is currently occupied by Peter Taylor. Nina Greenwald is the obvious candidate for the second position. Given her long experience in CCT, she could direct the Program when Peter takes leave.

• Program controls allocation of funds distributed back from Continuing Education.

At this level of resources CCT would remain one of the most cost-effective graduate programs—if not the most economical—in terms of faculty/staff/GA/ material resources per FTE.[134] The Program could also see its way to pursuing the important goals and objectives that were not met under the uncertainty of the last few years, especially, attending to diversity issues, working with an advisory board, and expanding the outreach unit.

2. Specific options for CCT's future: virtues and implications

A range of options have been proposed for CCT's future. Exploration of the different options is ongoing; the full implications of the various options will become more clear other as other instutional developments at UMass Boston unfold. The review committee is not expected to be able to evaluate the details in the course of its site visit, but the analysis to follow should stimulate useful lines of questioning. Moreover, the analysis is intended to show the capacity for planning and flexibility of the CCT faculty as it seeks a stable institutional location for the Program.

Home Unit: GCOE, Leadership in Education Department
Student recruitment and Courses/requirements adjusted to focus Program on: Mid-career professional development of educators, broadly construed, and other agents of organizational change

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[134] No official figures are available for resources per student FTE, but our own calculations, which combine regular and part-time faculty, staff, and graduate assistants, show CCT operating in 2002-3 on 22% fewer resources per FTE than the Teacher Education program, which is widely recognized as being stretched for resources. If the second CCT position were restored to a full-time basis, the Program would still be operating on 5% fewer resources than Teacher Ed. The spreadsheet showing the assumptions used for these unofficial calculations is available on request.

Simpler figures to calculate would be number of regular faculty per FTE or number of faculty assigned primarily to the program per FTE. CCT remains cost-effective on these bases, but a more accurate comparison requires attention to the other human and material resources used in the different programs. The variability among graduate programs in resources per FTE suggests that achieving a more equitable distribution of resources on an FTE basis would be a hotly contested endeavor. Nevertheless, we think as a matter of fairness to tuition and fee-paying CCT students, some movement in that direction is warranted.

Pros:
• Home of Program remains in GCOE.
• CCT can be seen as an educational leadership program, provided one accepts that:
a) education takes place in many government, corporate, non-profit, and informal settings; and
b) many CCT graduates take leadership roles that are not official administrative ones as they "address the needs of their schools, workplaces, and communities, adapt and contribute to social changes, and collaborate with others to these ends" (from CCT's mission).
• CCT would become one of four approximately equal size programs in Leadership in Education. Such a setting could be reasonably expected to recognize and support CCT's distinctive mission. (Moreover, Curriculum and Instruction would then consist of programs focused on the mission of teacher education and certification.)
• Associate chairs have been established in this department with course load reductions given in recognition of the responsibilities formerly undertaken by Program directors.
• CCT as a Program shares with the Education doctoral programs a focus on scholarly research and the challenge of getting students to complete an original piece of research and writing. CCT research and writing courses could serve doctoral students well at the stage of formulating dissertation proposals.
• The Educational Administration Master's program emphasizes school change action research which matches CCT's emphasis on reflective practice and, for a significant fraction of CCT students, on organizational development.
• The overlap in the two items above opens the possibility of faculty from CCT covering for required research and writing courses in the existing Leadership in Education programs and vice versa when the regular instructors take leave.
• Closer co-ordination possible for CCT and High Ed. Admin programs' outreach efforts in Higher Education, especially at the Community-college level.

Cons:
• CCT might remain vulnerable as a program given the priority on teacher preparation and urban education likely to persist in GCOE funding and hiring decisions.

Other implications:
• Members of the Department need to become acquainted and comfortable with CCT as a multi-departmental, cross-college program in educational leadership.
• To retain input from non-GCOE faculty members governance and consultation arrangements would be needed that acknowledge cross-college make-up of Program (see sect. III.1).
• CCT electives offered under a GCOE department might not count as non-education content courses under proposed new Department of Education regulations, although the exact implementation of these regulations is still unclear.

Home Unit: GCOE, Curriculum & Instruction Department
Student recruitment and Courses/requirements adjusted to focus Program on: Teacher preparation and upgrade of licensure for teachers
Pros: Home of Program remains in existing location

Cons:
• With a focus on teacher preparation it would be harder to maintain the number and diversity of practitioners in the Program. (Even the teachers in the Program cite that diversity as a virtue of CCT studies.)
• The current mission of CCT and expertise of its faculty range beyond classroom teaching.
• CCT would remain marginal as a small program in a department whose major priority is the Teacher Ed. program, which forms the centerpiece of the mission of the GCOE and the accrediated Professional Education Unit. In that setting CCT would continue to be vulnerable in governance and funding decisions.

Other implications:
• A distinctive identity and perhaps new name would be needed for CCT as an M.A. for teachers since the Teacher Ed. program already has track C for teachers wanting an M.Ed. to upgrade their licensure.
• CCT electives offered under a GCOE department might not count as non-education content courses under proposed new Department of Education regulations, although the exact implementation of these regulations is still unclear.
• To retain input from non-GCOE faculty members governance and consultation arrangements would be needed that acknowledge cross-college make-up of Program (see sect. III.1).
• Flexibility needed in administration of M.Ed. track C if CCT courses are to count as substitutes for certain requirements (CCT627 for Ed672; CCT693 for Ed 698; CCT698 for Ed698; CCT670 for Ed610).

Home Unit: The new College of Liberal Arts in a possible new Program/Center for Science, Sustainability and Social Change
Student recruitment and Courses/requirements adjusted to focus Program on: a combination of organizational change and reflective practice, life and environmental sciences in their social context, and science and environmental education (construed broadly to extend from improving the teaching of scientific concepts and methods to involving citizens in community-based research)
Pros: • All CCT faculty could be within one College (unless Psychology moves to the new College of Sciences) • Closer co-operation in the context of the possible new Program/Center with the undergraduate Science, Technology and Values and Environmental Studies programs, furthering the University's initiatives in Education for Sustainability • The overlap with the STV and ES programs opens the possibility of faculty from CCT covering for courses in those programs and vice versa when the regular instructors take leave.
Cons: • Might be difficult to find home departments—unless this is not required—for the new Program/Center, for CCT, and for the primary CCT faculty.
Other implications: • Governance and consultation arrangements would be needed that acknowledge cross-departmental make-up of CCT and the new Program (see sect. III.1). • The CCT Program, possible renamed, would need to maintain a distinct identity under the possible Program/Center beyond Science and Sustainability if it is to maintain its appeal to a diverse pool of mid-career applicants and accomodate the expertise of all of CCT's longstanding faculty members.

Home Unit: The new College of Sciences in a possible new Program/Center for Science, Sustainability and Social Change
Student recruitment and Courses/requirements adjusted to focus Program on: a combination of organizational change and reflective practice, life and environmental sciences in their social context, and science and environmental education (construed broadly to extend from improving the teaching of scientific concepts and methods to involving citizens in community-based research)
Pros: • Closer co-operation in the context of the possible new Program/Center with the undergraduate Science, Technology and Values and Environmental Studies programs, furthering the University's initiatives in Education for Sustainability • This College will be the locus of several new science and environmental education initiatives, to which CCT faculty members are already contributing. Science education is one of the six areas of strength identified in recent strategic planning under the current Dean of Sciences. • Interdisciplinary research, seminars, collaborations, and course development in environmental science and science education are part of the "Vision for the Sciences" articulated in that same strategic planning. • CCT electives could be cross-listed in Science departments to ensure they count as non-education content courses for M.Ed. students under new Department of Education requirements. • The training of the one current faculty member assigned to CCT, Peter Taylor, is in science and he already has adjunct status in the Environmental, Coastal and Ocean Sciences (ECOS) department. • CCT research and writing courses could cover the writing course requirement for ECOS graduate students. • CCT could contribute to the College of Sciences' part of the General Education program if selected CCT electives are designed to prepare CCT students who are experienced teachers to offer equivalent sections in General Education (under supervision of CCT faculty members).
Cons: • Science departments traditionally focus of generating knowledge, not on changing practice. • Lack of fit with the creativity, moral education, and literature and arts aspects of CCT might lead to these being phased out.
Other implications: • CCT would remain a cross-college graduate program, albeit within two colleges that will co-operate closely in many spheres. Governance and consultation arrangements would be needed that acknowledge cross-college make-up of CCT and the new Program (see sect. III.1). • The CCT Program, possible renamed, would need to maintain a distinct identity under the possible Program/Center beyond Science and Sustainability if it is to maintain its appeal to a diverse pool of mid-career applicants, accommodate the expertise of all of CCT's longstanding faculty members, and draw in new faculty input from the liberal arts.

Home Unit: Proposed new School of Policy Studies

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Student recruitment and Courses/requirements adjusted to focus Program on: Organizational Change and Reflective Practice
Pros: • The Program would reside within a structure designed specifically as a home for interdisciplinary programs and drawing on faculty from all colleges. In that setting it should be easier to establish governance and consultation arrangements that acknowledge cross-college make-up of the Program (see sect. III.1). • CCT faculty members Janet Farrell-Smith and Diane Paul are currently members of the Public Policy Ph.D. program, both focusing on biomedical issues. • Environmental policy has been proposed as a theme for the Public Policy program and possibly the School as a whole.
Cons: • Lack of fit with the creativity and literature and arts aspects of CCT might lead to these being phased out. • Prospective applicants who are teachers might be less likely to see their connection with program listed under the umbrella of Policy Studies.
Other implications: • CCT would need to be renamed to make obvious its connection with Policy and practice. (Might the School be better named "Policy and Practice"?) • Faculty in the School would need to become acquainted and comfortable with CCT as a graduate program in policy and practice. • The Program would need to maintain a distinct identity under the proposed School if it is to maintain its appeal to a diverse pool of mid-career applicants and accomodate the expertise of all of CCT's longstanding faculty members.

3. Conclusion

We believe that there is an important positive place in the University's educational mission for the kind of mid-career personal and professional development pursued by CCT Masters students. It is staffed by experienced, tenured faculty members and the level of student satisfaction is high. The high standards and productivity of the Program warrant restoration of at least a minimal set of resources and institutional changes to accommodate the particularities of CCT as an interdisciplinary, inter-college Program. The investments we, as members of the CCT faculty, have made in the Program's growth and development make it an irreplacable base for our continued productivity and innovation as a teachers, researchers, and colleagues within and beyond the UMass Boston community, and for learning how to be critical, creative, reflective agents of organizational and social change.

4. Appendix referred to in Sect. III

III.1 General conditions for sustaining a small interdisciplinary graduate program like CCT whose faculty span departments and colleges

Appendix III.1
General conditions for sustaining a small interdisciplinary graduate program like CCT whose faculty span departments and colleges

Multi-departmental and multi-college graduate programs exist because there are valuable educational endeavors that cannot be pursued by a faculty that lies fully within one department in one college. Such programs achieve remarkable things at UMass Boston, but, in order to hold these programs together, some (many?) of their faculty members have to take on inequitable workloads, spend time petitioning a changing cast of administrators for resources, and postpone taking leave due to them. The arrangements outlined below do not require new resources or radical changes in governance, but would render programs like CCT less vulnerable to falling through the cracks, especially in times of scarce resources. They would also provide valuable flexibility as such programs seek to secure adequate, stable institutional support in these times of great institutional flux and budgetary constraints.

a. Explicit agreement from contributing units that address:
>   Assignment of faculty members to the Program and commitments of other resources;
>   Responsibilities, course load reduction, and stipend for the Program Director (or equivalent position);
>   Arrangements to cover i) required courses and ii) electives when the regular instructor from the unit takes leave;
>   Recognition of the Program's AQUAD plan;
>   Regular (not ad hoc) Procedures for representation of Program faculty members on the relevant departmental committees for the promotion/review and merit evaluations of their Program colleagues.

b. Arrangements for primary faculty members to take leave so that the Program can still run smoothly and the workload is not shifted onto the other primary faculty members. This could be achieved by explicit agreement from departments and colleges of primary faculty members (those assigned 50-100% to the Program) that:
>   When any such faculty members take i) sabbatical, research or unpaid leave or ii) medical or family leave, funding is provided by, respectively, i) the department/college or ii) the Provost (see d. below) to ensure that there is at least one faculty member assigned 100% to the Program to serve as Program Director and that experienced faculty members can be assigned to teach required courses regularly taught by the leave-taker.

c. Commitment to consultation and systematic review, which would include explicit agreement from the Program's home department, college, and/or other unit that:
>   Major changes in the direction of a program will arise only from scheduled and systematic Program reviews that allow problems to be identified and faculty to respond before any new arrangements or proposals for Program elimination are implemented;
>   Between reviews, programs should be allowed to follow their AQUAD plans; and
>   Program faculty will be consulted in any interim, belt-tightening measures.

d. Provost as guarantor of a-c, ensuring that:
>   Contributing units not be allowed to disproportionately reduce resources in ways that result in unsustainable workloads for the remaining faculty members and/or jeopardize the Program's survival; and
>   Funds will be provided to the departments and colleges of primary faculty members so that experienced faculty members can assume the roles in the Program of those faculty members when on medical or family leave (see b. above).