GRADUATE PROGRAM IN CRITICAL AND CREATIVE THINKING (CCT)
SELF-STUDY FOR 2010-11 AQUAD REVIEW

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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 thirty years in response to the personal interests and professional needs of the students in the Program and in response to the changing make-up 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. To convey the flavor of CCT as an evolving entity, we start with historical background for the Program as a whole and set the scene for the current AQUAD review.

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.[1]
The founding faculty—Bob Swartz, Steve Schwartz, and Delores Gallo[2]—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 had been hired in Philosophy and Psychology, respectively, with a 50% commitment to CCT. Theses and capstone syntheses completed 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 scheduled review in 1994-95, dialogue had emerged as an exciting new theme, which led to the addition of the fourth specialty area, which came to be called Workplace and

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[1] Cited in the 1994 self-study.
[2] Bob Swartz left the Program in the late 1980s. He and Delores Gallo retired from the University in 2002. Steve Schwartz retired in 2005.

Organizational Change. The original emphasis on critical and creative 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 practice.

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, especially in the biomedical sciences. Student interests in facilitating organizational change have grown substantially over the last decade, 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!

The 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 reduce the resources for the Program. The Program's home was moved from the College of Arts and Sciences (CAS) to the Graduate College of Education (GCE; now College of Education and Human Development), with a concomitant 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 continue to offer courses that had been taken by many students in education programs. The 50% faculty teaching load contributions from the Philosophy and Psychology departments continued, as did Philosophy's contribution of Larry Blum's teaching of one section every third or fourth semester. Resources within the GCE turned out to be less stable. There was a delay in replacing a retiring full-time CCT faculty member during the 1990s; an extended medical leave of Delores Gallo then her early retirement in 2002 (with no replacement search authorized); prioritizing of GCE resources towards teacher preparation and national accreditation; and a GCE policy from January 2001 making Departmental Chairs the nominal Graduate Program Directors (GPDs), thus eliminating the course load reductions and stipends for the faculty who continued to fulfill all the responsibilities of GPD. All these circumstances notwithstanding, CCT admissions returned to high levels before the last AQUAD review in 2002-3.

Ongoing adjustment to changing circumstances was reflected in the goals and objectives spelled out in the Program's June 2000 AQUAD planning document, which were assessed in great detail in the 2002-3 self-study. By reconfiguring CCT's operations and achieving greater efficiencies the Program 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 GCE, coordinating with other GCE 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 2002-3 self-study report and supporting material documented an impressive level of

planning, innovation and accomplishment, especially given the reduced resources available to the Program. The Review Committee "found that the CCT Program is providing high quality and innovative education to non-traditional students who are unlikely to find substitute degree programs at UMB" and recommended "that a relatively small amount of resources be invested in this program to ensure that UMB [could] continue to provide the leadership in innovative multi- and inter-disciplinary pedagogy represented by this Program." The interim GCE Dean and the Graduate Dean formally recognized the strengths that the Committee had found. However, the GCE Dean saw the Program as outside the College mission and discontinued a 50% lecturer position that had been funded (first by the Provost, then by the College) for the previous three years to compensate for Delores Gallo's absence. Deciding that only one faculty member dedicated full-time to the Program was insufficient, the Graduate Dean halted admissions to the M.A. Program. The Program initiated a partnership with the Division of Corporate, Continuing, and Distance Education (CCDE, now University College) to promote the 15-credit CCT Graduate Certificate and develop sufficient online sections so that the Certificate could be earned fully online. Initially the electives offered through CCDE allowed students to pursue a focus on "Creative Thinking at Work," but a second focus on "Science in a Changing World" was planned.

Admissions to the M.A. Program were re-opened in 2004 after the new GCE Dean appointed Nina Greenwald as a sabbatical replacement for Peter Taylor in 2004-5, giving her special responsibilities for rebuilding student numbers and program promotion. Her position was renewed by subsequent GCE deans until this academic year (albeit at a less than full-time level from 2007). In 2004 Peter Taylor became director of the University's undergraduate Science, Technology and Values program. Nina Greenwald's teaching load in CCT created opportunities for him to teach across colleges and campuses in the area of science in its social context and, in 2009, with the encouragement of the current Provost, Winston Langley, to initiate a cross-college Science and Society graduate program. This initiative has ended up taking the form of a graduate Certificate and M.A. track within CCT on "Science in a Changing World" and is beginning to attract students. In the fall of 2010, University College agreed to fund a 50% assistant coordinator position for this track and to increase to 100% the CCT assistant coordinator position that CCDE had begun to fund in fall of 2009. This latest support was contingent on the Program scheduling sections of required courses and electives so that the M.A. in both the regular track and the new track can be completed by students over a 2.5 year period entirely by taking sections offered through the College.[3]

This 2010 self-study documents ongoing adjustments to changing circumstances and resource limitations. At the same time, readers will also find in the pages to follow—and even more so in associated links to websites and wikis—evidence of a graduate program that pays continuous attention to evaluations and other performance data, serves its students very economically, offers courses that serve more students outside the program than any other program 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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[3] As of December '10, permission for CCT M.A. students being able to take more than 50% of courses online is subject to final approval at the level of Graduates Studies and above.

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Abbreviations

AQUAD	Academic QUality Assessment and Development
AY	Academic year
CCDE	Division of Corporate, Continuing, and Distance Education (now University College)
CCT	Critical and Creative Thinking graduate program
CEHD	College of Education and Human Development (formerly GCE)
CLA	College of Liberal Arts
CLR	Course Load Reduction
CSM	College of Sciences and Mathematics
C&I	Department of Curriculum and Instruction
GA	Graduate Assistant (includes RAs and TAs)
GCE	Graduate College of Education, now CEHD
GPD	Graduate Program Director, a.k.a., Program Coordinator
LTET	Learning, Teaching, and Educational Transformation (non-licensure) M.Ed. track
PBL	Problem-based learning
RA	Research Assistant
SICW	Science in a Changing World graduate track
STV	Science, Technology & Values undergraduate program
UC	University College (formerly CCDE)
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
Regular track; Science in a Changing World track

Home Department: Curriculum and Instruction in the College of Education and Human Development (until July '10, Graduate College of Education).
Continuing faculty assignments from Departments of Psychology and Philosophy in the College of Liberal Arts.

2. Mission and Overview[4]
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, the mission of CCT is to provide 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.

Overview
Critical thinking, creative thinking, and reflective practice are valued, of course, in all fields. In critical thinking we seek to scrutinize the assumptions, reasoning, and evidence brought to bear on an issue-by others and by oneself; such scrutiny is enhanced by placing ideas and practices in tension with alternatives. Key functions of creative thinking include generating alternative ideas, practices, and solutions that are unique and effective, and exploring ways to confront complex, messy, ambiguous problems, make new connections, and see how things could be otherwise. In reflective practice we take risks and experiment in putting ideas into practice, then take stock of the outcomes and revise our approaches accordingly.

The rationale for a distinct Masters and Certificate program of study with an emphasis on critical thinking, creative thinking, and reflective practice is that an explicit and sustained focus on learning and applying ideas and tools in these three areas allows students involved in a wide array of professions and endeavors to develop clarity and confidence to make deep changes in their learning, teaching, work, activism, research, and artistry. By the time CCT students finish their studies they are prepared to teach or guide others in ways that often depart markedly from their previous schooling and experience.

In these processes of transformation and transfer, CCT students have to select and adapt the ideas and tools presented by faculty with diverse disciplinary and interdisciplinary concerns. Although each CCT course is self-contained and is open to students from other graduate programs, students matriculated in CCT benefit from extended relationships with core CCT faculty and fellow students that support their process-learning-experimenting and taking risks in applying what they are learning, reflecting on the outcomes and revising accordingly, and building up a set of tools, practices, and perspectives that work in their specific professional or

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[4] From 6/00 AQUAD plan, with some subsequent revisions during the 2002-3 AQUAD reviews to convey the rationale for a distinct Masters and Certificate program of study in CCT.

personal endeavors.

Content of Studies
Traditionally, the foundational knowledge emphasized in Critical Thinking 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. In the CCT Program this knowledge base is expanded through elective courses that take students into areas of specialization as well as through required courses in research, implementation, evaluation, and communication, which introduce a range of tools for students' own personal and professional development and for helping others develop equivalent processes. Over the last decade, required and elective CCT courses have 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. These themes are central to the newer courses on workplace and organizational change, which, in concert with the Program's long-standing emphasis on creativity, led since 2004 to the emphasis in promoting the Graduate Certificate on "Creative Thinking at Work."[5] 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, which has recently led to the designation of a separate SICW track.

Like the students in the Program, CCT faculty members[6] 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. Indeed, faculty members value teaching in CCT as an opportunity for teaching innovation and incubating ideas with input from the diverse practitioner-students of CCT, which can then be brought back into the faculty's home disciplines and undergraduate teaching. In turn, students' experience of the faculty as reflective practitioners in their own work is an essential part of the content of CCT studies.

Students and intended impact of studies
The CCT Program appeals to students looking for professional and personal development 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, pre-capstone research courses, and the capstone synthesis projects, CCT students explore issues they have not had much chance to address before and translate what they learn into strategies, materials, and interventions for use in diverse educational, professional, and social settings. Given the range of practitioners that choose to undertake studies in CCT, the Program cannot measure its impact in terms of numerical production of, say, certified teachers, principals, or nurses. Instead, the Program's success in fulfilling its mission has to be read from the capstone synthesis projects, exit self-assessments, subsequent reports and testimonials and more recently, by alum presentations to monthly CCT

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[5] http://www.cct.umb.edu/CTAWcert.html
[6] http://www.cct.umb.edu/faculty.html; see also Appendix H.

Network events.[7] These outcomes demonstrate that graduates leave CCT 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 (AQUAD plan)

[Note: in July '10 Graduate College of Education (GCE) became College of Education and Human Development (CEHD). This change will be reflected in statements of goals and objectives for the future.]

3.1 Goals and Objectives[8]

Summary of Goals

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.

B. To establish planning parameters that allow CCT faculty to determine the best use of their experience and energies and adjust operations to work within those parameters.

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

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

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.

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

G. To evaluate and continue developing the Program.

Objectives in relation to Goals

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 process and outcomes that reflect the Program's educational philosophy.

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[7] Table of contents of capstone projects, http://www.cct.umb.edu/asbtracts-TOC.html; Exit self-assessments are linked to http://cctrpp.wikispaces.umb.edu/ExitSelfAssessment (password-protected access to actual self-assessments is available for reviewers); feedback and updates from alums, http://www.cct.umb.edu/impact.html.

[8] From 6/00 AQUAD plan, with some additions 1/03 and adjustments 11/07. The latter removed past target dates and made other minor changes mostly to reflect initiatives since 1/03 that were already happening.

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. 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. Communicate with lapsed students to learn ways the CCT Program could serve students better; do the same for graduates and current students.

e. Institute expectation that students assemble reflective practice portfolios throughout their studies, with periodic presentation to and review by pairs.

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 12-15 matriculants per year, increasing the proportion of matriculants going on to graduate. Increase this target only if faculty and staff support are available.

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.

c. Maintain a reliable roster of CCT courses allowing students to specialize in the four areas listed in the Program mission and the certificate foci of Creative Thinking at Work, Science in a Changing World, and Gifted and Talented Education.

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.

(g. See Objective A1d.)

h. Maintain a system of advising current and prospective students that attends both to general issues about CCT studies and students' particular concerns.

i. Make effective use of computers and other technologies to recruit and advise students.

j. Maintain or increase the i) quality and ii) diversity of students admitted to and retained and graduated by the Program.

A3. Develop and revise Program offerings in emerging areas of social relevance, faculty specialization, and use of educational technology.

a. Develop and offer regularly courses that involve critical and creative thinking in the areas of i) science in the context of conceptual development and social change/ 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 foci for promotion of the certificate program, "Science in a Changing World, " and "Creative Thinking at Work," and "Gifted and Talented Education" 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. Review and revise the content of courses to keep them up to date with current scholarship and practice.
e. Make educationally justified and sustainable choices about when and how to integrate computers and other technologies, including online and distance education, 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 adjust operations to work within those parameters.

B1. Set or settle parameters for CCT's role in the GCE.
a. Departmental and College endorsement of CCT's Mission (in relation to the GCE) and plans.
b. Level of CCT course offerings
c. Number of full-time lines with primary responsibility to CCT, and replacement when faculty are on leave. (Having two full-time lines is particularly important for CCT's mission and for the full 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
f. Cross-college institutional arrangements to recognize the CLA/CSM faculty who work in CCT, secure continuing CLA/CSM contributions, and include those faculty in promotion and other reviews for CCT faculty in GCE
g. Support for part-time faculty
h. Administrative and budgetary 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 GCE Programs and Departments.
a. Circulate the CCT Mission statement, with an appendix on the planning parameters once they are set/settled
b. Invite GCE leaders and other faculty to briefings or forums on CCT
c. Explore possibilities and make the case for institutional support at UMass Boston of CCT's mission outside the GCE.

B3. 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 GCE.

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 GCE contribution to innovation in undergraduate and graduate math. and science education, a role that combines CCT's emphases on conceptual change in students and understanding science in its social context (see A3ai).

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C4. Contribute to the evolution of standard GCE 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 GCE centers and projects.

C6. Contribute to the accreditation of the Professional Education Unit (PEU), centered in the GCE.

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 and other forums.

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

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. CCT faculty members take an active role in new developments in Environmental and Science Education at UMass Boston.

D5. 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, detailing the planning premises, mission, integration of previous projects, governance and processes of evaluation and ongoing development, resources and funding plans, and integration with the CCT Program, GCE, Continuing Education, and the University.

E2. Involve the outreach unit in the foci for the certificate program (see A3b).

E3. Add at least one project or activity under the outreach unit each year that serves communities beyond UMass Boston.

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

E5. Make other contributions to teaching critical thinking about the life and environmental sciences.

E6. Undertake one high profile public event per year as well as 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 and wiki 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.

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

F4. 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 group, 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 Group 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 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 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; 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

The original AQUAD plan submitted in June 2000 provided a rationale for these goals and objectives.[9] In brief, as indicated in the Preamble, CCT needs to make appropriate

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[9] As indicated in earlier notes, minor additions to the rationale were made in the 2002-3 self-study and minor revisions were made to the goals and objectives in 2007. Footnotes providing

adjustments to changing circumstances and respond to shortcomings that emerged so the Program can:

> --maintain its strength as an interdisciplinary program with a strong focus on individualized learning, growth, and mid-career professional development[10];
> --develop a clear and constructive role in and beyond GCE, coordinating with other graduate programs and outreach initiatives[11]; and
> -- present a higher profile, within the university and in the wider community, for what is distinctive about CCT's work.[12]

Both by disposition and necessity, the Program needs to continue to innovate in response to new challenges and opportunities, but not to do so at the expense of what we have already committed ourselves to, most notably serving the students who have been admitted to the Program.

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). The Advisory Board, which has not been convened, was intended to take stock of whether the specified targets had been met and recommend that the Program faculty analyze the situation and develop concrete responses. In practice, the annual reviews to the College and Graduate Dean have served this function.

4. Curriculum
a. Programs: Most students in CCT seek a Master of Arts (M.A.) degree (11 courses/33 credits[13]). Others study for a Graduate Certificate (5 courses/15 credits), and some of these students then apply to transfer their credits into the M.A. program. In addition to the customary face-to-face programs of study, the Certificate may now be completed through online courses and the M.A. through a combination of online courses and regular courses taken at a distance. 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. In particular, students in the non-licensure and professional Teacher Education tracks who want to build a specific area of interest in CCT can contact the Program to be assigned a CCT faculty advisor. Non-degree students can also take CCT courses; this opportunity, together with workshops, winter and summer sessions, open house activities, 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, in intensive three-week sessions during the summer, online, and at-a-distance (i.e., being brought into regular classes by Skype). The Program can be completed on a part-time or full-time basis.

b. Tracks and Concentrations: M.A. students complete four foundation or core courses, four[14] electives, and three final required "research and engagement" courses including a synthesis

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relevant details have omitted here, but can be viewed in the 2002-3 self-study at http://www.cct.umb.edu/aquad02report.pdf.
[10] See Mission and Goal A
[11] Goals C and E
[12] Goals D-F
[13] 30 credits for students matriculated before Fall '08.
[14] Three electives for students matriculated before Fall '08.

seminar (see listing of courses below). Certificate students complete two foundation courses and three electives (which may include the other foundation courses). Since 2009, there have been two tracks:

Regular track
Foundations courses are Critical Thinking, Creative Thinking, Foundations of Philosophical Thinking, and Cognitive Psychology. The elective courses allow students to define specific areas in which they explore their CCT-related interests—for example, "creative thinking at work", "science in a changing world", "gifted and talented education", "critical and creative thinking in literature/arts/music", "dialogue and collaboration in organizational change." Areas of specialization may be constructed through cooperation with other UMass-Boston graduate programs, such as Instructional Design, Special Education, Public Policy, and Dispute Resolution. Publicity for the Certificate through CCDE/UC emphasizes a focus on "creative thinking at work."

Science in a Changing World track
Foundations courses are a) either Environment, Science and Society: Critical Thinking *or* Biology in Society: Critical Thinking, b) Mathematical Thinking, c) Scientific and Political Change, and d) Children and Science. M.A. students take all four courses; Certificate students choose any two. Electives can be chosen from across the Graduate School but it is recommended that the combination of foundation, elective, and research & engagement courses meet minimum numbers in each of the three areas of Science, Interpretation of Science in Context, and Pedagogy & Civic Engagement:

> --Masters students should aim for at least 4 courses in each area and, if Science is not the student's undergraduate major or subsequent training, at least 6 in Science.
> --Professional Science Masters students must take at least 6 courses in Science and at least 3 in Pedagogy & Civic Engagement, one of which involves an internship or supervised activities in schools, workplaces, communities, businesses, or the policy arena.
> --Certificate students should aim for at least 2 courses in each area and at least 3 in Science if this is not covered in the student's training.

c. Capstone experience: The CCT Program's capstone is the Synthesis Project, which is undertaken by CCT students in their last semester.[15] The Synthesis Seminar provides structure and support to students undertaking their capstone project. 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 words), 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).

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[15] The thesis option has been formally discontinued after several years in which it was not, in practice, an option because faculty resources were insufficient to supervise the required research.

Each Synthesis Project is read by two CCT core or affiliated Faculty and culminates with a 30-45 minute oral presentation to be offered in the final weeks of the Synthesis Seminar. An exit self-assessment is completed after the synthesis is submitted.

d. Courses:
(Appendix I provides a Compilation of Syllabi)
Required courses and most electives are offered on a regular schedule to simplify planning and a long-term plan of course offerings is available on the website.[16]

f2f = face-to-face; ol = online

Required Foundation Courses for Regular Track
CCT 601   Critical Thinking (f2f, ol)
CCT 602   Creative Thinking (f2f, ol)
PHIL 501   Foundations of Philosophical Thought (f2f)
CCT651/PSYCH 650 Advanced Cognitive Psychology (f2f)

Required Foundation Courses for Science in a Changing World Track
CCT640   Environment, Science and Society: Critical Thinking (f2f)
Or CCT645/BIO545 Biology in Society: Critical Thinking (f2f)
CCT649/PPOL749   Scientific and Political Change (f2f)
CCT650   Mathematical Thinking (formerly: Mathematics Thinking Skills) (f2f)
CCT652/PSYCH552   Children And Science (f2f)

Elective Courses (four to be taken[17])
CCT611   Seminar in Critical Thinking (themes may vary; can be taken twice) (f2f)
CCT612   Seminar in Creativity (themes may vary; can be taken twice) (f2f, ol)
CCT616   Dialogue Processes (f2f, ol)
CCT618   Creative Thinking, Collaboration and Organizational Change (f2f, ol)
CCT619   Biomedical Ethics (f2f, ol)
CCT627   Issues in Antiracist and Multicultural Education (f2f)
CCT630   Creativity and Criticism in Literature and Art (f2f)
CCT640   Environment, Science and Society: Critical Thinking (f2f)
CCT645/BIO545   Biology in Society: Critical Thinking (f2f)
CCT649/PPOL749   Scientific and Political Change (formerly Science, Technology, and Public Policy) (f2f)
CCT650   Mathematical Thinking (formerly: Mathematics Thinking Skills) (f2f)
CCT652/PSYCH552   Children And Science (f2f)
CCT655   Metacognition (f2f)
CCT670   Thinking, Learning and Computers (ol)
CCT688   Reflective Practice (f2f, 1-6 credits)
CCT696   Independent Study (1-3 credits)
Possible electives from other programs with advisor's approval

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[16] http://www.cct.umb.edu/futureyears.html
[17] Three for students who matriculated before Fall 2008.

Required Final Research & Engagement Courses

CCT 692   Processes of Research and Engagement (formerly: CCT698 Practicum: Processes of Research and Engagement) (must be completed before taking CCT694)

CCT 693   Action Research for Educational, Professional and Personal Change (formerly: Seminar in Evaluation Of Educational Change)

CCT 694   Synthesis of Theory and Practice

5. Advising System

a. Recruitment and new student advising: CCT is a unique graduate program, so there are no standard conduits for students into the Program. A variety of means are used to make the Program known to prospective students: courses offered through and promoted by CCDE and UMass online; word of mouth recommendations; bookmarks distributed by members of the wider CCT community at events they attend; a website that ranks high in google searches for combinations of the terms "critical," "creative," and "reflective practice." Once prospective students find out about CCT, advising is mostly done through phone calls and emails and inquirers are directed first to the detailed online CCT Student Handbook[18], which takes the student through the steps from applying to graduating, and to the CCT website, which can be searched for more information about the Program and allied activities in the wider world.[19] 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 Program Coordinator has to maintain a phone/email/advising presence out of the academic year. (The Assistant Coordinator, a CCDE-funded position that began in Fall '09, now plays an important support role in this area.) Students are called for an interview when the admissions committee has questions about whether an applicant fully appreciates the nature of the Program and is prepared for self-directed inquiry.

b. General advising: A general advisor from the core CCT faculty is assigned to each student upon acceptance to the program. In recent years all students have been assigned to be advised by the Program Coordinator (given that they tend to consult him anyway and other core faculty have leadership positions in their home departments). Course plans are required of all students.[20] In recent years an entrance interview has been instituted for all new matriculants and a mid-program check-in is required half way through the program of studies. At the entrance interview, the student's general advisor and other faculty members encourage students to

--Explore and become familiar with the resources available in the website (http://www.cct.umb.edu), handbook (http://www.cct.umb.edu/handbook.html), and wiki (http://cct.wikispaces.umb.edu)

--Submit provisional plan for taking courses

--Make connections among ideas and experiences from different courses by starting a Reflective Practice/Metacognitive Portfolio, http://cctrpp.wikispaces.umb.edu/

--Participate in monthly CCT Community (a.k.a. CCT Network) activities

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[18] http://www.cct.umb.edu/handbook.html or http://www.cct.umb.edu/handbook.pdf

[19] http://www.cct.umb.edu

[20] These plans are entered into the Program's database and used for advising and to manage enrollment (e.g., how many electives to offer).

> --Join the social network site in order to connect with alums and other members of the wider CCT community
> --Take steps to acquire a range of Research and Study Competencies progressively over -
> --Make use of writing support groups, tutors, coaches, and editors so they can develop and convey their ideas strongly on paper.

A Mid-program check-in (required since 2009) should be scheduled during the two weeks after the end of the semester in which students take their fifth course towards the CCT M.A. They should submit their Reflective Practice/Metacognitive Portfolio thus far and evidence of Research and Study Competencies acquired. The CCT faculty reviews these and meet with the student to make recommendations (which may include suggesting that the student puts a hold on taking courses in order to finish incompletes and/or spend a semester improving writing skills and acquiring more Research and Study Competencies). The check-in meeting is also an opportunity to review with the student "the set of steps to prepare CCT students to complete a synthesis during their final semester (or very soon after)" and look ahead to project options for pre-capstone research and writing courses and the capstone synthesis.

At one CCT meeting each semester, the faculty discusses the situation of students having difficulties—usually manifest as incomplete incompletes—and decides what will be said to the student and by whom.

News is compiled monthly on the CCT wiki[21] and an email with a link and key items is sent to the whole CCT community. Announcements about courses, registration, etc. are sent to current and prospective students. Course offerings are posted on the website; flyers are sometimes produced and distributed in classes before registration. The Program is slowly building a culture of mentoring of newer students by experienced students and alums.[22] Events, such as orientations, community 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. Synthesis advising:
CCT's capstone synthesis results in a bound scholarly product like a thesis, but, unlike a thesis, only two advisors are involved. The synthesis seminar provides a structure for much of this advising. The synthesis advisors are established with the student when they submit their synthesis proposal. The default option is for the instructor of the synthesis seminar to serve as the main advisor; the low registration cap on the synthesis seminar reflects that intensive work.

To reduce the advising time spent on form and formatting issues an extensive document giving guidelines and examples is distributed;[23] a website of links related to the various phases,

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[21] http://cct.wikispaces.umb.edu/news
[22] http://cct.wikispaces.umb.edu/CCTNetworkNing   A directory of students and alums from the last 30 years is updated every few years and made available by the online social network site. This lists interests and accomplishments to helps students and alums make connections. (Access by reviewers can be arranged on request.)
[23] Mona Liblanc, a CCT alum, wrote the original version after she graduated as a gift to students who came after her.

including graduation, is kept up to date;[24] and copies of syntheses can be borrowed from the CCT office or are available online.[25]

Students are required to submit a proposal and arrange advisor and reader before commencing this capstone project; when topics and advisors are established or changed after the synthesis seminar begins, students usually do not finish during the semester. The Program has had a significant number of almost, but not quite finished synthesis projects, and has instituted a series of steps,as mentioned earlier, to prepare CCT students to complete a synthesis during their final semester. These steps include the entrance interview, mid-program check-in and Reflective Practice/Metacognitive Portfolio requirement, a writing support group, and a completion contract for students who do not finish the synthesis during their synthesis seminar semester.

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 occasional social events and to 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."

An outreach unit initiated in Spring 2000, "Thinking *for* Change," went into hibernation during the preparation of the last AQUAD review, but remerged in 2005 as the Reflective Practice Support Group,[26] which led, in 2008, to the CCT Network.[27] The goals of the CCT Network are:

--to organize, in a sustainable fashion, personal and professional development, community building, and educational-innovation activities beyond the formal CCT program of studies.
--supplement students' education through the involvement of alums.
--continue alums' education by their involvement in the education of students and each other.

The CCT Network has organized monthly evening events during the academic year for three years now, as well as hosting the online social network site.[28] Additional events open to the public were organized by Nina Greenwald in Spring '06, and Spring and Fall '09.

The series of workshops for teachers and college faculty that CCT had hosted since Spring 1999 designed to foster critical thinking about science in its social context evolved in 2004 into an annual four-day New England Workshop on Science and Social Change "designed to facilitate discussion, teaching innovation, and longer-term collaboration among faculty and graduate students who teach and write about interactions between scientific developments and social change."[29] Participants come from Europe as well as North America and have included

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[24] http://www.cct.umb.edu/synthinfo.html

[25] http://www.cct.umb.edu/abstracts-TOC.html, http://www.cct.umb.edu/abstracts.html

[26] http://www.cct.umb.edu/rpg.html

[27] http://cct/wikispaces.umb.edu/CCTNetwork

[28] In 2009, the received CCT Forum Beacon Student Leadership award for Best Student Program, namely, the CCT Network.

[29] http://www.stv.umb.edu/newssc.html

CCT students. In spring 2010, to launch the new Science in a Changing World track, the Program organized "Changing Science, Changing Society," an exposition of initiatives, coalitions, and social movements, engaging with scientific, technological, and social change.[30]

As a matter of reflective practice and an invitation to further conversation, documentation of co-curricular activities is standard practice for CCT. This is evident in the web and wiki links given in the footnotes to this self-study[31] and in the full online version of the Faculty Review of Mission, Goals and Objectives from AQUAD plan (Appendix C).[32]

7. Scheduling

As mentioned earlier, to accommodate the schedules of teachers and other professionals, courses are offered after 4pm, in intensive three-week sessions during the winter and summer, online, and at-a-distance (i.e., being brought into regular classes by Skype). The Program can be completed on a part-time or full-time basis. In light of the large distances some students travel to the campus, course schedules are arranged so that students can often take two required courses back to back on one evening. A face-to-face section of each required course is offered every third semester (except the capstone seminar is offered almost every semester) and each elective is offered every fourth semester. This rotation minimizes the chance that sections will be cancelled for low enrollment and maximizes the number of electives a student can choose from over a 2.5 year period (which is the average length of time students take for their coursework). Sections of online, winter, and summer courses are generally offered on an annual rotation.

The CCT faculty prepares a proposed course schedule and submits it through the Department of Curriculum and Instruction. Rooms suitable for CCT's seminar-style courses and break-out groups are few, but the Psychology Department provides space for many CCT courses in their seminar rooms and teaching labs.

Face to face courses scheduled for fall and spring semesters are taught in State-funded sections by regular faculty members (with a few exceptions; see section I.B.1). Online courses and courses scheduled for winter and summer semesters are taught through CCDE by part-time faculty. (See section I.C.1 for breakdown of State versus CCDE enrollments.)

8. Governance

The CCT Program Coordinator (or Graduate Program Director [* see next paragraph]) convenes monthly face-to-face meetings of the CCT core faculty, but email and the CCT wiki 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!) Besides meeting as a committee of the whole, there is one CCT sub-committee, a two-person Admissions Committee, which reviews applications as they become available.

* The dual naming—Program Coordinator or Graduate Program Director—reflects three circumstances: a. In January 2001 GCE instituted a policy that Department chairs are formally the GPDs for all graduate programs in the College. In practice, faculty from the programs

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[30] http://sicw.wikispaces.umb.edu/Expo

[31] http://cct.wikispaces.umb.edu/space/stats/overview suggests that the wiki has visitors from around the world.

[32] http://www.cct.umb.edu/AQUAD10GoalsReview.html

continued to fulfill the duties of the GPD (only without the stipend given by Graduate Studies and, in most programs—CCT included—, without the course load reduction); b. In 2006, a new constitution was approved for the C&I Department in which each program would have a Coordinator elected by the program faculty for a three-year term; c. In 2007-08, the Program Coordinators in C&I were granted a one course/year course load reduction by the Chair and in 2008-09 a stipend from Graduate Studies was reinstated. Clearly, the Program Coordinators are seen as the GPDs, yet, because the 2001 policy has not been officially rescinded, the two names are used in this document.

Under the C&I constitution, the CCT Program Coordinator reports to the C&I chair, who has ultimate authority over course scheduling, staffing, and budgets. Annual program reports are sent to the Dean of Graduate Studies and incorporated in the Department's report to the College Dean. Most of the CCT core faculty members have appointments in CLA; their course assignments, leave approvals, and coverage when on leave are arranged within their departments and college.[33]

B. HUMAN AND MATERIAL RESOURCES

1. Regular faculty
Curriculum vitae with biographical sketches included in Attachment H.

a. Faculty assigned primarily to the Program
One full-time tenured faculty member dedicated to the Program. Also, from 2004-10, a lecturer, non-tenure track, at 2/3 to full-time.

Peter Taylor (full time, tenured)
Specializations: Critical Thinking and Reflective Practice, especially about Environmental and Health Sciences in their Social Context.
Program Coordinator (a.k.a. Graduate Program Director) responsible for recruitment and admissions, general student advising, program administration and office management, website and handbooks. Also, Coordinator of partnership with CCDE and of the new Science in a Changing World graduate track.
Responsible for teaching final required courses in research and engagement (CCT692, 693, 694) and critical thinking electives on science in its social context (640, 645, 649).

Nina Greenwald (lecturer, non-tenure track, through AY 2009-10, at 2/3 to full-time)
Specializations: Educational psychology, teaching creative and critical thinking, problem-based learning, gifted education, teaching to multiple intelligences
From 2004-10, her responsibilities included recruitment advising and outreach, as well as teaching the required foundation course in creative thinking and capstone synthesis course. Shealso taught electives in creativity, problem-based learning, and gifted and talented education.

Note: Since October '09, a Professional Staff member, the assistant coordinator to the Program, has had responsibilities for teaching online sections and the Reflective Practice course.

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[33] Through judicious course scheduling, coverage for non-GCE faculty has only been needed once since the last review.

b. CCT Faculty from other units
50% of a full-time teaching load from Psychology and 50% of a full-time teaching load from Philosophy, with associated service expectations, as part of long-term agreement originating at time of hiring Profs. Smith and Millman. (This translates into one course/semester, but, in practice, teaching from Psychology has not always been at this level. Until his retirement in 2004, Prof. Schwartz had fulfilled some of the Psychology commitment for Prof. Smith.)
In addition, Larry Blum from Philosophy teaches 1 section every second year and participates in faculty meetings. In 2003, when Prof. Millman was on leave, the required Philosophy course was taught by a Philosophy faculty member. In 2004, when Peter Taylor was on leave, the required Processes of Research & Engagement course, CCT698 (now CCT692), was taught by faculty member assigned from Teacher Ed. Program. In 2009 Creativity in Literature and Arts, CCT630, was taught by Denise Patmon from Teacher Education, in conjunction with her course EDCG647.[34]

Table 1. Numbers of faculty with formal assignments to the Program

Year	Total	GCE*	CAS/ CLA **	Notes	State- funded sections taught***	CCDE- funded sections taught
AY02-03	2.5	1.5	1		15	3
AY03-04	1.68	0.83	0.75	Millman on leave Fall '03*	12	7
AY04-05	2.33	1.33	1	Taylor on leave Fall '04	13	6
AY05-06	2.83	1.83	1		16	9
AY06-07	2	1	1	Taylor assigned 2/3 as Dept. Chair, Fall '06; Greenwald medical leave Spr. '07	8	9
AY07-08	2.5	1.5	1		11	11
AY08-09	2	1.5	0.5	Smith on leave	13	12
AY09-10	2.5	1.5	1		10	14
AY10-11	1.83	0.83	1	Greenwald lectureship discontinued	expected 9	expected 15
Average	2.3	1.4	0.9		12.3	8.9

* From Jan '04 onwards, 1/6 of Taylor's formal assignment directing STV Program
** Does not include Larry Blum's contribution
*** Does not include CCT650 when this course number was used by the Teacher Education program as a Math. Methods course.

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[34] The plan is for this arrangement to be repeated every second year.

2. Part-time faculty with instructional roles
Since AY 2003-4, all part-time instructors have been funded through CCDE with the following exceptions: one section in 2004 and 2005 was funded by Psychology to substitute for Steve Schwartz while he was Chair of Psychology, and one section was funded by an NSF grant that gave Peter Taylor a course release.[35] The CCT-CCDE partnership, which commenced in 2004-5 (see Appendix A), required the addition of several online sections. Seven instructors have been hired after soliciting proposals for innovative approaches to internet-mediated teaching. Two of these have stopped teaching for the Program and replacements have been found.

3. Professional and classified staff
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 GCE have historically included Administrative assistants who help Graduate Program Directors run the different graduate programs. This assistance dropped to 0 in summer 2002[36], was restored to a ½ time GAship earmarked for CCT by the Graduate Dean in 2004 to help with recruiting, but dropped back to ¼ time in 2007. At that point Peter Taylor was assigned a ¼ time GA and he has assigned that person to serve as a second ¼ time administrative assistant in the Program.

Starting fall 2004, the Program was also served by the equivalent of a ¼ time GA funded by CCDE to promote the CCT certificate. This position increased to ½ time in January 2009 to promote a CCT contribution to a CCDE initiative in China (which did not in the end get started). This became a ½ time professional staff and teaching position on October 2009, and increased to ¾ time in June 2010 and full-time in January 2011. An additional ½ time professional staff and teaching position to promote and assist with administration of the new Science in a Changing World graduate track will begin in January 2011.[37]

4. Material resources
One MAC laptop
Photocopying through allowance to individual faculty members in C & I
Laser printing and paper using C & I Departmental printer
Offices: The full-time faculty member assigned primarily to the Program has had a large office since Fall '09, where Program meetings are now held and most of the active Program materials are stored. This office is shared by the Assistant Coordinator and GAs.

5. Library use
Stimulated by library orientation sessions in courses, students' use of on-line reference material increases each year. Most professors use the library e-reserve system or other password-protected system for readings.

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[35] The funds from this grant for two additional course releases went into general GCE funds for hiring part-timers in other programs.

[36] Past GA support had ranged from a high of equivalent to 4.75 full assistantships (=4.75 x 20 hours/week) in 1994-95, through the equivalent of 2-2.5 in years 1997-2001, to the current level of .25.

[37] Appendix A presents the memos governing the developing CCDE/UC partnership.

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 GCE, either as research assistants to individual GCE faculty members or as teaching and administrative assistants to the Programs;

-- other graduate assistantships (e.g., to non-CCT faculty in GCE; Office of Student Life; Sport & Recreation department);

-- international student tuition waivers; and

-- miscellaneous grant funding.

C. STUDENT PROFILE

1. Enrollment data[38]

CCT course registrations

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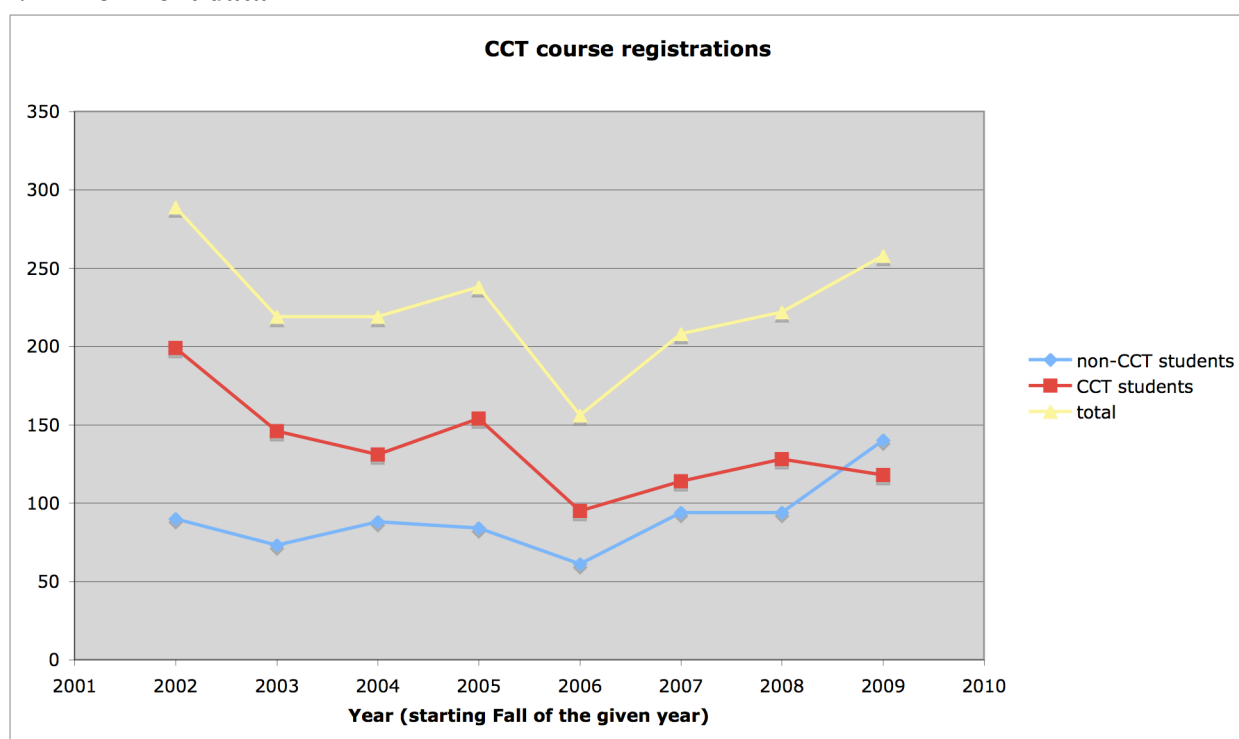
[38] Source: Enrollment data supplied by the Registrar; spreadsheet available on request. Includes registrations in required CCT courses Phil 501 and Psych 550. Does not include CCT650 when this course number was used by the Teacher Education program for a Math. Methods course.

Registrations in State vs. CCDE sections
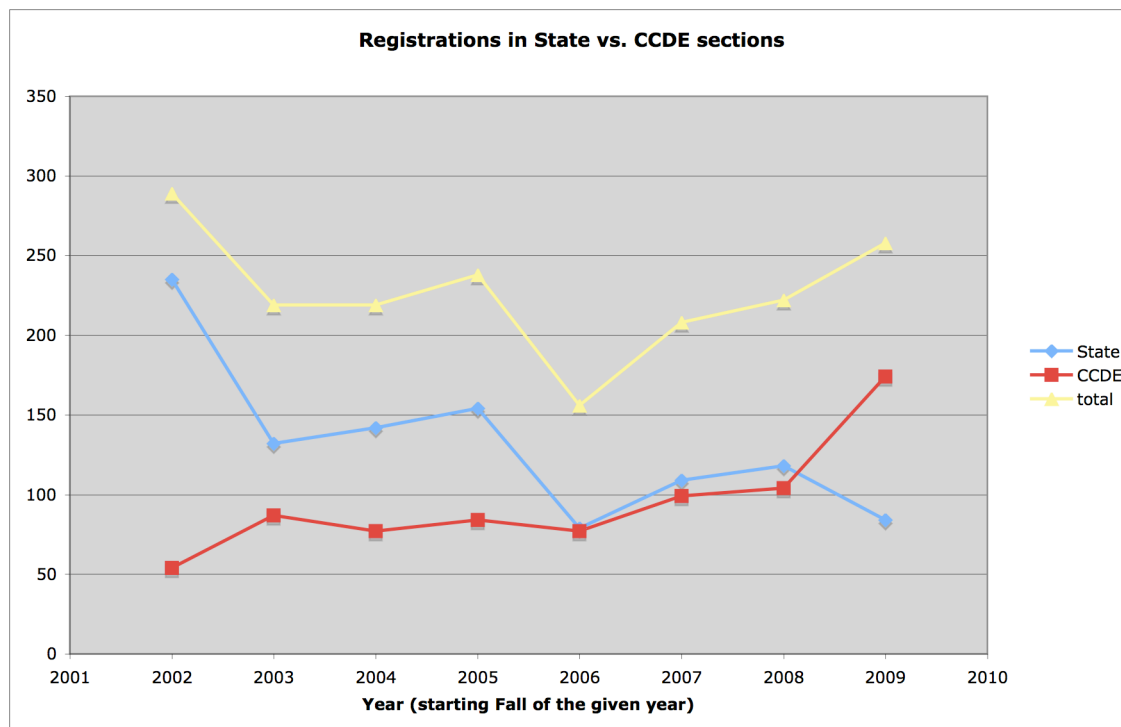
Comments: The decline in CCT student registrations from AY02 to AY03 corresponds to the admissions moratorium after the 02-03 AQUAD review. The drop in all registrations from AY05 to AY06 probably corresponds to graduation of pre-2002 CCT students (when admissions ran at higher level than after the moratorium) and to the virtual elimination of electives in the Teacher Education licensure programs. The increase in registrations since AY06 corresponds to the increase in online sections offered through CCDE/UC and promotion of CCT sections to the non-licensure Teacher Education track. The general decline in registration in state-funded sections corresponds to lower admissions to the CCT M.A. program ever since the moratorium.

2. Application, Matriculation, and Graduation Data[39]

CCT student numbers 02-03 to present (not incl. grad/wdwn before Fall '02)
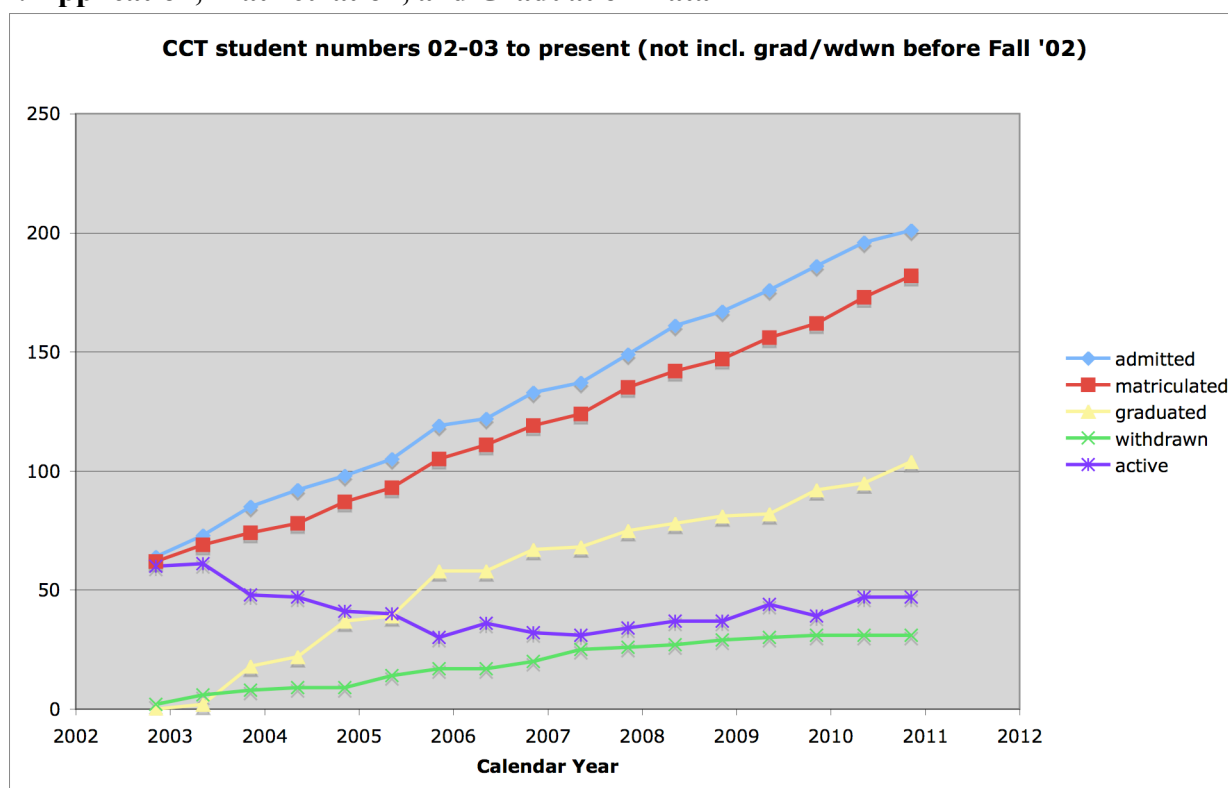
Comments: The lines, except for Active students, track cumulative numbers, so the slopes are the salient feature to interpret. The proportion of admitted students averages 90% with no dramatic departures that warrant explanation. The number of students active in the Program drops after graduation of CCT students admitted pre-2002 (when admissions ran at higher level than after the moratorium), but begins to slowly climb after 2007 when students from the non-licensure Teacher Education track also join the CCT Certificate program. The initial steeper slope of the graduation line corresponds to CCT students admitted pre-2002 (before the graph begins). After that the slope is steady at a level corresponding to 56-58% of matriculated students graduating. Of those who graduate in the M.A. program, the average time taken is 2.75 years (SD=1.1); for the Certificate program, 1.55 years (SD=1.1). Of those who withdraw, the average time in the Program is 1.49 years (SD=1.7).

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[39] Source: CCT database; spreadsheet available on request. Students who skip payment of their program fee and let their formal status become inactive but are later reactivated are included as continuously active. Includes Graduate Certificate as well as M.A. students.

3. Descriptive data[40]

a. Ethnic/racial diversity.

Euro-Am/Euro fraction of matriculants
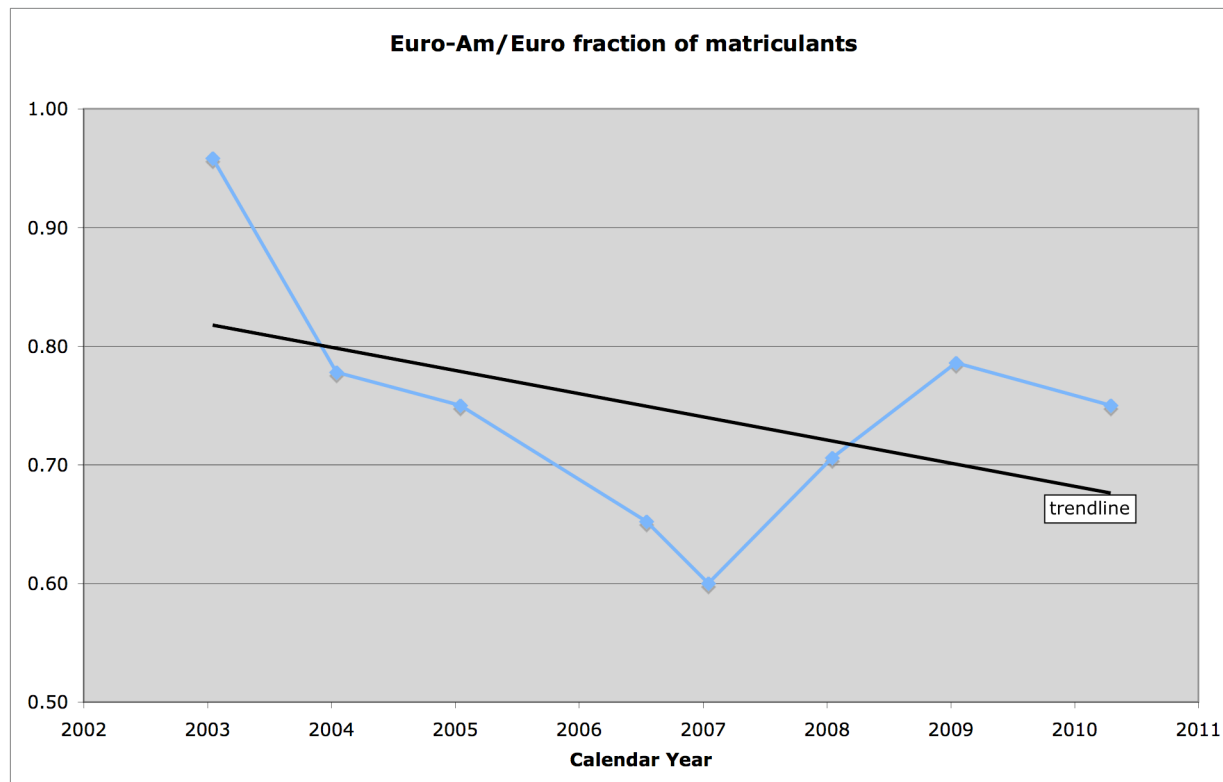
Comments: The trend line indicates a marked <u>increase</u> in students not of Euro-American or European ("White") origin over the period under review. Clearly, however, there is variation around that trend.

b. Admissions data. Of the students admitted 2003-10, the average GPA is 3.17 (coefficient of variation 15%, N = 112 of 138), figures that are almost identical to those for the 2002-3 AQUAD review. (GPAs are often not available for students from abroad, from non-traditional degree programs, and adding certificate to another Masters degree.) 40 of the 112 had GPAs were less than 3.0, which means admission was provisional.[41] GREs are not required for applicants to CCT. The average year of undergraduate degree was 1996 (range 1971-2007), which corresponds to a student body mostly in its late 20s to early 50s (an average of four years older than for the 2002-3 AQUAD review). Table 2 indicates that almost all applicants have careers and are pursuing personal and professional advancement. (More detail on a sample of applicants is provided in Appendix B.)

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[40] Source: CCT database; spreadsheet available on request.
[41] Students receiving provisional admission must achieve B+ or higher in their first two courses to gain full admission.

Table 2. Professional background and aspirations of admitted CCT applicants, 2003-2010.[42]

Category	Number of admitted applicants
K-12 teaching	31
Higher Ed administration	16
Community/Youth/Human Service Programs	15
Health professions	11
Music, Arts, & Museum Ed	9
Community College Teaching/Librarian	9
Business & consulting	8
Science/Technology	5
Gifted and talented/Special Ed	4
Government	4
Journalism	1
Other	3
Not known	29

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[42] Source: CCT database, supplemented by personal knowledge of Program Coordinator
N = 138. Some applicants recorded in more than one category.

II. SELF-ASSESSMENTS

The Program's efforts to meet goal G of its AQUAD plan—"to evaluate and continue developing the Program"—take a variety of forms over and above individual faculty members responding to student evaluations of their courses.[43] Six angles of assessment are documented here.

A. FACULTY REVIEW OF MISSION, GOALS AND OBJECTIVES FROM AQUAD PLAN

This review has taken the form of brief comments on each objective with: a. links to online documentation or "exhibits" that illustrate how the objective has been addressed; and b. revisions to the goals and objectives in light of what has and has not been accomplished [included in brackets]. The full review is included as Appendix C of the self-study report, but, in order to explore the linked web and wiki pages, it is best reviewed online at http://cct.wikispaces.umb.edu/AQUAD10GoalsReview?f=print. Most objectives were addressed and met reasonably well. The objectives that were not met well (some of which are excerpted in Table 3) should elicit useful discussion during the AQUAD review process and by the CCT faculty afterwards. Further revisions to the goals and objectives might follow from discussion of the strategic directions that emerged from faculty reflection on exit self-assessments and surveys (see sections II.E and III.A).

Table 3. Selected objectives from AQUAD plan that were not met well

Objective	Comments, excerpted from full review (Appendix C)
A1d. Communicate with lapsed students to learn ways the CCT Program could serve students better…	Surveys sent to lapsed students did not receive any responses [see sect. II.C].
A2a. … increasing the proportion of matriculants going on to graduate.	Proportion graduating steady at 57-58% for several years.
A3c. Review the Program requirements and content of required courses to complement and adjust new directions in CCT offerings.	Began at a one-day retreat in Jan '08. Continuing as individual instructors make time.
E2. Involve the outreach unit [CCT Network] in the foci for the certificate program	
G1. Constitute an advisory group, 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.	
G4. Develop 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.	No explicit plan developed… Suggested revision: replace "of increasing diversity" with "that diversity and inequality raise for understanding thinking and reflecting on practice."
G5. Prepare a plan for establishing CCT as a place to train and support activists.	

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[43] Student evaluations using a CCT form have begun to be linked to the course descriptions on the website for some courses, http://www.cct.umb.edu/courses.html (see Appendix I).

B. EXCERPTS FROM GRADUATING STUDENTS' EXIT SELF-ASSESSMENTS
Graduating M.A. students are required to complete an exit self-assessment of their capstone synthesis and their CCT experience as a whole. This self-assessment (included as Appendix D) is designed to document how the Program facilitates student success in learning, where success is that they have become reflective practitioners in their diverse professions and can identify paths ahead for themselves as life-long learners. The self-assessment revolves around two sets of goals (which are made explicit in the pre-synthesis course, CCT692) related to the final product, the synthesis, and to the process of "Developing as a Reflective Practitioner." For each goal students are asked to describe:
> a) something that reflects what you have achieved well related to this goal, and
> b) something you have struggled with/ need more help on/ want to work further on.[44]

This assessment also serves as stock-taking for the graduating students to inform their future work (and can be adapted to any project of research and engagement), as well as providing insight for the instructor, advisors, and for other interested parties (see faculty reflection of the self-assessments in section II.E below). Password-protected access is available for reviewers to the full self-assessments on http://cctrpp.wikispaces.umb.edu/ExitSelfAssessment. Some excerpts follow:

> Artist and Higher Ed. Administrator: "I have struggled with my painting (i.e. why I stopped painting) and personal creative development. I have learned and now better understand these challenges, including how creativity functions, how complicated and sensitive it can be, and the methods of creative problem solving that helped us find ways to be creative. For me, I was successfully able to begin painting again and recently even set up a new studio."

> Science teacher: "I can not emphasize enough that this new teaching, student as full partner is a risky process on both sides, but has given me the most fruitful educational experiences of my educational life."

> Designer and college-level design instructor: "It is a shame that UMASS is not supportive of such a program, which allows students to determine their own paths and to truly be creative in a life endeavor.... It is not a good feeling when a student already in a program knows that its department is not supported with the faculty it needs to give students the education there are paying for…
> The synthesis project allowed me to truly have something that was mine and was not based on pre-determined criteria… I consider this a significant accomplishment in my life."

> High school math. teacher: "The CCT program in general has helped me to become a reflective practitioner in my teaching. I have also sought out ways to bring the idea of collaborative change and participatory action research to my colleagues and administrators. I plan to continue to work to bring about this type of decision-making and problem-solving structure in my school."
> "[T]he focus in the CCT program on revision has held me accountable for my progress."

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[44] http://www.cct.umb.edu/selfassess.html

After-school teacher: "I readily heeded both the instructor's and peers' advice—though I naturally felt that the entire course was a collaborative experience in which negotiating and discussing alternate options encouraged the creative and critical thinking necessary for my personal voice in the product to surface."

College librarian: "[W]hat has been working well is my capacity to become engaged in areas of study not originally on my 'radar', such as… studies of science, technology and society, bioethics, and participatory democracy processes such as consensus conferences and citizens' juries. My professional life has also been re-charged thanks to my CCT studies."

Teacher from Latin America: "All the courses at the CCT program were very inspiring and motivating but at the same time challenging and tough. At first it was difficult for me to express my ideas, to keep up with the new way of working. Being the only foreign student and coming from a different type of school system made the experience more challenging and interesting. Teachers and students made me feel comfortable at all times and I found a way to overcome my obstacles. I now can compare the way teachers teach here and in my country."

C. SURVEY OF CURRENT AND FORMER STUDENTS AND OTHER EVIDENCE OF STUDENT SATISFACTION

We created a 14-item online survey for current CCT students, an 11-item survey for CCT alums, and a 7-item survey for non-CCT students who have taken CCT courses (Appendix E). The online survey was distributed by emailing the corresponding link for each survey on www.surveygizmo.com to the appropriate group with an explanation of the purpose of the request, using last known working email addresses from the CCT database. We received 9 completed surveys from current CCT students (out of 42 possible); 21 from CCT alums (out of 107 possible); and 31 from non-CCT students who took CCT courses (out of 600 possible). Non-responses include those who never received the email request, as indicated by messages bounced back as undeliverable (around 32 total across all groups). In reporting results, we consider the answers to questions from CCT graduates, then current CCT students, and then non-CCT students who have taken our courses for each of the five categories of questions[45]:
  (a) background on program in which student is enrolled (CCT M.A. or Certificate, non-CCT graduate, non-CCT non-graduate);
  (b) what led them to enroll in CCT Program or take CCT courses (including how they heard about Program or course) and what aspirations they had at the start;
  (c) what kind of change occurred from the Program and the evidence they have for the change (and for non CCT students, what stood out as distinctive about the program);
  (d) overall evaluation of courses/Program; and
  (e) suggestions for improvement.

We also distributed equivalent surveys to students who took all courses but did not finish the capstone synthesis and to other students who matriculated but did not finish (totaling 36).

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[45] We also asked two questions of current students who had completed all courses but synthesis, what might have prevented them from finishing. As it turned out this was not applicable to any of the students who replied.

However, we received no responses to those surveys, even after follow-up (which included phone calls to the last phone numbers we had in our records). For these former students we assembled a table that summarizes the reasons for students' withdrawal from the program based on notes in the Program database and the Program Coordinator's knowledge.

1. Responses from CCT graduates
a. Background questions
   We received responses from 15 students who had completed our full Masters Program and 6 who completed the graduate certificate. (This 2.5: 1 ratio compares with the actual ratio 5.25:1 for Masters: Certificate graduates over the period 2003-10.) Students were also asked to indicate their specialty area within CCT. Among the respondents, 5 indicated a focus on CCT and teaching (at levels ranging from elementary to higher ed), 4 indicated a focus on CCT in the workplace, 3 on CCT and the arts, 3 on CCT and reflective practice or problem solving, 2 on CCT and science, and 2 on CCT and information literacy or writing. Two respondents did not address this question. These results reflect the diversity of interests and applications of CCT that is part of the CCT program (and that will be commented on in later questions) and that we think is part of the power and strength of CCT (our students do too). This diversity of foci was reflected both in those pursuing a certificate and the full M.A.

b. Enrollment Questions
   We also asked our students a series of questions about how they heard about the program, what information led them to apply, and what their aspirations were at the time of initial enrollment.

   How did you hear about the program? Eight of the 21 respondents mentioned searching on-line, and viewing the CCT website, as at least part of how they heard about it. Six mentioned learning about it through looking at the graduate catalogue. Five were already at UMB for other reasons (three were employed at UMB, three in other programs at UMB). Three mentioned direct recommendations from others about the program (CCT alum, undergraduate professor, friends).

   What led you to apply? When asked about what led them to apply over half (11) mentioned they were intrigued by course descriptions and mission and the variety and flexibility offered by the program. For example: "I loved the variety of coursework and the flexibility to design programs to meet your needs. The course descriptions on the website just really interested me. I also liked that there was the graduate certificate option." "The ability for individualized project design and learning…unlike typical grad ed classes where everyone learns the same thing, all courses in the CCT program allowed me to design my own path while also designing real units, projects and other materials that I could apply in the classroom. Tailor made for me…the single most effective learning program I've experienced to date." " I liked the way the program was described-it seemed very flexible and open to student interests. I did start out in the Graduate Certificate program but decided half way through that I really wanted to complete a Masters. I also loved the fact that it was in Boston." "I felt the atmosphere of the program, high expectations along with a certain amount of autonomy and freedom in assignments, was an excellent fit for my learning style…The sense of community that this program fosters was and still is a primary strength, and I have spoken of this program at great lengths to others and would recommend it without hesitation."

Five respondents described how they were looking for something "different" from traditional programs that could give them important or transferable skills. For example, "I was interested in getting a Masters of Education, but not simply a teaching certificate." "I liked the fact that my grad studies could be put towards improving workplace/career choices and experiences; it was a nice alternative to an MBA." "I already held a very practical degree: a BS in Education. I wanted a graduate degree that I thought would be impractical. Since I use my CCT skills daily, I found that getting the MA in CCT was the most practical thing I have ever done."

Four mentioned the encouragement, support of the Director and/or other program faculty: for example, "Director's interests and urging;" "A discussion with Peter Taylor about the Program;" "the friendliness of faculty." Two others mentioned they enrolled after taking initial courses: for example, "I took 2 classes to start and was hooked!" Two others simply mentioned proximity to where they lived and flexibility of taking courses.

What did CCT offer beyond what might be gained through other programs? Elaborating on the themes already mentioned in the previous question, all but two students indicated they considered other programs and mentioned that CCT appealed to them because through its flexibility and course structure, it offered them unique opportunities to grow and develop as a person, to develop more broadly in ways that allowed them to see the world through a critical and creative lens, and to develop more general problem solving skills that would not be developed in other programs. For example, " "A lot of room for growth and impact beyond the Masters degree program itself", "CCT showed a real commitment to helping me grow as a learner and a person", "The CCT Program seemed to be something that would grow and change with me, something that had been an issue for me in my undergrad years," "I enrolled in CCT after already being enrolled in the MEd program and completed them both simultaneously. The MEd program met the teaching requirements but was not substantive enough for my personal growth. CCT offered me what the MEd lacked." And: "That is offered a CRITICAL and CREATIVE approach-a skill or lens that is very needed in our current situation," "the inter-disciplinary aspects of the program; the knowledge gained is easily transferable.

What aspirations did you have when you joined? In describing the aspirations they had at the time of starting the program, five mentioned they wanted to improve or develop as a teacher (e.g., "becoming a better teacher," "I wanted to incorporate critical thinking into the classes I teach at a community college"). Nine explicitly mentioned their desire for personal growth or love of learning (e.g., "My CCT experience was for personal development. It was the first time I was taking courses just because I wanted to, not because I had to; "I also wanted to further my efforts toward my true desire in life—that as a writer and novelist," "I am and was drawn to the ability to learn, gain knowledge," "My goal was to better express myself as an artist and writer and creative thinker," "To move beyond the place I was in, to improve my life." Two others mentioned the goal of obtaining a Masters, and two mentioned aspirations of obtaining a Ph.D. One who was already in another Ph.D. program enrolled in the certificate to give "an added focus in an area I'm interested in."

c. Program Impact and Change

CCT graduates were also asked a series of questions that addressed how the Program had impacted them. More specifically: (a) In what ways (if any) had these aspirations changed by the time you graduated? (b) What personal or professional changes do you attribute at least in

part to your studies and experience in CCT? (c) What evidence can you provide to show that your studies and experience in the CCT program contributed to those profession or personal changes?

In what ways have your aspirations changed? The majority of respondents felt that their aspirations had not so much changed, as developed, intensified, grown clearer and more focused. The program helped empower them to do what they had wanted to do. Along the way, however, many also expanded their focus to new avenues as well. For example, "By the time I finished classes, my passion for art was reinforced and I knew that I had to raise the bar for myself and dedicate even more time and effort to what really makes me happy, art." "I became a much better teacher for life. I have acquired more roles in other areas of education than I have anticipated." "I understood that my goals went way beyond becoming a better teacher. I wanted to carry over all that I had learned into my life." "My priorities and goals were clear." "It inspired me more" "I became more self confident & self-assured." "They didn't change so much as they grew or developed, perhaps perfected the ideas and ideals is a more appropriate description. The only problem was that I graduated with more ideas than I started with, so my to do list has grown." "They had not changed at all, but in addition to these aspirations, I also found new interests and challenges—both personal and academic."

Six of the respondents described the change as even more dramatic, noting that CCT had led to huge changes in their lives and self-understandings. For example, one after graduating has become a part-time lecturer in the College of Management. Another, notes that CCT gave "confidence to pursue a different career path, and has made me a stronger and more fulfilled human being." Four others write: (a) "CCT has drastically changed the way I think about teaching and learning. I now understand how the teaching of thinking is fundamental in my role as a high school teacher and I have the tools to develop and expand my own thinking as a writer and educator."   (b) "I was blown away by how much I learned that directly affected both aspects of my life—my work as a marketing and PR person and as a writer. I truly feel that my life changed. At the end of the program I was more directly working on my path as a writing and accomplishing things in that area that I never imagined." (c) "Hugely! After the program, I understood critical and creative thinking in ways I had NEVER thought of before. The program transformed the way I approach every problem with which I am confronted. And, the program changed the way I teach and what I teach." (d) "My entire way of thinking and learning changed. I became more cognizant of how I learn and new and varied approaches to solving problems.

Two respondents reported no change on this question (without elaboration) but then went on in later questions to discuss specific (positive) changes in their approach to teaching that they attribute to being in the CCT Program.

What personal or professional changes do you attribute to CCT? What evidence can you provide of these changes? All but one student described important personal or profession changes that they attributed to being in the CCT Program, as well as provided specific evidence for those changes.

Six graduates talked about the specific impact of CCT on their work as teachers: "I have revamped elements of (the) course I am teaching;" "A better teacher and educating and facilitating students to knowledge in a critical and creative way;" "the CCT experience has facilitated my teaching and solidly established me as one of the leaders in my field within my

large school district;" "I have a clearer understanding of my professional goals; what I'm trying to accomplish with my students. My focus is on learning environments, not necessarily on specific curriculum." "I have been told by my dean that this program of studies 'speaks volumes' for who I am as a professional and person. I was a significant participant in a committee that created new essay prompts for students attending orientation sessions. My colleagues were impressed with my ideas, some of which originated when I was a CCT student." Of these, half talked about their increasing role of leaders of their colleagues. One even became President of the Massachusetts Association for Gifted Education and has presented work at gifted education conferences.

Six graduates talked about the impact of the program on their work as an artist or writer—with increased productively, professional contacts, and presentation of their work. Some also are doing part-time teaching and nurturing of others. Among the three artists: (a) "I gained more confidence in my own artwork….[E]vidence would be my presentation materials, contacts, enrollment in an art class, application for a grant, etc….I have been a guest speaker on the creative process for the Creativity class." (b) "I also had dreamed of doing more as an artist. It wasn't until I was in the program that I realized how important that ambition was to me, and now I am selling my work." (c) "I became a photographer. I became a juried artist of the Front Street Gallery in Scituate and other artist organizations. This summer I won first prize for humor in Photography at the North River Arts Association." Among the three who have increasingly focused on writing: (a) "The CCT Program directly contributed to my concentration on writing. I am a co-founder of a new literary magazine on the culture of war in the 21st century and have been a lecturer in the College of Management….Our literary magazine, published annually, and my teaching professional writing and critical analysis are my evidence" (b) "I now see myself as a writer and as someone who has the ability to use writing to both expand her thinking and to add to my profession's discourse….[evidence cited is] my synthesis and my blogs;"(c) "My writing output has doubled and I have actively been working toward publishing opportunities….I have had positive feedback from agents on my book proposal (which was my synthesis project) on creativity exercises for writers. I'm also 50% of the way through a fiction novel as well and part of an incredible group of writers that encourage that part of my life….I have taught classes on creativity at Grub Street, an independent writing center in Boston. I also have had the opportunities to teach both graduate and undergrad writing and/or social media at UMassBoston, Mass College of Art and Boston University."

Six other graduates talked about the impact of their program at their workplace. They have been recognized at their workplace for their skills in using specific techniques for working with groups and enhancing problem solving. Among these six: (a) "I attribute my promotion largely to my experience in CCT. By being mindful of my coworkers motivations and emotional investments, and by employing some creative problem solving techniques, I was able to help encourage a positive and mutually supportive atmosphere at work;" (b) "Employers have been very interested in my degree—it's always something that we talk about in interviews. I feel it's a huge differentiator for me in my career. I have taught brainstorming classes at the companies I have worked for and in general I know that I navigate the challenging waters of the business world with a critical and creative eye;" (c) "I work in human services, specifically with the intellectually disabled. This degree has opened doors to jobs that I never would have considered…..These skills first got me noticed in 2004 where my resume was flagged by a CEO for the job of Guardian for people with disabilities. He needed someone who could lead teams and problem solve for more than 20 individuals. In 2007 I got a job as a treatment plan writer for

a mental health division of a large agency. My supervisor told me that she chose me because the job required a creative thinker and good writer, and based on my degree, I was the perfect candidate. This tremendous experience led me to getting involved in the training department and using my skills to teach and mentor new employees. Then I was promoted to a senior position where my skills as a problem solver and creative thinker are paramount to success (and survival)"; (d) "On a practical level, I would say that as a direct result of my CCT studies, I am able to run sessions on problem-based learning within the library context. I developed new tools and ways of interacting with students around information literacy."; (e) "After CCT, I threw myself into several new areas—including diversity work and leadership development. I have been promoted to a senior administrative position at the college….I have utilized groundrules, empathic listening, all those great problem solving techniques from PBL, dialogue concepts from Allyn's class and much more;" and (f) "I was assigned a project at work that I had no experience in, but my boss appreciates the common sense and "fact finding" approach that I take, when tackling new projects."

A number of the graduates in their responses comment on the *multiple* effects of CCT in their lives—both personal and professional. For example, one student (already mentioned above who has become a leader in her field of teaching) speaks eloquently about how CCT not only helped her in "perfecting the craft of teaching", but also led her to establish a new business, which has now started to thrive, and to be more effective in helping her own child with autism spectrum disorder. As she writes: "Moreover, and unforeseen, was that these critical and creative skills have proven essential to the treatment, teaching, and caring for my young son, who is now thriving though he is on the autism spectrum. My current understanding of thinking visually and the need for alternative communication is a direct result of my experiences at UMassBoston. I would go so far to suggest that any parent of a spectrum disorder child should take some CCT coursework to gain a better understanding of alternative processing."

d. Overall Rating of the Quality of the Program

When asked to rate the overall quality of the program, 18 of the 21 respondents (86%) rated it as excellent and 3 others (14%) as "good." 12 simply said "excellent" with no further explanation, but others added further comments: "I'm so glad I participated in the CCT Program. I got to do some amazing projects and got to focus on growing as an individual and reflecting on that journey. That's something a lot of programs don't give you time for," "Everything about the program was super and necessary," "I regularly tell people that it was by far the most effective program I have participated in," and "It truly changed my life." Of those that said good, two added comments: "Higher writing and research standards and more updated references would have made it 'excellent.'" "The program is unique so it's hard to judge."

e. Suggestions for Improvement

When asked to make suggestions for the ways the program could be improved to serve students with your aspirations, the majority (14 of 21) did not offer specific suggestions, but stated the program was doing a great job the way it was. Examples of some of these comments included: "I think you're perfectly designed for students like me," "I believe the program is flexible as it is and do not have any further suggestions," "I think the CCT courses are great. I wouldn't make any changes." "I wouldn't change anything," "Keep doing what you're doing…it is the right path."

The suggestions for improvement, among those who offered them, were diverse in nature rather than converging on one or two core issues. Two commented on strengthening the advisory support system ("While I received excellent support in completing my synthesis, I think I would have benefited from connection to a faculty in the art department;" "perhaps a small group advising program that met regularly to discuss aspirations and goals with your peers." One graduate mentioned that "there were a limited number of CCT electives available, and I would have liked more arts-focused options"; another mentioned CCT should "continue to offer a variety of electives and offer some more flexibility in terms of what type of classes a student can take." One graduate (already quoted in the preceding section) said "I would increase the research and writing standards. The ability to do these well is helpful in any field." Another citing the benefits of face-to-face courses, said "I'd prefer the program did not go to a fully online version." Finally two graduates commented on the importance of "more publicity about the program to the right people;" "I believe that CCT is the 'best kept secret' around…. Somehow, UMB needs to take his program more seriously and promote and market it better to those daunted by the MBA process and coursework."

2. Responses from current CCT students
a. Background questions

We received responses from 9 students who are currently enrolled—7 who are in our full Masters Program and 2 who are in the graduate certificate program (which is a response rate of approximately 25%). All but 1 of the respondents (8) had completed at least 4 courses in the program; one respondent had only completed one course. A little over half (5) of the respondents had completed all but 1 or 2 courses in the program. Thus, for the most part, their experience with the program was considerable.

Three students had a focus on creative thinking in the workplace; two were focused on critical and creative thinking in higher education; two on critical and creative thinking in the arts or design thinking; one on Science in a Changing World. These results reflect the diversity of interests and applications of CCT that is part of the Program already commented on by the CCT graduates.

b. Enrollment Questions

We also asked our students a series of questions about how they heard about the program, what information led them to apply, and what their aspirations were at the time of initial enrollment.

How did you hear about the program? Seven of nine respondents mentioned learning about the program through searching online and viewing the CCT website. One worked at UMB and learned about it through being here as well as the website. Another learned about it from a CCT alum and from attending an open house, and meeting Nina Greenwald. One respondent did not provide a specific reply.

What led you to apply? When asked about what led them to apply over half (5) mentioned they were intrigued by program focus and mission and the variety and flexibility offered by the program. For example: "Its focus on creativity and its online course offerings," "The program provides a grounding in essential information while also letting me pursue my own interests and ideas," "The focus on process, and relevance to multiple disciplines," "I am a

critical and creative thinker naturally; I wanted to back up my natural ability with an academic degree," "Just the topic and focus of critical and creative thinking interested me."

Four mentioned trying one or two courses, and then applying. "Nina Greenwald led me to try one course, and taking a course with her led me to apply to the program. She was supportive, engaging, and had high expectations." "After taking the course, Thinking, Learning and Computers, I decided to pursue the certificate. I truly enjoyed the Class and the Professor." "The fact that I could make a 'try' and attend two courses before having fully applied and integrated the program." One student mentioned multiple reasons: "Desire to improve my teaching practices, personal growth, and need to participate in change at work.

What did CCT offer beyond what might be gained through other programs? Elaborating on the themes already mentioned in the previous question, four students mentioned that CCT was distinctive because of its broad applicability and flexibility. For example: "Wide application of content and program flexibility drew me in. I had only considered single domain programs before this one;" "I liked the fact that students and professors from a variety of disciplines are involved. Few other programs offer that type of diversity; "CCT provides knowledge and skills that are applicable across any number of situations and settings." Two commented on its special opportunities for personal growth: "A sense of validation from faculty and the ability to incorporate professional interests and personal exploration in academia;" "CCT offers a completely different perspective on looking at yourself and how you view the world around you. I have learned more about myself in the CCT program than in 4 years of education for my Bachelors Degree and almost 3 years of education for my Masters degree. I am incredibly grateful for this program and am honored to be part of this." Another offered multiple reasons including the responsiveness of the director ("the director of the department has been fully available to respond to my questions….and has proven attention, smartness, and flexibility (that was not the case elsewhere)." This student also appreciated that the courses could be taken on-line as she was outside the country. One student did not respond; and one regretted not joining another program because "CCT needs improvement on student support services."

What aspirations did you have when you joined? In describing the aspirations they had at the time of starting the program, four mentioned they wanted to improve or develop as a teacher (e.g., "to learn about critical thinking practices to incorporate them into the courses I teach," "to teach children to think more critically and creatively," "to integrate what I'm learning in a new venture and teach those skills to youth," and "to promote learning and development for the college students I work with.") Three were seeking tools to help them improve their workplace: "I was hoping to find a new way to be able to deal with my challenging work environment," "I was seeking tools for helping colleagues and other fellow humans be critical and creative thinkers," and "gaining tools and developing skills in order to facilitate creativity at work." Several mentioned goals of personal growth as well ("hoping to be able to find some insight into why I react the way I do;" "Personally I hoped to incorporate critical and creative thinking in all aspects of my life; "fill my desire to connect all aspects of myself." Some others desired a Masters and hoped the program might new professional doors ("I would like to apply the degree to my resume and see what opportunities will open up.") Some combined multiple reasons of professional and personal self-improvement.

c. Program Impact and Change

Current CCT students were also asked a series of questions that addressed how the Program had impacted them. More specifically: (a) In what ways (if any) have these aspirations changed at this point in your studies? (b) What (if anything) stands out for you as distinctive in your studies and experience in the program so far? (c) What evidence can you provide to show that your studies and experience in the CCT program are contributing to those profession or personal changes?

In what ways have your aspirations changed? Most commented that their aspirations had not changed, so much as "broadened" and that they had become more confident. For example, they note: "Thinking big has become a way of life. I can see so many potential entry points for improving what I am doing and work done within the organization where I work." "These aspirations have expanded since I now learned how versatile my critical and creative thinking skills have become." "In addition to developing my critical and creative thinking skills, the program has helped me deepen my commitment to reflective practice." "Now I'm wondering if there's a way for me to make CCT more central to my career, perhaps starting up my own consulting re: strategic planning and organization development for nonprofits." "I suppose that those aspirations did not change; they just may have transformed. This program has provided me the desire to pursue those aspirations even further and to accomplish them."

One student expressed concern that Nina Greenwald's role in the program had decreased, as the student found her "inspirational to work with" and a mentor. The student commented "UMass should have done whatever it could to utilize Nina's skills and talents to the fullest extent possible." One other noted "CCT has helped me to grow in my writing and thinking process, but I believe I could have received more."

What (if anything) stands out as distinctive in your studies in the program so far? Students highlighted many distinctive qualities of CCT course work that they greatly valued. These included the emphasis on collaboration "especially the amount of collaboration that takes place between individuals that might not ever come together outside of the CCT Program," the encouragement of risk taking, and listening to others, that the program is "learning centered" and the commitment of faculty to support student learning. They also appreciated that each course made contributions to their development in different ways: "each course changes me in a new way," "all the courses seem to connect while providing different awareness." The program allows students to "self-actualize" and brings the student toward "breakthrough, awareness, and independent thinking." Across the students, different courses were singled out for praise: the creative thinking course was regarded as a "transformative course" and the dialogue and critical thinking courses were described as "amazing." Another singled out the opportunity to take part in the Graduate Women's Studies Consortium, the New England Workshop on Science in a Changing World, and classes with Nina Greenwald.

What evidence can you provide of these changes? Students cited numerous examples of evidence of the ways that the program has contributed to professional and personal changes. As a result of CCT 692, one student took leadership in a grant project with a team of teachers. Others mentioned changes in their behavior at work, where they consider more options before reacting, are more patient, better listeners, and take "thoughtful reflective approaches to challenges" and help "resolve developing problems." Another has applied new skills at "my church (leading a process to re-vision the worship space), volunteer work (devising a process for

collaborative knowledge-building…among an alliance of environmental organizations), and at work (designing a program—subsequently funded by the national Oceanic and Atmospheric Administration)." Another noted increased self-confidence, the ability "to see further" and to take projects "to longer term than in the past."

d. Overall Rating of the Quality of the Program

When asked to rate the overall quality of the program, 8 of the 9 respondents (88%) rated it as excellent and one simply said "no opinion." All those who said excellent, added further comments. These included: "It has exceeded my expectations and I'm grateful to the caliber of faculty and students selected to join the program. It's different from all grad programs on campus, including those within the education department." "Excellent – though I will say the rigor of course vary somewhat. This is sometimes a good thing, sometimes disappointing." "Excellent. I recommend it to anyone who will listen." "Excellent. I have learned a tremendous amount; far more than I could have expected, and more than many of my friends and colleagues have through attending other programs." "Excellent. I was especially inspired by all of the faculty's commitment to the program and the obvious effort they put into modeling the approaches they espouse." "Excellent. This program has been my new energizer."

e. Suggestions for Improvement

One current student simply said "They are already doing an incredible job. Keep up the amazing work." The rest (8) offered some (diverse) suggestions for continued improvement. Two focused on providing more academic support—one thought developing a critical reading and writing course would be useful; another mentioned strengthening the academic support so students can be successful along with more structured advising. Two thought the program was wonderful, but mentioned the program was "under-resourced, and could accomplish even more with a larger budget and more faculty;" "The University should support the CCT program with more money and resources." Related to this, one wished we could "offer more courses, more often. It is difficult to plan and select courses when they are offered so sporadically." Several mentioned specific courses or having more electives would be useful, including a critical reading and writing course (mentioned above), more courses relevant to CCT and the workplace, credit for independent study/active or simply more electives. One student focused on the important of continuing to connect "current students with CCT graduates."

3. Responses from non-CCT students who have taken courses
a. Background questions

We received responses from 31 non-CCT students who had taken one or more CCT courses. Of these students, 23 were in other graduate programs: 19 were in other graduate education programs (Instruction Design, Leadership in Higher Ed, Secondary Education, Elementary Education, M.Ed. non-licensure Program, Curriculum & Instruction, Track A), two were in graduate biology programs, 1 in a graduate sociology program, and 1 in an MBA. Eight others were not (yet) in any graduate program.

The majority of these students (24) had taken simply one CCT course, but a few had taken two or three. The course most commonly taken was CCT 618 Collaboration and Organizational Change (taken by 9 students). Four each took one of our "core courses;" 601 (Critical Thinking), four took 602 (Creative Thinking), and four took Critical or Creative Thinking online; and three took 692 (Processes of Research and Engagement). Two each took one of our electives: 612 (Seminar in Creativity); 627 (Anti-racist education); and 652 (Children

and Science). One took humor, another facilitation, and another mentioned "617", but possibly is intended to refer to 616 (Dialogue Processes), 618 (Collaboration and Organizational Change), or 627 (Anti-racist Education).

b. Enrollment Questions

We also asked our students a series of questions about how they heard about the program, what information led them to register for the course, and what their aspirations were at the time of initial enrollment.

How did you hear about the program? Unlike the students who matriculated in the CCT Programs, few (5 of 31) first heard about the program on-line through web searches. Instead, the course was recommended by faculty advisors their program, or colleagues/friends (10-12), and/or they learned about it from the graduate catalogs (10).

What led you to register for the course? When asked about what led them to enroll, many (11) mentioned that the course description "sounded interesting" and appealing. For some, the course came highly recommended by others, including other faculty or advisors. One mentioned "I wanted a class outside my degree program that made me think in a different way."; others thoughts it would give them valuable skills. A few cited the convenience of an on-line course or that CCDE courses were cheaper, or that the course was a requirement for their program.

c. Course Distinctiveness

Non-CCT students were asked: What (if anything) stands out for you as distinctive in this course in comparison with those in your program? Students generally commented that the courses were distinctive in the focus on collaboration, being student-centered, and providing them with new ways of thinking. In their words, "Though this may sound obvious, it required much more thinking and analysis than many others," "the focus on critical thinking – which is sorely lacking in just about any other course I have ever taken," "Just a very different way of thinking and looking at things than my tradition business-focused classes. I think this type of course should be required for everyone going through a more corporate-focused program because it makes you look at things so differently." A student in Professor Millman's course liked how it "felt more like an interactive conversation" and that the Professor took time to write extensive comments on writing assignments." A student in Professor Smith's Children and Science mentioned that it was distinctive to think about science "from the point of view of non-scientists." One student in Professor Blum's course mentioned the high quality of the instructor as distinctive and another "the more interactive, confrontational (in a good way) and personally involving than general education courses." Still others found the "direct inclusion of creativity" to be different from other courses, along with "in-depth focus on diversity" and "new ground-breaking methods of managing and initiating organizational change." Two students liked the diversity of perspectives from having 3 different professors in the CCT course they took one summer. Others mentioned the emphasis on personal involvement, hands on interactive activities, and "truthful discussion" to sharpen critical thinking.

d. Overall Rating of the Quality of the Course

When asked to rate the overall quality of the course they had taken, 90% had favorable ratings (excellent, very good, good). More specifically, 18 of 31 respondents (58%) rated it as excellent; 2 rated it as "very good"; and 8 as "good." Two rated the course they took as fair, and one as poor. The latter three appeared to be courses that students had taken on-line; part of the

dissatisfaction was the difficulty they found with engaging with collaboration in that format. Two suggested they would have preferred a face-to-face format. One student who rated a course as "good" replied: "It had excellent aspects and weak aspects. Thought it was too demanding and too many requirements. Would like students to have more freedom to explore ideas without requirements or the threat of "losing points" or getting a bad grade."

Many students elaborated on their favorable ratings with comments about the usefulness of the materials in their future lives or the high quality of the professors. For example: "Excellent, I loved the course and I kept the materials which I use a referral tool at my job." "Excellent, What I learned in it has had a tremendous impact on the way I see group and organization dynamics and tools I try to use for organizational change." "Excellent! Carol was an amazing teaching, providing students with the most thoughtful feedback. Her readings were interesting and on topic. Her classroom activities were interactive and on task. Her class was one of the most influential during my time at UMB. "Excellent! Great job Jeremy Szteiter, Peter Taylor and Bob Schoenberg!" "I think the professor, Bob Schoenberg, was exceptional. Truly a master teacher that allowed everyone to ….really learn!" "Courses were excellent and life-altering." "Excellent! Again, I was sad and torn when I had to transfer to the MEd program…." "Larry Blum is an excellent professor…he is just one of the best that UMB has to offer."

e. Suggestions for course improvement (to serve non-CCT student needs)

About half (15) of the respondents had no specific suggestions for improvement, often adding specific comments about how the course was effective the way it was and/or that they enjoyed the experience. For example, "I loved this course. It was one of my favorite classes I took while doing my Master's degree." "I think that the course actually went very well. I was surprised by how much I learned from it. Most of my graduate courses didn't do much to help me grow as a teacher of middle school students, but this one did even though it wasn't an education course." "I do not have any; this was the only CCT course that I took and I enjoyed it tremendously."

The other half, however, did offer specific suggestions for improvement. Although the suggestions and concerns are typically quite different from student to student and therefore hard to catalog, these include: (a) four focused on better marketing (e.g., "Market it-I think lots of people would be attracted to this masters program, but don't know what it is from the title;" "Advertise better. I wouldn't have known the program existed since I'm an online only student;" "Cross-pollinate the course work with Ed. course work and make connections to the MA frameworks and Common Core Standards. Also, it would be great if the MA Dept. of Elementary and Secondary Education would recognize a CCT Masters as very valuable and applicable to a teacher's work;" "I think the course served my needs well, although I had to find it first. The INSDSG [Instructional Design] program could offer a list of suggested non-INSDSG electives"; (b) a couple wanted more timely or simply more feedback on writing; (c) one mentioned "more schedule availability options;" (d) two had suggestions for new foci for courses (e.g., expanding children and science to focus on adult learners; having a course for teachers to work on classroom skills); (e) one suggested "CCT 692 needs to be streamlined. It is conducted through many channels—blackboard, google, wikipages…I believe all these features can be merged into one platform;" and (f) two suggested having even more real world applications in their courses "tying in the course to real-world current issues;" "A greater focus on application and comparative approaches…I would have liked to learn more about the history and development of [CCT]." A couple of students commented on issues for online courses: One

student commented that collaboration was difficult with an online format; another said "I LOVED this class" but mentioned that she thought instructors could improve by offering "a few different options for the live online sessions so students can accommodate everything going on in their lives." Finally, one student thought the book used in a course was biased, and another complained that the course was "incredibly time consuming and demanding—too much work."

4. Reasons for withdrawal from the Program
As mentioned above, no responses were received to surveys sent to students who took all courses but did not finish the capstone synthesis and to other students who matriculated but did not finish. Table 4 summarizes the reasons for students' withdrawal from the program based on notes in the Program database and the Program Coordinator's knowledge. The reasons are varied, but we might conclude that: a) health, family, and work reflect the challenges that our older students can be expected to experience; b) immediate follow-up of students who do not keep their status active is needed if the Program is to draw useful lessons from their withdrawal; and c) support is needed for students who took all courses and plan to return to finish the capstone synthesis.[46]

Table 4. Reasons for withdrawal from the Program

	Numbers[47]
Students who took all courses but did not finish the capstone synthesis	
Family (e.g., caring for grandchildren, for dying parent)	3 (2 intend to return to finish)
Moved interstate or abroad	2 (1 intends to return to finish)
Health and finances	1
Work	1
Other	1 (intends to return to finish)
Students who matriculated, but did not finish their CCT studies	
Changed program (e.g., to M.Ed. program for licensure)	6
Barely started program	4
Withdrew after one or 2 semesters; no explanation given	4
Changed from CCT Certificate to Masters/doctoral program	3
Finances	3
Health	3
Family	3
Moving	2
Work	2
Interests shifted away from studies	1
Too many incompletes	1
Plans to return	1
Other unknown	3

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[46] These "A.B.D." students are encouraged to participate in the "marathon days" at the end of each semester and in the writing support group. The response has been positive, but the numbers actually participating is much smaller.

[47] Three students are represented in more than one category, e.g., health and family.

II. Self-assessments

5. Conclusions from Surveying Current and Former Students

In summary, the picture that emerges from the survey responses, from CCT graduates, current students, and non-CCT students who have taken our courses is an exceptionally positive and favorable one. Overwhelmingly, students who responded perceive the CCT Program to be highly distinctive and effective in developing in them both new skills and ways of thinking that contribute to their personal and professional growth in ways that many other courses do not. They report in specific, eloquent detail, on the ways that the CCT had changed them and their lives as parents, teachers, artists, writers, workers in human services, or the business world. Indeed, we as faculty in the program find their testimonials and descriptions of their many accomplishments quite inspirational and moving. One of the main concerns (especially among current students) is that the program is currently "under-resourced;" it would be helpful to have more program faculty (including, as one comments, continuing to involve Nina Greenwald). We also acknowledge their comments that this gem of a program could be better marketed to others. Although students who have withdrawn from or failed to finish their studies provided no responses to analyze, our own accounting of their reasons for withdrawal does not point to any systematic shortcomings.

D. ISSUES ADDRESSED IN ANNUAL PROGRAM REPORTS

Periodic self-assessment of the Program by the core faculty is evident in the annual reports submitted to the Graduate Dean since 2007 (with copies to the Department Chair, who draws from them in writing the Department's report to the College Dean). These reports are included as Appendix F. Together with earlier informal reports and the various reports involved in the 2002-3 AQUAD review have been made available to the CCT community at http://www.cct.umb.edu/aquad03.html. The spirit of ongoing assessment and response is conveyed by Table 5, which extracts from the Annual reports a sample of the key challenges and subsequent developments.

Table 5. Sample of challenges and subsequent developments drawn from recent Annual Reports

2007-08	2008-09	2009-10
1. Ensure **coverage of CCT teaching and administration** given that the GCE has no plan to seek authorization for a search for a second regular (tenure-track) member of CCT and is not committed at this point to continuation of a CCT lectureship (50% or 100%) after Nina Greenwald's three-year position ends in August 2009.	a. Implemented a **multi-year course schedule** that ensures that, even if the CCT lectureship position is discontinued at some point, matriculated students can still be served by regular CCT faculty and have a maximum number of electives to choose from over a two-year cycle. b. Enhanced the **coordination with the non-licensure track of the M.Ed. program**, now called "Learning, Teaching and Educational Transformation," so as to draw more M.Ed. students into CCT electives, to allow faculty to borrow ideas (e.g., capstone options) from the other program.	Nina Greenwald's position extended to August 2010 [but only on a course-by-course basis thereafter]. a. Maintained a **multi-year course schedule…** b. CCT coordinator continued as LTET coordinator [to give new C&I Chair time to arrange leadership from within the Teacher Ed. Program —but this didn't happen].

2007-08	2008-09	2009-10
2. Clarified the administrative division of labor among core faculty. The biggest gaps: a. whether a 100% replacement will be funded whenever Peter Taylor (as the only professor full-time in CCT) takes leave b. whether CCT faculty members from CLA can serve as Prog. coordinator c. staff assistance for the program coordinator with the myriad of particular administrative needs of a small program	The administrative division of labor established in the previous year places most of the administrative burden on the Program Coordinator. c. Funding cobbled together [see below] to support a 10 hours/week **Grad. Assistant** in 2008-9 who would continue working for CCT after graduation.	b. This issue is moot at the moment because the two core CCT faculty members from CLA are a Department Chair and Assoc. Chair. c. Program assistant developed into a **50% position** funded by CCDE/UC (and from 1/15/11 a 100% position).
3. Funding	Established a **separate CCT ESS account** so that funds received from CCDE… can be budgeted to support guests in CCT courses, events, publicity, a program assistant, etc. and any unused funds can be carried over to the next year [see 2c].	
	Expanded the Certificate **partnership with Continuing Education** (CCDE) to increase enrollments, promote the SICW emphasis, initiate a CCT M.A. program starting in August for students in China, offer Certificate courses on Cape Cod [and secure CCDE funding for 50% Program assistant; see 2c.].	… the goals of increasing online offerings and enrollments (targets were exceeded)…
4. Main **shortcoming of the CCT curriculum**: some students get to the capstone synthesis course but are not well prepared to write a major paper and/or do not finish during the synthesis semester	The Program: a) initiated an **entrance interview and a mid-program check-in**, [drawing] attention to a **series of measures designed to support students through to timely completion of their degree**; b) explored various forms of **writing support**; c) regularized the scheduling of… synthesis-completion sessions each semester ("**Marathon days**"); d) Piloted the practice of students assembling a "**Reflective Practice Portfolio**" during the course of their CCT studies…. [Nevertheless] the significant backlog of students who have finished all course work, but not their syntheses, remains.	b) established a weekly writing support group d) promoted the Reflective Practice Portfolio. Each student now has a private wiki to prepare this portfolio. …established an expectation of completion of capstone synthesis within a year of taking the synthesis seminar.

2007-08	2008-09	2009-10
5. Attracting applicants to the Program and advising them through to matriculation. a. Open houses and CCT Network events are publicized to people who have inquired about the Program; the experience of the events complements the regular email and phone responses to inquiries. Graphic content has been added to the CCT website, with links to the associated activities. The CCT news (monthly email bulletins) has been revived. b. Publicity packets (bookmarks, flyers, etc.) have been prepared for distribution at such events and records made of who takes them. Followup is planned to see whether these are being used productively. c. Inquiries are tracked in CCT's database with periodic followup emails and calls made. d. The CCT Network is intended to support recruitment by stimulating alums to mention the Program to others and, eventually, to coach alums in hosting outreach events in their own communities and workplaces. Many hours have been spent tracking down active email addresses and phone numbers for alums; more are planned.	Efforts to boost recruitment have had limited yield; they need assessment and a possible shift in priorities (e.g., making greater use of the CCT Network events and social network site to coach alums to become active in outreach and recruitment).	Efforts to boost M.A. recruitment stalled (even as Certificate numbers and overall course enrollments grew). After this year Nina Greenwald's appointment will be on a course-by-course basis, so she cannot be expected to continue to lead recruitment. The CCDE-funded CCT assistant has been following up on indications of interest from students taking online courses and—once he has his required teaching in place—may make greater use of the CCT Network events and social network site to coach alums to become active in outreach and recruitment.

E. FACULTY REFLECTION ON EXIT SELF-ASSESSMENTS AND SURVEYS

The requirement that graduating M.A. students complete an exit self-assessment (see II.B above) was instituted a decade ago to document how the Program facilitates student success in learning, where success is defined in term of becoming a reflective practitioner and life-long learner. In preparing this self-study, the core faculty experimented with a CCT-style activity to use this form of evidence of student learning to reflect not simply on our teaching but also on the Program's strategic directions more generally. The "future ideal retrospective" activity, described in Appendix G, led us each to define directions or themes (Table 6) that, taken together, will help guide us as we endeavor to maintain what has worked well and to address shortcomings and challenges, as identified by this self-study and the AQUAD review process as a whole (see section III.A).

Table 6. Strategic Directions emerging from Faculty Reflection on Exit Self-assessments and Surveys

Themes from participant 1	Similar themes from participants 2-4		
	2	3	4
Frameworks for structured reflection on what tools & practices students are taking up/on/away	Support reflection on CCT Toolbox	Help students be aware of what they are taking away (tool box)	Providing structure that help students to capture CCT experience & tools, and prepare them for practical application
Faculty work with students to be articulate about deep themes of self-directed & life-long learning	Helping students meet thinking challenges	Articulate and reinforce basic principles of the program	
	Helping students meet Health/life challenges	Recognize students' struggling	
Peer relationships (around diversities) facilitated in existing & new ways		Peer community	
		Diversity of perspectives	
Vertical network: alums support alums overcoming resistances in workplaces and get a recharge from a guest role in coaching current students	Keep/maintain/expand alumni and peer interactions to support community	Alums and current students	

Within-institutional connections lead to respect for a modest sustainable CCT niche at UMB	Improving Administrative-CCT Relations	Connecting CCT to other units/fields/resources (policy, philosophy, economic development, library)	Strengthening and clarifying internal connections that support achievement and community
	More faculty resources	Putting the word out about CCT/valuing CCT within UMass	
Externally recognizable products generated through faculty strategies & guiding students to UMB resources	Improving Clarity and consistency in Program Information and Standards	Taking what is learned in CCT out to the world	Tightening the screws through consistent communication and accountability of academic expectations across courses
	Help with writing process	Difficulties in focusing	
Marketing plan finds the right people (mid-career, adult ed. & flexibly not focus-ed in one field)	Better marketing		Tooting our own horn about unique and inviting culture of CCT
			Building outreach opportunities while innovating and invigorating CCT visibility

F. PERSONAL STOCK-TAKING BY PROGRAM COORDINATOR

The 2002-3 AQUAD self-study included an Appendix on the "General conditions for sustaining a small interdisciplinary graduate program like CCT whose faculty span departments and colleges." That appendix began by noting that:

> 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.

In light of CCT resources and workload, the Graduate Dean decided after the 2002-3 AQUAD review that only one faculty member dedicated full-time to the Program was not enough (see Preamble). Nevertheless, that situation persists as we enter this new round of review. Facing a review and a likely future in which he would be the sole faculty member dedicated full-time to the Program, the Program Coordinator, Peter Taylor, took stock of this situation:

In winter 2000-1 and in May 2003, the CCT Program was slated to be wound down, but wasn't. At many junctures over the last decade I have thought that the core faculty should consider advocating that course of action. I won't review here the circumstances or what happened that led to the Program continuing. Instead, let me say that, at this point, I want CCT to continue and the new Science in a Changing World (SICW) track to be given a chance to establish itself gradually. (Why gradually? If SICW had to stand alone, numbers in the SICW track would have to rise quickly to compensate for the loss of students from the regular CCT track in the precapstone/capstone research and writing courses, which are required for both tracks, and in SICW electives.)

A number of conditions have led to such a future seeming feasible even though the number of students matriculating in to the M.A. track is much lower than at the time of the last AQUAD review and, thus, the appointment of another regular faculty member assigned full-time to CCT is even less likely than it was then:

1. Since 2005 I have established cross-program and cross-college opportunities to teach in the area of my original appointment, namely, critical thinking and reflective practice about science in its social context. (Indeed, my teaching beyond CCT was necessary for there to be enough CCT courses for Nina Greenwald to teach under the lectureship contract she had renewed from '04-05 through '09-10.)

2. The Program now offers its required courses face-to-face every third semester rather than once a year. This frees core faculty other than myself to take turns teaching the capstone seminar and seeing students through to completion of their capstone synthesis. It also ensures that the courses exceed the minimum enrollment even when matriculation rates are low. (This change was instituted in the face of uncertainty about the continuation of the lectureship position; without the change, the Program could not guarantee to students admitted that courses required for them to graduate would run.)

3. The partnership between CCT and CCDE, now University College (UC), has grown so that it now funds an assistant CCT coordinator position. The assistant coordinator is gradually taking a share of the myriad administrative tasks of running CCT, a graduate program that now includes a significant number of part-timers teaching online and face-to-face sections through UC.

4. Dividends that UC provides for courses taught through them cover all Program expenses, such as visiting speakers, program publicity, software updates, stipends for second readers of capstone syntheses, etc.

5. Creation of the SICW track has expanded the number of regular faculty who can be brought into discussions about the intellectual, pedagogical, and program-planning aspects of the Program. (This compensates somewhat for the lack of another regular faculty assigned full-time to CCT.) Moreover, the creation of a 50% UC-funded assistant for the SICW track, starting 1/23/11, will help in promoting and administering this track.

To the extent that a Critical and Creative Thinking Program is needed because there are students who enroll in it and register for its courses, it is possible, given the five favorable developments above, to sustain a reliable schedule of required courses and electives without additional State-funded resources. We can serve the recent average level of M.A. and Certificate students in the regular and SICW tracks—indeed, this could rise from 15-16 in total to 15 M.A. and 15 certificate students—as well as serve a growing number of students from other programs (especially the non-licensure M.Ed. track, Instructional Design, Public Policy, and Honors).

At the same time, I remain open to a range of different options for the future (see section III.B below). This openness stems, in part, from reservations I have about the simply continuing the Program, such as:

• It remains to be seen whether the two assistant coordinator's contributions will enable me to protect 1/3 of my work-time (and all of my leave or grant buyout time) for research and writing (especially in the crucial winter and mid-summer periods for grant applications). Another way of stating this: Will I be able to limit my administrative and other service during the academic year to 1/3 of my work-time (plus pro-rated amount for any administrative course releases)?

• The growth of UC-funded online and winter/summer courses involves part-time instructors, most of whom do not have doctorates—is this acceptable to the University in the long run?

• When I and the other core faculty, Arthur Millman and Carol Smith, have been on leave, our departments have funded the teaching of our required CCT courses. Will the departments maintain this commitment to CCT for future leaves and when any of us retire or leave the University? Is it OK to rely on University College to step in and fill any teaching gap?   Similarly, for my administrative and program leadership roles.[48]

• When UC funded a 50% assistant coordinator position in fall 2009, CCT had received no state-funded staff support or part-timer teaching or CTF funds since the early 2000s. The only state-funded support has been one or two ¼ time Graduate assistantships from Graduate Studies for some years, a surplus laptop, and funds to bring in external AQUAD reviewers. Is it responsible to students to admit them to such an under-funded Program? Is it ethical for the Program faculty to stand by while its students pay the same as students in other programs, but have fewer institutional resources allocated to their education?

• CCT advertizes itself as promoting the use of "critical and creative thinking to develop reflective practice as we change our schools, workplaces, and lives." Without going into details, the Program has not been successful realizing this aspiration in our own organizational setting of UMB. At least since the program review of CCT in 1994, there seems to be little evidence from decision-makers of data-driven, reflective practice (or institutional learning), just treatment of underserved minorities (in this case a small cross-college program), and respect for people's individual career and life projects (including support for faculty members to preserve a balance between scholarship, service, and teaching).

To summarize, continuation of the Critical and Creative Thinking Program would provide opportunities for students' professional and personal development as well as a basis for me to extend the work I came to UMass Boston to pursue. Reservations about this course of action make me open to other options for CCT and SICW (see section III.B). I often find myself wondering if continuation of the Program is the best way for me to make contributions as a UMass Boston faculty member.

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[48] In 2008 I began to build links between CCT and the non-licensure M.Ed. track so that, if I took another position and/or CCT were wound down, CCT students could shift to the non-licensure track in order to graduate. The assumption was that the Teacher Education program, the flagship program of the College of Education, would maintain resources for all its M.Ed. tracks. This has not turned out to be the case; administration of the non-licensure M.Ed. track depends almost entirely on faculty (now including myself) and lecturers with primary commitments to other programs.

III. PLANS FOR THE FUTURE

A. PROPOSED REVISIONS TO MISSION, GOALS AND OBJECTIVES

If the CCT faculty were asked today to prepare an AQUAD planning document for the next seven-year cycle, its mission, goals, and objectives would still build primarily on the framework laid out in the June 2000 plan and updated in minor ways in 2003 and 2007. 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. 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.

Included in this section are proposed revisions to the goals and objectives that were generated from the faculty review of mission, goals and objectives from the AQUAD plan (section II.A and Appendix C, which also provides rationale for the changes. Objectives for which no change is proposed are not included here. Deletions are indicated by strikethrough; additions by underlining. [49]) Further revisions to the goals and objectives might follow from discussion during the AQUAD review process and by the CCT faculty afterward of: a) objectives that were not met well (some of which are excerpted in Table 3 in section II.A); and b) the strategic directions that emerged from faculty reflection on exit self-assessments and surveys (see Table 6 in section II.E).

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 process and outcomes that reflect the Program's educational philosophy.

> c. 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."

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

> ~~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.~~
> b1. Promote the new Science in a Changing World track made possible with advising input from faculty in CSM and CLA.

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[49] Note: in July '10 Grad. College of Ed. (GCE) became College of Ed. & Human Development (CEHD). This is reflected here.

b2. Coordinate with other Programs and tracks so that CCT courses can serve their students, e.g., http://candi.wikispaces.umb.edu/LTETtrack and possible CAGS in Ed. Leadership.

c. Maintain a reliable roster of CCT courses allowing students to ~~specialize in the four areas listed in the Program mission and~~ define specific areas in which they explore their CCT-related interests, especially the certificate foci of Creative Thinking at Work [and] Science in a Changing World~~, and Gifted and Talented Education~~.

A3. Develop and revise Program offerings in emerging areas of social relevance, faculty specialization, and use of educational technology.

a. Develop and offer regularly courses that involve critical and creative thinking in the areas of i) science in the context of conceptual development and social change/ 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).~~ ii) creative thinking at work, including both putting one's creative thinking into practice and changing one's workplace interactions & organization.

b. Establish foci for promotion of the certificate program, "Science in a Changing World," and "Creative Thinking at Work," ~~and "Gifted and Talented Education"~~ to be offered in collaboration with Continuing Education and a CCT outreach unit.

B. To establish planning parameters that allow CCT faculty to determine the best use of their experience and energies and adjust operations to work within those parameters.
B1. ~~Set or settle parameters for CCT's role in the GCE~~. Set parameters for CCT's operations that conform to resources available (primarily in CEHD, CCDE, CLA) and institutional guidelines.

c. Number of full-time lines with primary responsibility to CCT, and replacement when faculty are on leave. (Having two full-time lines is particularly important for CCT's mission and for the full realization of this plan , as is the continuation of the CCDE-funded assistant coordinator position.)

e. ~~Emphasis on the synthesis option, not the thesis, for the M.A. capstone.~~ Emphasize synthesis options that allow students to finish during the final synthesis semester, or during the following 12 months.

B2. Achieve recognition of CCT's mission and the other planning parameters by other ~~GCE Programs and Departments~~ units, within and beyond CEHD.

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

b2. Timely attention to possibilities for additional or joint lines.

c. Explore possibilities and make the case for institutional support at UMass Boston of CCT's mission outside the CEHD.

c2. Timely advocacy for continuation of CLA commitments when core faculty are on leave or retire.

B3. 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.

a. Keep procedures well-documented, transparent, and consistent in case CCT is a dissatisfied student ever takes legal action.

C. To contribute to increased cross-program collaboration in the CEHD.
C1. Participate in a. the operations of the Learning, Teaching and Educational Transformation (non-licensure) track of the M.Ed. program; and b. infusing CCT into other M.Ed. programs.

C4. Contribute to the evolution of standard CEHD course evaluations ~~and streamlining of procedures for~~ passing on the results in a form that faculty can use to develop their teaching (see A1b) and can inform students' approach to their learning.

C6. ~~Contribute to the accreditation of~~ Harmonize CCT goals with those of the Professional Education Unit (PEU), centered in the CEHD.

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, detailing the planning premises, mission, integration of previous projects, governance and processes of evaluation and ongoing development, resources and funding plans, and integration with the CCT Program, CEHD, Continuing Education/CCDE, and the University.~~
Maintain the CCT Network as an outreach unit, building on its original prospectus, with goals of
• organizing, in a sustainable fashion, personal & professional development, community building, and educational-innovation activities beyond the formal CCT program of studies.
• supplementing students' education through the involvement of alums.
• continuing alums' education by their involvement in the education of students and each other.

E6. Undertake ~~one high profile public event per year as well as~~ 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.
F3. ~~Establish a process to identify students prepared to undertake thesis research, and establish advising relationships to support them in completing their theses.~~

F3a. Establish a process to identify students whose synthesis research may lead to publications, and establish advising relationships to support them in preparing manuscripts for publication.
F3b. Draw attention to pdf versions of syntheses available through CCT website and UMB curriculum library.

F4. ~~Arrange discussions of the works in progress of individual CCT faculty members and draw wider attention to the resulting publications.~~

Draw wider attention to the works in progress of individual CCT faculty members and to the resulting publications.

G. To evaluate and continue developing the Program.
G1. Constitute an advisory group, 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. Constitute a second advisory group for the SICW track (as required for Prof. Science Masters certification).

G3. Arrange facilitated, participatory planning sessions so as to enhance the participation and investment of CCT faculty in the resulting plans.
    b. Such planning sessions and regular faculty meetings apply the following criteria to any proposed new initiatives:
        i) we are able to do what we've already committed to, which includes serving the students we have and doing so without adding unagreed-on burdens on each other as colleagues; and
        ii) any initiative is based on a plan with clear goals/objectives that addresses a) and includes a chance to take-stock afterwards to learn from how well we met the goals.
    c. Articulate priorities for core faculty's work in light of operating parameters (see goal B) and subject these to periodical revision or reaffirmation."

G4. Develop 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~~ that diversity and inequality raise for understanding thinking and reflecting on practice.

B. SPECIFIC OPTIONS FOR CCT'S FUTURE: IMPLICATIONS FOR SERVING STUDENTS, RESOURCES, AND ADMINISTRATION

The CCT program was reviewed in 1994-5 and 2002-3. During the year or two following each review decisions were made about the Program's status (and unmade) by College- and higher-level administration without reference to data or assessments in the reviews and without consultation with the CCT faculty.[50] Stepping aside from the detail of the self-study and AQUAD plan, therefore, we include Table 7 to bring into bold relief the resource and other implications of six options for the post-AQUAD future of CCT that might well be considered by the Administration.

Resource implications common to all six options:
    • Savings for State budget from non-continuation of lecturer line after '09-10. (Since 2000-1, there has been a lectureship position at 50%, 100% or 2/3, except during '03-04.)
    • UC-funded assistant coordinator (position initiated by CCDE in fall '09 and expanded to 100% in January '11) continues.
    • Day-to-day program costs (guest speakers, events, software updates, etc.) covered by course "dividends" from UC.

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[50] Reports from 2002-3 review and subsequent developments viewable at http://www.cct.umb.edu/aquad03.html.

Table 7. Implications of six options for the post-AQUAD future of CCT that might be considered by the Administration

Option	Serving students	Opportunities (-lost/ +gained)	Additional Resource implications
1. Wind down CCT	Currently matriculated CCT students can be graduated by spring '12. (Any delayed completers could be shifted to the LTET non-licensure M.Ed. track to graduate.)	- SICW initiative (as a track in CCT) not pursued. - Online option for M.A. not pursued.	After spring '12, release from CCT commitments for Philosophy & Psychology translates into 3 and 2 undergraduate sections, respectively.
2. Phase out CCT before the next AQUAD	New CCT students matriculate till Fall '14 with understanding that if they do not finish by Spring '16, they may have to shift to the LTET (non-licensure) M.Ed. track to graduate.	- SICW initiative (as a track in CCT) not pursued. - Online option for M.A. shortlived.	Creative Thinking face-to-face core course every third semester through Spring '15 offered under UC. After the phase out, release from CCT commitments for Philosophy & Psychology translates into 3 and 2 undergraduate sections, respectively, until Smith & Millman retire.
3. Phase out regular CCT track and focus on SICW track	Currently matriculated CCT students can be graduated by spring '12. (Any delayed completers could be shifted to the LTET M.Ed. track to graduate.)	- Numbers in the new SICW track must rise quickly to comp-ensate for loss of regular CCT students in required precapstone & capstone research & writing courses and in electives. + Matriculation in SICW can rise to 15-18/year without requiring additional sections beyond those planned.	When Smith & Millman retire, their departments still cover at least 1 SICW-related course per year *or* courses offered under UC. Fewer courses offered through UC means fewer "dividends" from UC to cover day-to-day program costs.

Option	Serving students	Opportunities (-lost/ +gained)	Additional Resource implications
4. Continue (with expanded UC support, under Dec. '10 memo)	Matriculation in CCT and new SICW track can rise to 15 M.A. students and 15 certificate students without requiring additional State-funded sections. Even if matriculation numbers stayed at '09-10 level, no course cancellation problems arise (because CCT sections are taken by students from LTET M.Ed. track and other programs).	+ SICW track can grow, yet (unlike option 3) no budgetary pressure for it to grow quickly.	UC funding to cover the expanded and additional positions requires increased registration in CCT courses offered through UC for CCT, LTET, and SICW programs/ tracks. Creative Thinking face-to-face core course every third semester through Spring '15 covered by State funds, *or* offered under UC. Taylor's required CCT courses covered when he is on leave by State-funded replacement, *or* offered under UC. When Smith & Millman retire, each of their departments still cover at least 3 courses per two-year cycle, *or* courses offered under UC.
5. A second regular faculty member (lecturer or professor) appointed or assigned, who is dedicated to the combination of CCT, SICW, and LTET	Person appointed needs to be able to teach Creative Thinking and Synthesis (capstone) seminar for CCT, in addition to teaching for SICW & LTET tracks	+ Provides an opportunity for day-to-day cooperation and apprenticeship/mentoring on running and promoting programs/tracks. + Allows research related to CCT and SICW. + Allows Taylor to really be on leave when he has a research or sabbatical leave.	When Smith & Millman retire, their departments still cover at least 1 SICW-related course per year *or* courses offered by new faculty member. Taylor's required CCT courses covered when he is on leave by State-funded replacement, *or* offered by new faculty member.
6. Program moves administratively under University College (with governance led by CCT core faculty).	Regular CCT faculty members continue to teach until retirement. UC sections added as student numbers warrant.	Same as option 4.	Same as option 4, except all replacement courses offered through UC.

C. 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 and Graduate Certificate students. The Program is staffed by experienced, tenured faculty members and by many experienced and effective part-timers teaching online and face-to-face through CCDE/UC. The level of student satisfaction is high. A minimal set of resources has been secured through a partnership with CCDE/UC to accommodate the particularities of CCT as an interdisciplinary, inter-college Program, with special emphases on "Creative Thinking at Work" and "Science in a Changing World." Ongoing adjustments to changing circumstances and resource limitations, however, have come at some personal cost to members of the core CCT faculty and we have not been able to eliminate shortfalls in recruitment of new students and degree completion (documented in this self-study). Reservations we have about these costs and shortcomings my be clarified by discussions during this AQUAD review process. This said, the investments we have made in the Program's growth and development make it an important base for our continued productivity and innovation as a teachers, researchers, and colleagues within and beyond the UMass Boston community and for ongoing learning how to be critical, creative, reflective agents of organizational and social change.