GRADUATE PROGRAM IN CRITICAL AND CREATIVE THINKING (CCT)
SELF-STUDY FOR 2017-18 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 nearly forty 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. Historical background for the Program as a whole that conveys the flavor of CCT as an evolving entity is given in Appendix A. What follows are the major developments since the last AQUAD review to set the scene for the current review.

In 2012, the Program's formal home moved to University College, which has since been renamed College of Advancing and Professional Studies (CAPS; see MOU in Appendix B). The hope was that with CCT in CAPS a second faculty position dedicated the Program could be restored and the program directorship could alternate between the two people. As had been the case in the years preceding the move, the Program could point to its net return to the College in justifying funding any new position. However, in 2013 the University administration took control of all funds derived from CAPS courses; decisions about new faculty positions were no longer be a simple matter of the Program showing to CAPS a sufficient net return.

When one of the two CLA faculty who had half-time teaching responsibilities to the Program since 1980 retired in 2014, CAPS was authorized to search for a half-time lecturer position with a focus on teaching the psychology–related courses in the Program. The person hired turned out not to be a good fit and is no longer with the Program. Positions dedicated to the Program are now the director and a full-time professional staff position with lecturer–like teaching responsibilities. Some teaching continues to come from the remaining CCT faculty member in CLA; the other instructors are experienced part-timers.

One significant development in the Program has been a shift from students taking courses face-to-face to students taking courses from a distance. Most courses are now offered in a "hybrid" format so that both in-classroom and at-a-distance students can participate in the same regularly scheduled weekly sessions. Teaching dynamics for the hybrid classroom have been fashioned to ensure equal access to discussion by the in-class and at-a-distance students and to create an active classroom community. Collaborative Explorations (described below) have also been experimented with in several courses.

Another significant development in the Program has been a decline in enrollment from the LTET non-licensure M.Ed. program whose students had often used CCT courses, especially the online sections, to fulfill their electives and requirements. (In 2014 LTET students with a concentration in Applied Behavior Analysis could no longer take CCT courses after their ABA licensure requirements changed and in 2015 LTET stopped admitting new students.) To ensure

that CCT courses would have sufficient enrollment to run and to hold the average registration per course steady, most online-only sections were phased out in favor of the hybrid sections. Most courses have been shifted onto a two-year cycle with a view to increasing average registration per course given the pressures at UMB to increase net revenue. Course plans are made with students to ensure that they take the required and desired courses when they are offered. (Exceptions to the two-year cycle are the required Critical Thinking, Creative Thinking, and final three research and engagement courses.)

An exciting initiative was the development in 2013-14 of a self-funding doctoral proposal in Creative and Transformative Education (later renamed as Research and Leadership in Art, Design and Engagement) through a partnership with MassArt (Massachusetts College of Art and Design) (Appendix C). Although this proposal has stalled, the process of developing it stimulated review of materials and innovation in several courses.

A potentially significant development was the approval of combined BA/MA programs for the regular CCT track and the Science in a Changing World (SICW) track in 2014, but family health concerns for the director took meant that recruitment to these programs has not yet taken off. However, in a surprising development, the number of admissions in calendar year 2017 exceeded any year since at least 2000 and there is now a cohort of SICW students.

Outreach for recruitment to the Program has continued to be through word-of-mouth and monthly open house events that bring in alums as well as current and prospective students, and allow for online as well as face-to-face participation. Initiatives in social media and online interaction have also been undertaken. While an active social media presence proved hard to sustain, the Program has hosted at least thirty "Collaborative Explorations" (CEs) since 2013. CEs, a variant of Project-Based Learning, involve a group of people meeting online for an hour a week for a month around a given topic, with each participant working between meetings to inquire into the topic and share what they are learning and thinking about in a private online space. The Program cannot point to a yield in applications coming from the CEs, but they have served other valuable functions, such as mentoring of alums and bringing up-to-date materials into the curriculum. Intellectual exchange and enrichment for UMB faculty has also occurred through the SICW track continuing to host the Intercollege Seminar in Humanities and Sciences most semesters.

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, has offered courses serving 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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Abbreviations

AQUAD	Academic QUality Assessment and Development
AY	Academic year
CAPS	College of Advancing and Professional Studies
CCDE	Division of Corporate, Continuing, and Distance Education (now CAPS)
CCT	Critical and Creative Thinking graduate program
	Short prefix for CCT/SICW courses
CEHD	College of Education and Human Development (formerly GCE)
CLA	College of Liberal Arts
CLR	Course Load Reduction
CRCRTH	Long prefix for CCT/SICW courses
CSM	College of Sciences and Mathematics
GA	Graduate Assistant (includes RAs and TAs)
GPD	Graduate Program Director
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 (now CAPS)
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: College of Advancing and Professional Studies
Continuing faculty assignments from Departments of Curriculum & Instruction in College of Education and Human Development and of Philosophy in the College of Liberal Arts.

2. Mission and Overview
(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. The italicized phrase below was added in 2015 to convey a "slow mode" of change.[1])

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 *take the time it takes to* become constructive, reflective agents of change in education, work, social movements, science, and creative arts.

2.1. 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. This same spirit in the Science in a Changing World (SICW) track, albeit with its specific focus on science in the context of social change or individual intellectual development. By the time CCT/SICW 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/SICW 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/SICW benefit from extended relationships with core faculty and fellow students that support their process-learning-experimenting and taking risks in

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[1] See blog post https://wp.me/p1gwfa-DW

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 personal endeavors.

2.2. Content of Studies

The sequence of courses is designed to foster students' own personal and professional development and their efforts to help others develop equivalent processes. The core CCT courses provide knowledge from what has traditionally been emphasized in the fields of critical thinking and creative thinking: 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. The core SICW courses examine ways to promote critical and creative thinking through cases drawn from the sciences and mathematics, with special attention to the involvement of teachers and other citizens in debates about science in its social context. Students then choose from a range of elective courses (including the core SICW courses being taken as electives by students in the regular CCT track), which involve specialized knowledge as well as exploration of the inter- and intra-personal dimensions of critical and creative thinking and reflective practice, as pursued through dialogue, facilitation of group processes, pedagogical innovation, and workplace and organizational change. In the final three required courses, students synthesize the research, implementation, evaluation, and communication in ways that prepare them to continue making changes in their work and lives after they graduate.

Like the students in the Program, CCT faculty members (Appendix I) are engaged in ongoing personal and professional development, which builds on, but extends some distance from, their original disciplines. 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 wider engagements. In turn, students' experience of the faculty as reflective practitioners in their own work is an essential part of the content of CCT studies.

2.3. 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 (Appendix D). Through course projects, 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 science communicators. 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 by alum presentations to monthly CCT Network events (see Exhibits). 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)
(From 6/00 AQUAD plan, with some additions Mar. '01 and adjustments July '11 generated from the faculty review of mission during the 2010-11 AQUAD review and Fall '17.[2])

3.1 Goals and Objectives
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 CAPS.

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.
    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.)

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[2] The July '11 adjustments removed past target dates and made other minor changes mostly to reflect initiatives since Mar. '01 that were already happening. The Fall '17 adjustments reflect CAPS, not CEHD (formerly GCE), becoming the Program's home college and other name changes.

c. Compile documentation, especially capstone 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 peers.

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.

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

b2. Coordinate with other Programs and tracks so that CCT courses can serve their students, e.g., LTET (non-licensure M.Ed.) and possible CAGS in Ed. Leadership.

c. Maintain a reliable roster of CCT courses allowing students to 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.

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 Catalog 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) 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," to be offered in collaboration with CAPS and a CCT outreach unit.

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 parameters for CCT's operations that conform to resources available (primarily in CEHD, CAPS, CLA) and institutional guidelines.
 a. College endorsement of CCT's Mission 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, as is the continuation of the CAPS-funded assistant director position.)
 d. Expected student numbers in the CCT Program and courses
 e. Emphasize synthesis options that allow students to finish during the final synthesis semester, or during the following 12 months.
 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 CEHD
 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 units, in and beyond CEHD.
 a. Circulate the CCT Mission statement, with an appendix on the planning parameters once they are set/settled
 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 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.

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 CEHD/UMB 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).

C4. Contribute to the evolution of 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).

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

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

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 Innovative 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 College [formerly 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. 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.

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 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 and maintain 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.

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.   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).

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.
    a. 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.
    b. 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 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, 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. In brief, as indicated in the Preamble, CCT has to be able to make appropriate adjustments to changing circumstances and respond to shortcomings that have 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[3];

--develop a clear and constructive role in and beyond its home college, coordinating with other graduate programs and outreach initiatives[4]; and

-- present a higher profile, within the university and in the wider community, for what is distinctive about CCT's work.[5]

Both by disposition and necessity, the Program needs to continue to innovate in response to new challenges and opportunities (see section II and appendix E), 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 (Appendix H).

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[3] See Mission and Goal A
[4] Goals C and E
[5] Goals D-F

4. Curriculum

a. Programs: Most students in CCT seek a Master of Arts (M.A.) degree (11 courses/33 credits). 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. Most students complete the regular program of studies, but a small number undertake the Science in a Changing World Certificate or M.A. track. The Program can be completed on a part-time or full-time basis.

All programs of study can be completed through a combination of courses taken in face-to-face sections, from a distance over the internet, or in traditional (asynchronous) online sections. 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 wanted to build a specific area of interest in CCT could contact the Program to be assigned a CCT faculty advisor; although this partnership is now winding down, an equivalent partnership has been established with the Transnational Cultural and Community Studies Masters program. 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.

b. Tracks and Concentrations: M.A. students complete four foundation or core courses, four electives, and three final required "research and engagement" courses including a synthesis 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," Liberal and Interdisciplinary Studies, or Transformative Education. (The first is the focus of publicity for the Certificate; the last two are designated concentrations for which some substitution of foundation courses is customary.)

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) Conceptual Change and Learning (previously, 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.
> --Students with a Science Professional interest 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. 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).

Each Synthesis Project is read by the advisor and another member of the 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. A Reflective Practitioner's Portfolio, assembled during the program of studies, is also submitted at this time.

d. Courses:
(Appendix J 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 wiki.[6]

All courses allow students to be brought into regular class sessions over the internet, with the exception of those marked aol for asynchronous online

Required Foundation Courses for Regular Track
CrCrTh 601   Critical Thinking
CrCrTh 602   Creative Thinking
CrCrTh 603/PHIL 501   Foundations of Philosophical Thought
CrCrTh651/PSYCH 650   Advanced Cognitive Psychology

Required Foundation Courses for Science in a Changing World Track
CrCrTh640   Environment, Science and Society: Critical Thinking
Or CrCrTh645/BIO545   Biology in Society: Critical Thinking
CrCrTh649/PPOL749 Scientific and Political Change
CrCrTh650   Mathematical Thinking
CrCrTh652/PSYCH552   Conceptual Change and Learning (formerly: Children And
            Science)

Elective Courses (four to be taken)
CrCrTh611   Seminar in Critical Thinking (themes may vary; can be taken twice)
CrCrTh612   Seminar in Creativity (themes may vary; can be taken twice)
CrCrTh615   Holistic and Transformative Teaching
CrCrTh616   Dialogue Processes (aol)
CrCrTh618   Creative Thinking, Collaboration and Organizational Change
CrCrTh619   Biomedical Ethics (aol)

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[6] http://cct.wikispaces.umb.edu/futureyears

CrCrTh627   Issues in Antiracist and Multicultural Education
CrCrTh630   Creativity and Criticism in Literature and Art
CrCrTh640   Environment, Science and Society: Critical Thinking
CrCrTh645/BIO545 Biology in Society: Critical Thinking
CrCrTh649/PPOL749 Scientific and Political Change
CrCrTh650   Mathematical Thinking
CrCrTh652/PSYCH552 Conceptual Change and Learning (formerly: Children and Science)
CrCrTh653/PPOL 753   Epidemiological Thinking and Population Health
CrCrTh655   Metacognition
CrCrTh670   Thinking, Learning and Computers
CrCrTh688   Reflective Practice (1-6 credits)
CrCrTh696   Independent Study (1-3 credits)
Possible electives from other programs with advisor's approval

Required Final Research & Engagement Courses
CrCrTh 692   Processes of Research and Engagement (must be completed before taking
         CrCrTh694)
CrCrTh 693   Action Research for Educational, Professional and Personal Change
CrCrTh 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 publicized by CAPS and UMass online; word of mouth recommendations; bookmarks distributed by members of the wider CCT community at events they attend; webpages that rank 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 with inquirers directed to the detailed online CCT Student Handbook[7], which takes the student through the steps from applying to graduating, and to the CCT/SICW wikipages, which can be searched for more information about the Program and allied activities in the wider world.[8] Prospective students are added to the email list for regular news compilations, invited to monthly community open houses, and encouraged to take a course or two before matriculating. Summer is an important period for recruiting and the Program Director and Assistant Director maintain a phone/email/advising presence out of the academic year. 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 studies that connect course material to their own specific interests in personal and professional development. Initial steps to get set up are sent to all admitted students. [9]

b. General advising: The GPD serves as the general advisor for each student upon acceptance to the program. Course plans are required of all students,[10] which is often formulated after a new student interview. Students are encouraged to sign up for end of semester check-ins and a mid-

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[7] http://cct.wikispaces.umb.edu/file/view/CCTStudentHandbook.pdf
[8] http://cct.wikispaces.umb.edu , http://sicw.wikispaces.umb.edu
[9] http://cct.wikispaces.umb.edu/NewlyAdmitted
[10] These plans are entered into the Program's database and used for advising and to manage enrollment.

program check-in is required half way through the program of studies. At the new student interview, students are encouraged to

--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
--Take steps to acquire a range of Research and Study Competencies[11] progressively over their course of studies.

The Mid-program check-in is meant to 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 GPD 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 meetings are 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 pertinent times during the course of the 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[12] 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. Upcoming course offerings are posted on the wiki. Events, such as orientations, community open houses, and public presentations of capstone and pre-capstone projects, as well as news and testimonials assembled on the wikis, 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 one advisor and one reader are involved. The synthesis seminar provides a structure for much of this advising. The synthesis advisor is the instructor of the seminar; the low registration cap on that course reflects the intensive work. The reader is established with students after they submit their synthesis proposal. This person may be a subject-matter expert for the student. Their role has, however, been reduced to providing suggested readings and leads early in the semester and evaluating the final presentation and written product using a rubric.[13]
Given the Program's experience of students getting hung up formatting issues as if their syntheses had to meet some foreign academic standards, students are now asked to develop their drafts without any attention to front matter. The abstract and other front matter is added after successful completion of the presentation and body of the synthesis. Syntheses awarded a pass

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[11] http://cct.wikispaces.umb.edu/competencies
[12] http://cct.wikispaces.umb.edu/news
[13] http://www.cct.umb.edu/RubricforCCTCapstone.pdf

or pass with distinction are generally uploaded to Scholarworks, which now holds abstracts and, in many cases full text pdfs, of capstones dating to the start of CCT.[14]

Students are required to submit a proposal before commencing the capstone semester starts, but brief course meetings happen weekly online from the end of the previous semester to get students into thinking and writing routines that will help them during the one semester. In order to reduce the number of almost, but not quite finished synthesis projects, the series of advising steps mentioned in the previous section are maintained and a completion contract is written with students who do not finish the synthesis during their synthesis seminar semester.

6. Co-curricular activities

The Graduate student organization, the CCT Forum, has continued over the period under review, using funds from the Graduate Student Assembly 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." The CCT Network[15], which arose from earlier outreach units, continues to draw CCT alums in its activities, but maintaining its operations have come to depend on Program faculty and staff. Another offshoot of earlier Program outreach, the New England Workshop on Science and Social Change, continues to host annual four-day workshops "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."[16] Participants have included CCT students and graduates.

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 and in the Review of Mission, Goals and Objectives from AQUAD plan (Appendix E).[17]

7. Scheduling

As mentioned earlier, to accommodate the schedules of teachers and other professionals, courses are offered after 4pm, in 3- or 6-week sessions during the summer. The Program can be completed on a part-time or full-time basis, face-to-face or from a distance—including both traditional asynchronous online courses as well as being brought into regular class sessions over the internet. During the review period, there has been a shift from students taking courses face-to-face to students taking courses from a distance and from the online courses being asynchronous to a "hybrid" format so that both in-classroom and at-a-distance students can participate in the same regularly scheduled weekly sessions.

In light of the large distances some students travel to the campus and the arrangements that students at a distance need to make to attend hybrid classes, course schedules are arranged so that students can often take two required courses back to back on one evening. The rotation of electives and some required core courses over a two-year cycle 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). Currently 24 different courses can be taken over a two-year period.

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[14] https://scholarworks.umb.edu/cct_capstone/
[15] http://cct/wikispaces.umb.edu/CCTNetwork
[16] http://sicw.wikispaces.com/newssc
[17] http://www.cct.umb.edu/AQUAD17GoalsReview.html

The CCT faculty prepares a proposed course schedule and submits it through CAPS and, for cross-listed sections, through the relevant department. Face-to-face sections are held in the office of the Program Director, which is arranged as a seminar room with a large monitor to display visual aids and the participants from a distance.

8. Governance
The CCT Graduate Program Director holds weekly meetings online with the Assistant Director. Monthly meetings with of the CCT core faculty have given way to email consultation to present and refine course proposals and other plans. 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.

B. HUMAN AND MATERIAL RESOURCES

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

a. Faculty assigned primarily to the Program
One full-time tenured faculty member dedicated to the Program. One full-time professional staff member with teaching responsibilities (equivalent to a lecturer, non-tenure track, with administrative responsibilities).

Peter Taylor (full time, tenured)
Specializations: Critical Thinking and Reflective Practice, especially about Environmental and Health Sciences in their Social Context.
Graduate Program Director responsible for recruitment and admissions, general student advising, program administration and office management, website and handbooks. Also, Coordinator of the Science in a Changing World graduate track.
Responsible for teaching final required courses in research and engagement (CCT692, 693, 694) and core SICW courses on science in its social context (640, 645, 649, 650 [from 2017]).

Jeremy Szteiter, a Professional Staff member and assistant director of the Program, sometimes teaches the final required courses in research and engagement (CCT692, 693, 694) and two CCT core courses (601, 651), as well as a range of electives (615, 618, 630, 670, 688).

From 2011-2015, the Program also had a 50% time Professional Staff member assigned to assist in development and outreach of the SICW track (with teaching primarily in undergraduate CAPS offerings) then a 50% instructor with expectations for administration and research in CCT.

b. CCT Faculty from other units
100% of a teaching load from Curriculum & Instruction in CEHD, which equals three courses per semester minus administrative CLRs for Prof. Taylor.
50% of a full-time teaching load from Philosophy, with associated service expectations, as part of long-term agreement originating at time of hiring Prof. Millman.
Until their retirement in 2014-15, Profs. Blum and Smith provided, respectively, one course every other year and two courses per year.

The teaching from CLA faculty has become less than the formal commitment in recent years die to the shift to hybrid courses, the two-year cycle of offerings, and having a 50% replacement for Prof. Smith from 2014-15.

c. SICW affiliates from other units
During the review period members of the original organizing committee for the SICW track were drawn into leadership roles in other units and program development initiatives.   They and the other faculty affiliates have not been mobilized in advising or instructional roles. New UMB faculty members in social, historical, and philosophical studies of science have focused their attention on undergraduate education, including a new undergraduate minor, Science, Medicine, and Society.[18]

2. Part-time faculty with instructional roles
All part-time instructors have been funded through CAPS. During the period under review, one instructor was hired after soliciting proposals for innovative approaches to teaching anti-racist and multicultural education. Two instructors have stopped teaching for the Program and their courses are now covered by the Director and Assistant Director.

3. Professional and classified staff
No data are available to quantify the assistance provided by the staff of CAPS in listing courses, recruitment publicity, website updates, and processing paperwork for hiring of part-timers and for reimbursements.

Until 2017, the Program was served by a ¼ time GA funded by CAPS. In spring 2017, funds were provided for hourly work by the equivalent of a GA, but this funding has now been discontinued.

4. Material resources
One chromebook laptop
HP laserprinter
One large monitor.

Offices: The full-time faculty member assigned primarily to the Program has a large office, where Program classes and meetings are now held. This office is shared by the Assistant Director. All files are kept online and bound syntheses are in the process of being scanned for uploading to Scholarworks.

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

6. Student support
Some international students manage to secure assistantships outside the Program. There is no other financial support for students.

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[18] Given the lack of involvement of non-Program faculty in the SICW track, no meeting has been arranged for the review committee with SICW faculty affiliates.

C. STUDENT PROFILE

1. Enrollment data[19]

Table 1. Course enrollments

year ended	Registrants	# Courses	Reg/Course	
Jun-11	230	25	9.2	
Jun-12	234	25	9.4	
Jun-13	235	23	10.2	
Jun-14	183	18	10.2	
Jun-15	183	18	10.2	
Jun-16	173	19	9.1	
Jun-17	173	17	10.2	
Jun-18	119	10	11.9	Summer-Fall only
Average	191.3	19.4	9.9	

Notes

2017-18 figures include summer and fall only.

No. registrants does not include students in non-CCT classes taught by CAPS-funded CCT professional staff.

No. registrants does include independent studies or other teaching overload, but these are not included as additional courses.

No. registrants and no. courses does include courses taught through CAPS on a per student basis.

Commentary:

The number of registrants per course has remained steady around 10 (until it increased this AY), but because the number of courses offered has declined, the total number of registrants has dropped.

The number of registrants per course should stay higher in upcoming years now that most courses have been shifted onto a two-year cycle with a view to enhancing net revenue by increasing average registration per course.

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[19] Source: Enrollment data tracked by Program; spreadsheet available on request. Includes registrations in required CCT/SICW courses Phil 501, Psych 550, Bio545, PPol 759.

2. Application, Matriculation, and Graduation Data

Table 2: Application, Matriculation, and Graduation Data[20]

year ended	MA grads	Cert grads	MA students	Cert students	Lapsed	Matriculated
Jun-11	8	9	26	8	?	11
Jun-12	9	4	28	6	?	9
Jun-13	11	6	25	7	5	4
Jun-14	1	2	21	2	3	15
Jun-15	6	13	27	3	3	7
Jun-16	8	9	25	7	2	12
Jun-17	4	2	25	12	3	15
Jun-18	n.a.	n.a.	n.a.	n.a.	2	17
averages	6.7	6.4	25.3	6.4	3.0	11.3

Notes
Students numbers at time of snapshot in the Fall.
Estimate of 6 Spring '18 matriculants are included.
Anticipated M.A. graduates in May '18 = 12

3. Descriptive data
a. Ethnic/racial diversity.
Of the 45 students being advised by the GPD at start of Fall semester 2017, 2% were Asian-American; 11% African-American; 7% Latino; 11% International; 4% unknown; 64% Euro-American. The overall diversity picture for the review period is consistent with these figures, which are at the high end of the range during the previous review period.   The figures for CCT continue to be a few % higher than the average for Masters and Certificate programs in the University as a whole.

b. Admissions data. For a random sample of the students admitted 2010-17, the average GPA is 3.41 (coefficient of variation 12%, N = 65), a much higher figure than the 3.17 for the 2010-11 AQUAD review and a similar figure for the previous reviews.[21] (GPAs are often not available for students from abroad, from non-traditional degree programs, and adding certificate to another Masters degree.) 18% (12 of the 65) had GPAs were less than 3.0, which means admission was provisional (even when they had higher GPAs in previous graduate degrees).[22] GREs are not required for applicants to CCT. The student body continues to range in age from the late 20s to early 50s. Almost all applicants have careers and are pursuing personal and professional advancement while working (Table 2; more detail is provided in Appendix D). The major shifts since the 2010-11 AQUAD review appears to be a decline in the proportion of students with careers or aspirations in Community/youth/human services programs and in Higher Ed. administration.

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[20] Source: Office of Institutional Research and CCT database. Students who skip payment of their program fee yet are later reactivated are not included in the figures.
[21] Source: CCT database.
[22] Students receiving provisional admission must achieve B+ or higher in their first two courses to gain full admission.

Figure 1
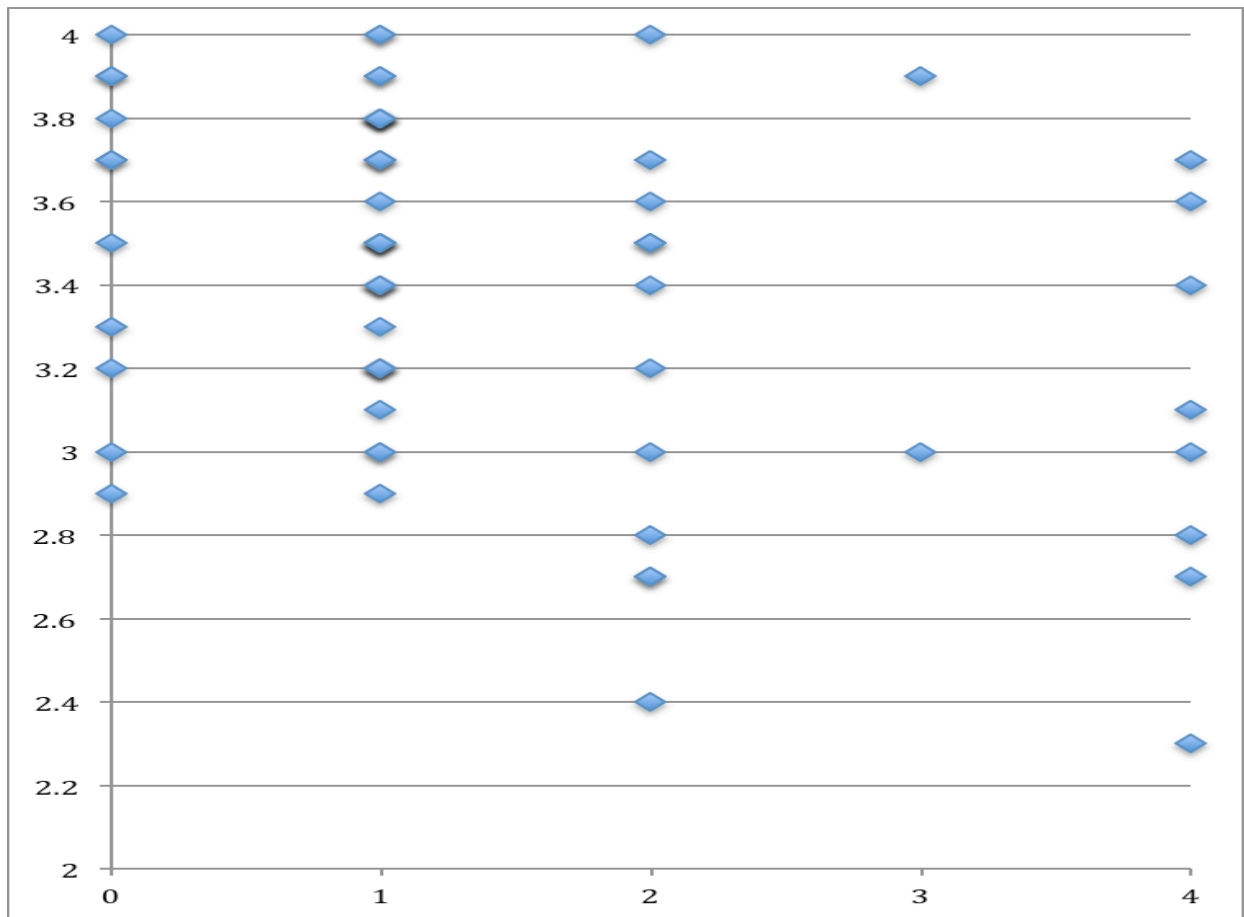
Legend: 0 = did not matriculate; 1 = current students; 2 = withdrew; 3 = graduated with Certificate; 4 = graduated with M.A.

Commentary:
The lower range for GPAs of graduates follows from more recent admits having on average higher GPAs.
It also indicates that students admitted with GPAs < 3 go on to graduate.

Table 3. Professional background and aspirations of admitted CCT applicants, 2003-2010.[23]

Category	Number of matriculants
preK-12 education	21
Music, Arts, Theater, Film	9
College Teaching/Librarian	7
Counseling/coaching	6
Business, consulting, non-profit	6
Health professions	5
Journalism, Media, Communications	4
Writing, editing, translating	4
Higher Ed administration	3
IT, Educational Tech.	3
Military	3
Science/Technology	2
Learning difficulties/Special Ed	2
Museum & informal ed.	2
Government	1
Personal career development	1

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[23] Source: CCT database, supplemented by personal knowledge of Program Director
N = 73 (which excludes students who withdrew from studies). Some students 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.[24] Several angles of assessment are documented in the subsections that follow.

A. FINANCIAL COMPARISON

The University leadership announced in Spring 2017 that the budget crisis might result in some programs being closed. GPDs were asked to help identify criteria for evaluating program performance. In times of financial constraints, productivity in terms of income/expenditure was an obvious candidate. Table 4 compares CCT and four other programs for the year Summer 2016-Spring 2017 using ballpark assumptions (listed in the notes) and the best data that could be obtained. (Even if exact figures were available, it is unlikely that the overall picture would change.) CCT's productivity is higher than two comparable CLA programs and less than the other two CAPS graduate programs. The productivity is well above 1, which means that the Program is needed, not only in the sense that there are students who enroll in it and register for its courses, but also in the sense of providing a net financial return to the University. The productivity would remain well above 1 even if a 50% benefitted position were revived.

Table 4

	CAPS programs			CLA programs	
	CCT	Instr. Des.	ABA certificate	Newer program	Established program
Productivity	**1.55**	**1.89**	**2.95**	**0.51**	**0.95**
Income					
Credits (registered students)	501	1077	534	177	288
Expenditures (instruction & admin only)					
Full-time faculty fractions for teaching, service, research	0.89	0.25		0.92	0.88
Benefited part-timers		1.50		0.13	0.25
Un-benefited part-timers	0.75	1.75	1.63		
Professional staff serving students	1.00	2.00	0.50		
Clerical staff serving students			0.50		0.50
GAships	0.13	1.00		5.00	2.50

Notes

Consider teaching, service, research each 1/3. A cross-listed course gets divided in proportion to registered students in each section. Each course and CLR for directing a unit counts as 1/x of teaching, where x is the teaching load for the faculty member's home college. A given faculty member's fractions should add to 1 when summed over the programs and departments to which they contribute.

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[24] Student evaluations are included in Exhibits and are linked to the course descriptions on the wiki for some courses, http://cct.wikispaces.umb.edu/courses.

Notes continued
Ballpark estimates for the average full-time salary plus benefits are used, not the specific figures for the particular faculty members and staff. In $thousands, full-time faculty, benefited part-timers, unbenefited part-timers, professional staff serving students, clerical staff serving students, and GAships are respectively: 130, 78, 40, 78, 45.5, and 23.
Income per credit is counted as $700. Figures for waivers are not taken into account.

B. FACULTY REVIEW OF MISSION, GOALS AND OBJECTIVES IN AQUAD PLAN
Review in relation to the AQUAD plan 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 (listed in III.A). Most objectives were addressed and met reasonably well. The objectives that were not met well should elicit useful discussion during the AQUAD review process and by the CCT faculty afterwards. The full review is included as Appendix E, but, in order to explore the linked web and wiki pages, it is best reviewed online at
http://cct.wikispaces.umb.edu/AQUAD17GoalsReview?f=print.

C. 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 (with copies to the College Dean). These reports are included as Appendix H. Together with earlier informal reports and the various reports involved in previous AQUAD reviews have been made available to the CCT community at
http://www.cct.umb.edu/programreviews.html. The spirit of ongoing assessment and response is conveyed by Table 5, which assembles challenges identified in the annual reports along with the corresponding state of play as of Fall 2017.

Table 5: State of play, as of Fall 2017, on challenges identified in annual reports

Challenges identified in annual reports	State of play, as of Fall 2017
2010-11	
1. Efforts to boost M.A. recruitment (to complement and build on overall course enrollment growth).	Application numbers rose in 2017 for no discernable reason.
2. Coaching students to assemble a "**Reflective Practice Portfolio**" during the course of their CCT studies	This is now a program requirement and is emphasized starting with the new student interview through the capstone course. Some students, however, end up graduating without having submitted it.
3. The **administration of CCT** and preparation of the AQUAD review demanded much more of the Program Coordinator's time during the summer, winter, and regular semesters than compensated by the single course release.	CCT GPD now has a 2&2 teaching load given that CAPS grants one course/semester CLR to GPD. Preparing AQUAD detracts from time for program development (and GPD's research).
4. A significant fraction of **students finish their final capstone seminar without completing the capstone paper.**	This fraction has been reduced but not eliminated. These students retake the course or simply join the classes and peer-coaching the next year.

5. Consideration of moving the formal home of the Program out of Curriculum and Instruction	University College, now CAPS, became the Program's home starting AY 12-13.
2011-12	
See 1-4 above	
2012-13	
See 1-4 above	
6. The CCT faculty in CLA have leadership roles in CLA that limit involvement in (but not support of) Program development and outreach. The **CLA faculty are nearing retirement.**	The move of CCT's home to CAPS meant that replacement hires, if any, would come through CAPS and Program development and outreach would not rely on CLA faculty.
7. a) Finding the form of **Program promotion** CAPS [that translates] into applications; and b) getting a **second full-time faculty member** hired through CAPS after Prof. Smith retires at the end of AY 13-14.	a) No current plans or funding for Program promotion through CAPS. b) Half-time replacement hired but fit was not good. No plans or funding for a new hire.
8. **LTET may be reshaped** by the new Department chair in ways that might reduce the role of CCT courses.	After LTET admissions were closed, a proposal for a new track in CCT in Transformative Education moved through governance in 2015 until the CEHD Dean asked for it to be withdrawn.
2013-14	
9. Given that fewer classes are face-to-face and fewer CCT students take those classes, there is **less informal advising**. A regular check-in at the end of each semester is being initiated, starting this week.	Regular check-in online office hours with GPD happen at the end of each semester.
10. Application numbers need to increase in order to reduce the following vulnerability: **CCT courses always serve a majority of students from outside CCT**. This is a strength, but also a vulnerability if those registrations drop. This AY the non-licensure LTET M.Ed. has continued on uncertain grounds as the Department chair considers changes that would reduce the role of CCT courses.	Less reliance on registration from outside CCT given that application numbers rose in 2017 and course offerings have been streamlined a little.
11. **Successfully complete the search and then collaborate on effective recruitment** in a world where applicants find CCT but not through any systematic routes. If the doctorate is approved, it would add to the advising load, but the increase in student numbers would, it is hoped, lead to the 50% position becoming 100%.	See #3 & 7 Doctoral proposal on hold.
2014-15	
12. Because the majority of students now take the Program from a distance, [continue the] mode of **instruction that combines a face-to-face group with students joining [over the internet]**.	This is now standard practice (with zoom used often instead of hangout).
See 10	

13. Recruitment outreach and cultivating of partnerships is constrained by another sense in which **CCT is a small program**, namely, administrative resources being limited to the GPD and assistant GPD (a full-time teaching professional staff member) and a ¼ time graduate assistantship. It became evident during the year that the new 50% position needed to be 100% to overcome the very real constraints of this person's split institutional and geographical locations and allow the apprenticing needed for there to be a meaningful possibility of rotation of the GPD role. This is not to be, so the challenge is to tailor efforts to the resources, protecting 1/3 of the GPD's work-time for research and writing (especially in the crucial winter and mid-summer periods for grant applications).	See #3 & 7
2015-16	
14. Continue to **innovate in core courses**.	Critical Thinking reworked in Fall 2015 and 2017; Mathematical Thinking (SICW core) in Fall 2017. Plan is to rework Creative Thinking before Spring 2018 to become a hybrid course instead of asynchronous online.
15. **Promotion for a new BA-MA** (accelerated Masters) program needs to be re-engaged.	Initial steps taken in Fall 2017.
16. **Enrollments from Learning, Teaching, and Educational Transformation (LTET) continued to phase out** (given that the Chair of Curriculum & Instruction closed admissions to LTET in March 2015). The 50% faculty member has not been able to have the expected presence in program promotion. For this reason, and because the GPD had to attend to personal family matters, promotion of a new BA-MA (accelerated Masters) program (approved last year) and of CCT to other new graduate programs, as well as progress on a proposed doctoral program in partnership with MassArt, have been limited.	See #10 & 11
17. **Budget cuts may increase the teaching load** of the core faculty, thus reducing time for course review and revision, for program promotion, and for sustainable, non-exploitative operations and planning.	Course enrollments have increased, for some courses taking them over the traditional cap.
2016-17	
18. Advising students and program administration leaves **little time for planned program promotion** initiatives since the loss of the 50% faculty member.	See #13 & 16
See 15 & 16.	

D. CCT/SICW AS AN INCUBATOR OF INNOVATION

Reflecting on the challenges pointed to in the previous section, the faculty want to draw attention to the role of the Program as an incubator of new modes of pedagogical, collegial, and institutional change. Of course, not all of these initiatives summarized in Table 6 ended up being sustainable. Nevertheless, online documentation means that anyone who wishes to adopt or adapt aspects of them can learn from the experience in CCT/SICW.

Table 6. A range of initiatives in pedagogical, collegial, and institutional change

Initiative	Description, examples, and further details
Capstone projects made available to the public	Originally on program website; now on Scholarworks, https://scholarworks.umb.edu/cct_capstone/ Bound syn/theses from 1980-2005 in the process of being scanned and added.
Center for Improvement of Teaching/Innovative Teaching sessions	e.g., Synchronous online teaching: Enhancing learning while boosting enrollment http://cct.wikispaces.umb.edu/CIT24Oct17
On-campus and off-campus interdisciplinary workshops for faculty and graduate students	New England Workshop on Science and Social Change, annual 4-day workshops since 2004, including ones in Portugal http://sicw.wikispaces.com/newssc
Interdisciplinary discussion among faculty and doctoral students	InterCollege Seminar in Humanities and Sciences, with a new theme each semester, http://sicw.wikispaces.umb.edu/ISHS
Faculty and staff development in social media, writing support, curriculum redesign	e.g., "When the Social, not the Medium, is the Message: A Workshop on Community-building and Research Collaboration in Virtual Spaces," http://sicw.wikispaces.umb.edu/SMWorkshop "Supporting students' writing development throughout the graduate curriculum," http://bit.ly/GWCSpring14 "Synchronous online teaching: Enhancing learning while boosting enrollment," http://cct.wikispaces.umb.edu/CIT24Oct17
CCT Network	Monthly in-person and online events to • organize, in a sustainable fashion, personal & 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. http://cct.wikispaces.umb.edu/CCTNetwork
Project-based learning (PBL)	Experimental seminar on PBL led to 3-week units in some courses led to whole courses based on PBL units, e.g., Gender, Race, and the Complexities of Science and Technology, http://gcws.wikispaces.umb.edu
Taking Yourself Seriously – a field book of tools and processes for research and engagement	Published in 2012. See Exhibits. Revised edition, in development, includes tools and processes for group process and collaboration.

Narrative course evaluations	The format of CCT course evaluations fulfills four goals: inform instructor to make changes; inform current students' future approaches to learning; inform future students about whether to take the course and how to approach it; inform external reviews of the instruction and course.
LTET (non-licensure MEd) curriculum and written capstones	http://ltet.wikispaces.umb.edu/LTET and http://ltet.wikispaces.umb.edu/LTETCapstone Most LTET students doing written capstone have undertaken it under CrCrTh 694.
Use of social media	Portals: http://cct.wikispaces.com, sicw.wikispaces.com Wikis for News, Testimonials, and more; e.g., http://cct.wikispaces.umb.edu/Testimonials
Hybrid classes and synchronous online courses	Regular 2 ¾ hour weekly class sessions that combine face-to-face and online students. Class routines that ensure equal access to discussion and build community, http://cct.wikispaces.umb.edu/CIT24Oct17
Working Papers	Dissemination of works-in-progress. https://scholarworks.umb.edu/cct_ccrp/ and https://scholarworks.umb.edu/cct_sicw/
Self-funding doctoral program proposal in partnership with another institution	Creative and Transformative Education (later renamed as Research and Leadership in Art, Design and Engagement); see Appendix C
Collaborative Explorations	A variant of Project-Based Learning, involving a group of people meeting online for an hour a week for a month around a given topic, with each participant working between meetings to inquire into the topic and share what they are learning and thinking about in a private online space, http://bit.ly/collabex
Documentation and sharing of Sustainable Practices in Under-resourced Graduate Programs	e.g., http://ptaylor.wikispaces.umb.edu/GPD7May14
Low overhead MOOC	A course designed to be available as a MOOC without large startup and production costs, http://bit.ly/designcct

E. 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. The self-assessment form (included as Appendix F) 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, CrCrTh692) 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.[25]

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. Password-protected access is available for reviewers to the full self-assessments on http://cctrpp.wikispaces.umb.edu/ExitSelfAssessment. Some excerpts follow:

Pre-K teacher: "I think that more people need to know about CCT. I learned so much from CCT and I want others to be able to have the good experiences I did… When I go back to Thailand, I will find opportunities to distribute my knowledge to as many schools I can."

Educator in school-completion program: "My learning throughout CCT shifted from the tangible tools and resources to identifying a deeper purpose to experiences and how they connect to learning." "[O]ne of the value-adds from this program are the different opportunities students get to interact and learn from peers who may not be in the same profession as them."

Film and theater: "[It was] wonder[ful to be] in a program that had hybrid classes – where some were on campus with the instructor, and others around the world. Hearing viewpoints from fellow students talking from time zones around the world gave a global perspective to every situation that we discussed."

Academic advisor: "I learned that I'm capable of creating and realizing a very ambitious project, but… I need to look carefully at the scope and scale of each project and better estimate the time that will be required."

IT and course development: "I feel comfortable saying that CCT has changed my personal relationships as well as my professional inquiry and engagement skills. I think I am more able to hang back and reflect on the other person's experience, or just plain keep my mouth shut instead of reacting to something that was said. In a professional context, I have found example after example of ways to apply what I've learned as well as open new possibilities for learning."

Dean of faculty at residential high school: "I expanded my view of how best to serve a secondary LD [learning disabilities] population, and devised a program that, to my knowledge, isn't very common in a high school curriculum." "I wish that there was a CCT doctoral program… I don't really want to leave this program. I mean, I am ready to take a break from writing essays and forcing my, but I want to learn more."

Academic advisor: "The focus on peer relationships is one of CCT's strongest points with me. Having the ability to seek as well as offer support and advice is motivating."

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[25] http://cctrpp.wikispaces.umb.edu/ExitSelfAssessmentBlank

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

We created online surveys for students representing four areas (full responses available in Appendix E):
- Graduates of the program since 2011 (13 responses out of possible 45)
- Current students as of fall 2017 (12 responses out of possible 37)
- Those taking CCT courses who were either in other graduate programs, or who took courses as a non-degree student without matriculating (27 responses out of possible 717)
- Former matriculated students who withdrew before finishing the program (1 response out of possible 19)

The online survey was distributed by emailing the corresponding link for each survey, created using Google Forms, to the appropriate group with an explanation of the purpose of the request, using last known working email addresses from the CCT database.

In reporting results, we consider the answers to questions for the following categories:
  (a) details about 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, how it compared to other options in their overall planning for graduate study, and aspirations they had at the start);
  (c) what kind of changes occurred for them from the Program (including 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 suggestions for improvement.

The following tables summarize findings for each category.

(a) What were the programs of study and areas of specialization of the students?

Graduates	11 MA, 2 Graduate Certificate Of the 11 who indicated a specialty, 4 mentioned the teaching of creativity, and several others mentioned some association with either education or the development of creative thinking. Others referred to the Science in a Changing World track, creative play, cognition and creativity, and social change/entrepreneurship.
Current students	10 MA, 2 Graduate Certificate Of the 10 who indicated a specialty, two responses referred to the Science in a Changing World track, and others varied across several areas: critical and creative thinking in settings related to education, workplace/business, lifelong learning, and transformative leadership through music. Three responses referred directly to critical and creative thinking in the arts. Half of the students who responded have just one course remaining, and the others have 3, 6, 7, or 9 remaining.

Non-CCT students who took courses	In the 27 responses, students were in a variety of programs. Several were in the MEd in Learning, Teaching, and Transformation. Several others were in Masters programs in Education, Applied Linguistics, Human Services, Gerontology, and Art Education. Others were in PhD programs in Urban Education, Higher Education and Global Inclusion and Social Development. Four responses were from students in Nursing. Six responses came from students not in a program and taking courses as a non-degree student.
Former students	The one response was from an MA student in the Science in a Changing World track.

(b) What led students to enroll in CCT Program or take CCT courses?

Graduates	Most students referred to finding the program through the web, either as a general search or by browsing the UMB site directly or looking through the catalog of programs (and finding the CCT pages or program wiki). One person mentioned speaking with students in the program at the time, and one person mentioned visiting the graduate open house event on campus. Several qualities were mentioned that led to perceiving that the program was a good fit. Six responses referred to the option to complete courses online; several responses referred to the flexibility of the program in allowing students to pursue their interests or the appealing descriptions / range of the course offerings. Others mentioned the support that they received through their exploration before applying, such as positive comments on the program by current students, tuition benefits, being invited to ask questions and connecting with program faculty or staff, and taking a course. Students also mentioned some additional contrasts between CCT and their other options, including the relative flexibility in how CCT defines methods for teaching creativity, the room to focus on critical and creative thinking applications or practices, and the ability to take critical and creative thinking into fields outside of education (including areas of personal development). Aspirations mentioned varied from increasing one's credentials to advance in a career (including preparing for advanced teaching roles and responsibilities) to moving oneself to places of higher personal fulfillment. References were made to developing professional work that involved teaching history, teaching English composition, science education, social media, horticulture, writing and communications, and continuing one's body of artwork.
Current students	Most responses referred to finding out about CCT through web search. A few students were originally interested or enrolled in the MEd LTET program and decided upon CCT instead. Important qualities that led students to apply mirror the responses from graduates: the online options, the flexibility or general nature of the program and courses that allowed students to pursue their own interests around the common themes of critical and creative thinking, the interesting sound of

	course descriptions, and possibilities for applying the program to interdisciplinary interests were mentioned. The factors above were reinforced by responses about how CCT compared to other programs or options. Some responses mentioned how the flexibility and variety within the CCT approach helped to serve multiple interests and both personal and professional directions and represented a diversity of student backgrounds, and how there seemed to be freedom to shape the learning experience around directions not limited to a single, fixed outcome or professional field. Other aspirations reflected development for students who had experience in their field already to make "deep changes" in their teaching and other work, create professional opportunities for themselves, and support how they addressed ongoing learning more generally.
Non-CCT students who took courses	Responses here included several references to finding the program through web search or in the university catalog, but others mention being referred to CCT courses through advisors or peers (including current CCT students). Responses about why students registered represented a range. Several said that the particular course fulfilled an elective that they needed and matched their interest and schedule or was otherwise convenient. Others said that communications from the instructor helped them to confirm their interest, or that they wanted to develop the critical and creative thinking skill or understanding covered in a given course.
Former students	The one response revealed that the student learned about the program on the UMB website and was interested in science and philosophy and found the program to be a good match. The person expressed interested in developing critical thinking in their own job in research. Financial and personal situation (including a promotion/job change) led the student to withdraw.

(c) What were the changes that occurred, or the experience gained by students during the program (or through taking courses)?

Graduates	Some responses mentioned that the aspirations did not change during the program, but others referred to changing perspectives on how or why critical and creative thinking could be applied to teaching, or how it might be directed toward more personal pursuits or toward continuing to develop positive change in organizational areas. One response mentioned that the person "may have chosen a degree with a more specific job application" when thinking back. Specific professional and personal changes referred to increase in flexibility of thinking, changes in approaches at work, gain of knowledge, communication, confidence in abilities, and preparedness for addressing classroom needs or supporting their own students to be critical and creative thinkers. Some responses to specific job or life changes that followed in part from their experience, such as job changes or promotions, publishing a book, and

	facilitating workshops or other learning opportunities. One response referred to someone looking for a 'new approach to education and workplace" who found "a complete disappointment in the program…the majority of the courses were worthless" without additional elaboration.

As evidence for the statements above, responses referred to specific courses or workshops that students were now teaching, the development of writings that are intended as bases for future publication, new relationships formed out of seeking to extend work started in the program, reaching teaching licensure that requires a Masters degree, and achievement of new job positions or roles that stem from risk-taking encouraged through the program. |
| Current students | Several responses about changes in aspirations were left unanswered or said that there has been no change. One comment was that the student has "become a much more productive self-critic of my teaching", and other stated "I often find new and unanticipated angles as I take the different classes". One other student said that "my aspirations have evolved slightly, seeing how I might attempt to 'prove' my learning in a quantifiable, data-driven way."

Students also commented on what stands out as distinctive in their students so far. Responses referred to diversity and flexibility, including not only the range of coursework, but also the makeup of the student community, the applicability of learning to many areas of personal and professional development, the collaborative/supportive nature of the courses, and the sense of inclusion in course processes present during online meetings. Responses about evidence that demonstrate change include being offered teaching or other jobs, development of new curriculum, work toward writing a children's book series, additional responsibilities at work (around budgeting), advancements in writing quality, and developing additional organization around personal and professional goals. |
| Non-CCT students who took courses | Non-CCT students responded about what stood out for them as distinctive in the course/s that they took. Some students referred to the practical nature of the learning or the way that it allowed them to take on a different perspective on what they were looking to do with their work. The online nature was praised by several students, although one said that they had "extensive online coursework taken through UCLA Extension" previously and found a CCT course in critical thinking to be "inferior in technology and faculty…I was deeply disappointed." Other students appreciated the depth of the content, the range of issues or topics that can be explored when studying critical and creative thinking, the community established through the course (including the interactive processes or small-group exchanges used in class meetings), the emphasis on thinking, or the project-based learning models being used. |
| Former students | The student who responded stated that their aspiration (focus on critical thinking in research work; interested in science and philosophy) did not change and made no further suggestions about how the program might serve someone with their aspirations, noting that "the two courses I took help hone my research skills". |

(d) How do students evaluate the program, and what are the suggestions for improvement?

Graduates	Responses addressed suggestions for improvement and provided an overall rating of quality of the program. One response mentioned concerns about CRCRTH 611 Critical Thinking in Business, which is no longer offered. Other suggestions referred more specifically to the teaching of creative thinking, including updating and redesigning the Creative Thinking course as well as extending how the program introduces students to creative thinking in practice beyond the theoretical concerns. One comment suggested that more concrete examples might be developed to demonstrate to prospective students how the "gray areas" of the study of critical and creative thinking can be clarified. One comment also suggested that more consistency be reached in how the online platforms are used in the courses. Overall ratings: 7 responses for "excellent", 2 for "very good", 3 for "good", and 1 for "poor". The response indicating a poor rating reflects some of the comments mentioned previously with criticism about the program and courses such as "the program was over-rated…" and "Complete disappointment…" without noting specific suggestions but adding the comment that the program "has so much potential…but they actually did nothing." without further explanation, except to say "the program needs to hire people like [Carol Smith]" (now retired).
Current students	Some of the suggestions for improvement refer to either increasing the options for courses that are not offered as often as students need them, or at the time or in the format most convenient. Some comments referred to making the schedule of offerings more clear or accessible. For the past years, a multi-year schedule is available for all students, and also course planning is covered through regular advising, so it is unclear why some students do not know or remember this. Some of the responses suggest that the program might reinforce the application of critical and creative thinking to teachers and others in education fields. One student suggested that readings should be available earlier than the course start to allow students to get ahead on keeping up with the course; another suggestion by that student was to support students to be oriented to library resources and research earlier, and to update the technology used to summarize course offerings and information (as an alternative to the university wikispaces). Another comment referred to improving "instructor variety and qualification", without further explanation. Suggestions about supporting students to increase chances of finishing and graduating refer to continuing/increasing advising contact is important, and as mentioned above, working to increase availability and timing of course offerings. Overall ratings: 8 responses for "excellent", 4 for "good".
Non-CCT students who took courses	Several students responded with specific ideas for individual courses (but didn't always name which course), and some commented more on how the course fit in with their personal needs or situation. Responses referred to the

	course taken as "invaluable", "a great experience for nursing majors", "outstanding program", "a very open-minded community", and they included comments to extend the promotion of (or even require) CCT courses to students of other programs, "focusing more on the medical issues of ethics", "emphasize the importance of journal keeping/self-reflection", organize assignments "by numbers and letters", provide additional support for affording course fees, provide a "brief overview of the CCT program at the beginning of each course", offer additional intensive courses for teachers to take during their short break periods (or allow CCT courses as professional development credits, and foster community so that online students form relationships with others. One response, referring to CRCRTH 616 Dialogue Processes, mentioned that the student withdrew after noticing that the readings on the syllabus did not "reflect intellectual or cultural diversity…the program needs a more diverse faculty and staff, a curriculum reset, and a wider commitment to engaging with thinkers from around the world…" Overall ratings: 18 responses for "excellent", 1 for "very good", 7 for "good", 1 for "poor".
Former students	The student rated the program as "excellent" but offered no additional responses for how to support students to complete the program or finish their synthesis/capstone projects.

(e) Stock-taking in response to comments

Overall, the comments and suggestions reflect how students experience the kinds of tradeoffs present in the program given the resources available and possibilities for effectively meeting the needs of a diverse community of students. These survey responses point to places where the rebalancing of tradeoffs might be considered further (and additionally, how changes that benefit some students may then create a condition that challenges others, given these resources). The tradeoffs, which we now plan to share with students before they matriculate[26], include the following:

- Having a small program composed of faculty with diverse specialties allows for close interactions among faculty students and allows students exposure to others from a variety of fields and ways of thinking, but faculty specialties still can't cover the diversity of student interests, making it necessary for students to pull more general course content in the direction of their specific interests and reach out to experts outside of the program.

- Hybrid courses mean that students can take most (but not all) courses in their preferred format, and that courses now regularly exceed minimum enrollment, but both face-to-face and online students have to get used to new ways of engaging with learning as they encounter processes that serve both formats.

- Teaching models that emphasize reflective practice and problem-based learning allow students to define critical and creative thinking in more personal terms and be able to work toward applications and practices directed toward their own fields, but students

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[26] http://cct.wikispaces.umb.edu/tradeoffs

seeking the theoretical underpinnings of critical thinking and creative thinking in support of direct scholarship in these fields have to reach beyond the coursework at times to explore the related content.

- The program's support of student personal and professional development provides opportunities for students to pursue their work and life projects and attempts to influence change in highly flexible and customized ways, but there is no built-in path to a specific career change or job promotion nor single common reference point shared by a cohort of students in moving toward a certain professional outcome.

- The program and its courses explore cross-disciplinary tools and processes of critical and creative thinking through hybrid coursework, problem-based learning, and extensive workshop activities where there is some need to experiment with new approaches and be responsive to the interests and needs of the current students, but this means that course content that favors highly-stable, expert-level approaches tied to a single discipline is not always what best serves the students.

- Teaching by part-time faculty with interesting field experience outside of academia offers the students access to perspectives on practice and experiential learning, but participation by adjunct faculty beyond the direct teaching of a course are limited; course redesign and rethinking curriculum get addressed more slowly than what is ideal, given the shifting (hybrid) formats, evolution of technologies, and the varied and changing needs of students.

The one response from a student who withdrew from the Program provides no grounds for generalization. The 2010 self-study used other sources to enumerate the reasons for students' withdrawal from the program (Table 4 on page 37 of that self-study[27]) and concluded 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." Without repeating this enumeration for the current review, it seems that students also withdraw for financial reasons—loss of employment, increase in fees, and the level of back fees to be paid when returning after an absence.

G. REFLECTION BY CORE PROGRAM FACULTY, INCLUDING ISSUES NOT RAISED IN THE PREVIOUS SUBSECTIONS

It is rewarding for CCT/SICW faculty to be engaged in providing opportunities for students' professional and personal development, both in ways that they sought and in unexpected directions (see II.E and b. and c. in II.F). There are certainly trade-offs (see e. in II.F) and unmet challenges (II.C); not every student is satisfied (II.E), but the Program continues to innovate (II.D) in relation to its Goals and Objectives (Appendix E). Yet, with a small core faculty operating with limited resources, it may be asked whether the Program is viable. Let us address that question.

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[27] http://www.cct.umb.edu/AQUAD10SelfStudy.pdf

A graduate program can said to be needed when that there are students who enroll in it and register for its courses. (Even more so when enrollment income exceeds expenses; see II.A.) With regard to meeting student demand, it is possible to sustain a reliable schedule of required courses and electives for CCT *without additional resources*. The recent higher number of M.A. and Certificate matriculants coming into the regular and SICW tracks can be served with one faculty member and one full-time professional staff with teaching responsibilities, supplemented by a small set of experienced part-timers.

In making this assessment, the core Program faculty are assuming that current routes to CCT (web searches, UMass website, and word of mouth) are sufficient to ensure continuation of whatever has led to increased applications of students, students moreover with significantly higher undergraduate GPAs. (One hypothesis we plan to investigate is that being able to take the Program from a distance with many courses in the hybrid format contributes to recruitment and retention.) In order that students, who are now mostly *not* ever present on campus, feel a sense of community and being cared for, we will continue monthly open houses and the routines of online advising, starting with new students interviews and continuing with the end-of-semester check-ins.

However, in making this assessment, the core Program faculty is also cognizant of the number of loose ends that become especially obvious when preparing the materials for an AQUAD review. Revival of the 50% position that CAPS assigned to SICW and CCT in the period 2011-15 would allow for an increase in admissions and a reduction in such loose ends as:

- Publicity to undergraduates of the combined BA-MA option;
- Coordination of or consolidation of the Science, Technology and Values and the Science, Medicine and Society undergraduate minors, then coordination of the minors with the Science in a Changing World BA-MA option;
- Advancing partnerships with various new Master's programs so that students take each others courses;
- Organizing the Intercollege Seminar in Humanities and Sciences at least one semester per year;
- Following through to get corrections implemented after each round of redesigns of the University website;
- Following through on miscellaneous administrative matters, such as air quality monitoring and cleaning of the office, repairs and replacement of computers and accessory equipment, honoraria for guests and reimbursements.
- Having a backup person so that the GPD and assistant GPD no longer end up having to pick up extra sections when enrollments exceed what was expected or it was not possible to find a suitable part-time instructor able to teach the subject in the hybrid format;
- Keeping enrollments not higher than the longstanding caps for the final three research and engagement courses, which were set to make the courses work well (and reduce the problem of students finishing courses but not their capstone);
- Ensuring the students are preparing their Reflective Practitioner's Portfolios and submit it before graduating, then uploading the Portfolios, exit self-assessments, and capstone projects to the web in a timely fashion;
- Making visible on course wikis, annotated bibliographies and reports that students prepare to serve as resources and models for future students;

- Following up on stalled initiatives, such as the Transformative Education track[28], the doctoral proposal, program-promotion assistance from CAPS (e.g., in running a TEDx event and promoting the summer "Design for Living Complexities" MOOC[29]), making that last course into a regular offering, publication of working papers, and convening the Advisory groups;
- Fostering understanding in CAPS of the Program's mission so that effective promotion for the M.A. and Certificates can be designed to supplement the existing ways students find the Program;
- Advancing slower-than-desired projects, especially the revised edition of *Taking Yourself Seriously*, Collaborative Explorations to support updates of theory and readings for certain required courses, scanning to Scholarworks of bound theses, and maintaining cross-postings among the various social media sites associated with the Program or its faculty;
- Making critical thinking contributions to public discourse in these turbulent times;
- Follow up on, including bringing wider attention to, the innovations incubated in the Program (see II.D).
- Allowing the GPD to protect 1/3 of his work-time (and his leave or grant buyout time) for research and writing (especially in the crucial winter and mid-summer periods for grant applications), including giving talks at other universities and conferences that would raise the profile of CCT/SICW; and
- Allowing the assistant Program Director to protect time to apply to enter and move through a doctoral program so as to become qualified at some future time to direct the Program.

In short, it is possible without additional resources to sustain a reliable schedule of required courses and electives for CCT and it is rewarding for CCT/SICW faculty to be engaged in providing opportunities for students' professional and personal development. Yet, we would feel more satisfied in our work if a modest (and financially justified; see II.A) restoration of resources allowed us to attend in a timely fashion to the loose ends above.

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[28] http://bit.ly/CCTTE
[29] http://bit.ly/cctdesign

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 since. Continuing along the lines of the original plan—which, of course, means addressing the objectives not well met and suggested changes ("deltas")—would be justified for many reasons: To repeat what the Preamble states, CCT's mission remains distinctive and attracts and engages students from the USA 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, has offered courses serving 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.

In light of the above, most revisions proposed to the goals and objectives are minor. Some follow from the Program having moved out of CEHD into CAPS, which means, among other things, that faculty replacements, if they occur, will come from this new home college; most other revisions come from lapsed programs or initiatives. Objectives for which no change is proposed (or simply substitute CAPS for CEHD as home college) are not included below. Deletions are indicated by strikethrough; additions by underlining.

The proposed elimination of objectives concerning an Outreach Unit is not minor, but is realistic given the reduced size of the core faculty and difficulty in securing input from faculty in other units in these times of financial constraints and recent growth in new programs that command the attention of their own faculty. Other objectives that might seem unrealistic given the lack of progress on them (indicated by – in Appendix E) have not been eliminated because they remain aspirations for the future, especially if the 50% position that CAPS assigned to SICW and CCT in the period 2011-15 were revived.

Further revisions to the goals and objectives might follow from discussion during the AQUAD review process and by the CCT faculty afterward, especially with respect to objectives that were not met well and the loose ends in II.G.

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.

A3. Develop and revise Program offerings in emerging areas of social relevance, faculty specialization, and use of educational technology.
    b. Establish foci for promotion of the certificate program, "Science in a Changing World," and "Creative Thinking at Work," to be offered in collaboration with CAPS ~~and a CCT outreach unit~~.

Goal 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 parameters for CCT's operations that conform to resources available (primarily in CEHD, CAPS, CLA) and institutional guidelines.

e1. Low cap to capstone synthesis course that allows instructor to support students to finish during the final synthesis semester, or during the following 12 months.
f. Cross-college institutional arrangements to recognize the ~~CLA/CSM~~ non-CAPS faculty who work in CCT~~, secure continuing CLA/CSM contributions, and include those faculty in promotion and other reviews for CCT faculty in CEHD~~

B2. Achieve recognition of CCT's mission and the other planning parameters by other units, in and beyond ~~CEHD~~CAPS.
~~c2. Timely advocacy for continuation of CLA commitments when core faculty are on leave or retire.~~

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

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

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

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

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 College ~~[formerly Program]~~.

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. 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.

~~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.~~

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

F2. Prepare a prospectus for publication of <u>the second edition of</u> a fieldbook of these techniques and cases.

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 <u>Scholarworks</u> ~~CCT website and UMB curriculum library~~.

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)~~.

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

The CCT program was reviewed in 1994-5, 2002-3, and 2010-11. During the year or so following each of these reviews there were major decisions made about the Program's status by College- and higher-level administration without reference to data or assessments in those reviews.[30] In light of that, we step aside from the detail of the self-study and AQUAD plan and include Table 8 to bring into bold relief the resource and other implications of seven options for the post-AQUAD future of CCT that might well be considered by the Administration.

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[30] Reports from 2002-3 and 2010-11 reviews and other developments viewable at http://www.cct.umb.edu/programreviews.html .

Table 8. Implications of seven 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. Revival of the 50% position that CAPS assigned to SICW and CCT in the period 2011-15.		+ Allow for an increase in admissions + Allow for reduction in the loose ends listed in II.G.	
2. Wind down CCT	Currently matriculated CCT students can be "taught out" over 6 semesters.	- During the teachout, some CCT electives may not get enough students to run.	After the teachout: (if Millman has not yet retired), release from CCT commitment from Philosophy translates to 2 undergraduate sections; Taylor's teaching and administration can be redirected; Szteiter's position is no longer needed. Loss of net income to CAPS (i.e., tuition minus salary) (see II.A).
3. Phase out CCT before the next AQUAD	New CCT students matriculate till Spring '22 with understanding that they must finish by Spring '24.	- During the '22-'24 teachout, some CCT electives may not get enough students to run.	Same as above
4. Phase out CCT when Taylor indicates that he plans to retire in 3 years	New CCT students matriculate with understanding that they might have to finish in 3 years once Taylor states his intention to retire.	- During the 3-year teachout, some CCT electives may not get enough students to run.	Same as above, except Taylor's whole line freed up.
5. CAPS hires full-time replacement for Taylor when he retires	Status quo		Revenue neutral for UMB (give or take savings because new hire would be at a junior level)
6. Home college moves from	Assuming that the	+ Existing CCT course offerings	For faculty salary, revenue neutral

CAPS to Honors with succession plan for Taylor when he retires	Szteiter's position is continued, existing course offerings can serve any extra students.	bring in more upper level Honors students than already happens and recruitment to 4+1 accelerated Masters leads to increase in matriculation in CCT and SICW track. (This derives from tighter integration and because additional charges to undergraduates for taking CAPS courses disappear.)	to UMB (give or take savings because any replacement hire would be at a junior level); increased revenue from additional course registrants; slight reduction in revenue once additional charges to undergraduates for taking CAPS courses as a fifth course disappear.
7*. CEHD allows CCT to go forward with governance approval for formal track in Transformative Education to recruit students who, until March 2015, applied and were admitted to the LTET non-licensure MEd track.	Existing course offerings can serve the extra students.	+ CCT recruits, say, half of the previous annual number of 10-15 matriculants to LTET.	Recover income for UMB that used to come from LTET student registration.

* Options 1 and 7 are compatible with options 3-6.

C. CONCLUSION

We believe that there is a positive place in the University's educational mission for the kind of mid-career personal and professional development pursued by CCT and SICW Masters and Graduate Certificate students. The Program is led by a tenured faculty member and is staffed by experienced and effective instructors. The level of student satisfaction is high. 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 fully eliminated shortfalls in degree completion (documented in this self-study). Reservations we have about these costs and shortcomings may 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.