International Journal of Teaching and Learning in Higher Education 2015, Volume 27, Number 3, 423-433
http://www.isetl.org/ijtlhe/ ISSN 1812-9129

Curriculum Integration: The Experience of Three Founding Faculty at a New Community College

Nicole Saint-Louis, Naveen Seth, and Karla Smith Fuller
Stella and Charles Guttman Community College

This article explores the design and implementation of the curriculum for City Seminar, an integrated course in the first-year experience at a new community college. This interdisciplinary course focuses on a critical issue that provides content and context for quantitative reasoning (QR), reading, and writing (RW) to strengthen students' developmental skills. This integrated curriculum is taught in a learning community. Its goals include greater information retention, better transfer of knowledge and developmental skills-building while students earn college credit. These tie in with the College's overarching goals of improving retention and graduation rates. Early results from this curriculum are encouraging.

The City University of New York's New Community College (renamed Stella and Charles Guttman Community College in Summer 2013) opened its doors to students for the first time on August 20, 2012. The inaugural class had 289 students, all of whom were first-time freshmen. This was a momentous day for the City University of New York (CUNY) and for those of us who had been working at the College in the months and years prior to opening; the first college to open in the CUNY system in over four decades had been in development for over four years before admitting its inaugural class.

Nationwide, it is estimated that only 12% of first-time, full-time students at community colleges graduate within 2 years (Horn, 2010), rising to 29.2% in three years (NCHEMS Information Center, n.d.). Within CUNY, these numbers are respectively 4.3% and 16% (CUNY Office of Institutional Research and Assessment, 2014). One of the goals in founding The New Community College (NCC) was to raise three-year graduation rates to 30% (Concept Paper, 2008). Through selective implementation of high-impact practices targeting particular programs or populations, higher education institutions have achieved some success in improving retention and graduation rates (Kuh, 2008). By studying the best practices of these programs, NCC has created an evidence-based educational model accessible to all its students to improve retention and graduation rates. In doing so, NCC aims to prepare students for transferring into bachelor's degree programs and/or for entering the workforce upon graduation.

The high impact practices that NCC has adopted are set forth in the Concept Paper (2008) which was the basis for the College's design and, to some extent, its operation. By using these practices for all students enrolled at NCC, we hoped to mirror the success of smaller programs for the whole College. The following high-impact practices provide the framework for the NCC educational model:

- Full-time enrollment is mandatory during the first year to ensure that students' developmental skills needs are met in a timely fashion and to provide students with the momentum that will see them complete their programs of study.
- All programs of study are built around the idea of creating and sustaining a thriving New York City to provide relevance and context to teaching and learning, thereby promoting engagement and retention.
- All NCC students complete a common first-year experience requiring a considerable amount of collaborative work in interdisciplinary courses.
- The College offers only a limited number of majors and electives to ensure that there are clear pathways and well-defined steps to graduation, transfer, and/or employment.
- All degree programs at NCC require capstone courses with culminating projects that integrate and demonstrate application of students' learning.
- Services, such as a robust peer mentor program and embedded advising, are offered to support students in every aspect of their academic progress.
- The College conducts comprehensive and continuous assessment to evaluate the success of each component of its educational model.
- The admissions process is a well-coordinated, multi-step set of student-centered events that serve as an introduction to the College's student support network. Students who are accepted and decide to enroll at the NCC are mostly high school graduates. They participate in a mandatory summer bridge program that prepares them for the transition.
- Co- and extra-curricular activities, including experiential and service learning and

internships, complement curricular coursework to bring more meaning and relevance to the latter.

- Students in first-year cohorts progress together as a learning community.
- There is a focus on research in writing-intensive courses in the first-year experience and beyond. Kuh (2008) has noted the importance of first-year seminars and experiences in building students' basic skills and research abilities. An integrated first-year experience embeds developmental skills building into college-level coursework so that students are earning college credit and progressing toward degree completion as soon as they begin taking courses.

In this paper, the authors—members of the NCC's founding faculty—focus on curricular integration, one aspect of this ambitious new college building endeavor and its implementation in the first-year experience. We examine the highly collaborative process of developing an integrated first-year curriculum and the rationale behind this practice. We evaluate the creation and implementation of this curriculum and the subsequent process of assessment and revision.

The end product of this process was a comprehensive curriculum, complete with supporting materials and a curriculum template to guide faculty at NCC. This multi-disciplinary, integrated curriculum building initiative was not without some challenges. We note the issues we confronted and how we addressed them. Our hope is that, through sharing the initial and subsequent stages of developing an integrated curriculum, others interested in replicating and/or building on our work may learn from our methods and experiences.

Rationale for Curriculum Integration

One of the goals of curriculum integration at NCC is to obviate the need for separate developmental courses. Compared to 4-year colleges and universities, community colleges tend to have a higher percentage of students who enter with below college-level reading, writing and/or mathematical skills. Accordingly, we expected that our high-touch educational model and small size would be attractive to students needing developmental, and other, support, as our model should propel students towards college-level coursework more quickly than a standard community college program while providing students added layers of support that they may not receive elsewhere.

Drake and Reid (2010) described the benefits of curriculum integration in achieving learning objectives of otherwise disparate areas of study. Hinde (2005) has also noted how integrating literacy content with social studies can be used to reinforce skills in both areas. In addition, as Beane (1996) suggests, integration promotes the application of knowledge beyond its mere memorization and retention. CUNY has implemented thematic learning communities to support students who need to take developmental courses with some success. Notably, the First Year Academies at LaGuardia Community College offers several different disciplinary learning communities that link courses in developmental mathematics, reading, and/or writing courses with one introductory college-level course. Acario, Eynon, and Clark (2005) described improved retention and persistence in students who begin their college careers needing developmental coursework. Similarly, our integrated courses build students' developmental quantitative and literacy skills while addressing college-level learning outcomes. Many instructors who teach in courses beyond the integrated first-year experience at NCC have reported the benefits of referring back to and building on issues students encountered in the first-year in facilitating the move to more sophisticated topics and skills.

City Seminar

The College's first-year experience is perhaps its most unique and innovative feature. It is built around the City Seminar, a multidisciplinary course comprised of three integrated components that are centered around a critical issue of relevance to students' lives and experiences. The critical issue provides the content and context to build literacy skills in its reading-writing component and numeracy in the quantitative reasoning component. City Seminar integrates college-level coursework with developmental skills and experiential learning to improve learning outcomes as described extensively in the literature related to these areas (e.g., Bailey, 2009; Cox, 2009; Engstrom & Tinto, 2007; Hinds, 2009; Malnarich, 2005; Stigler, Givvens, & Thompson, 2009; Swaner & Brownell, 2008). The degree of integration spans the four levels described by Beane (1996). The 10.5 weekly contact hours of City Seminar include developmental reading, writing, and mathematical content. Successful completion of the first-year experience ensures that students are at college level in these areas by the end of that year.

The first-year curriculum is common across all majors. Entering students join learning communities during the summer bridge. Students remain in their learning community until they select majors and move into major-specific courses at the end of the first year. The 289 students in our inaugural class were divided into four learning communities (or

"houses") comprised of roughly 75 students each. Within each learning community, students were furthered divided into three cohorts of 18–25 students.

First-year students take City Seminar I in the fall and City Seminar II in the spring. In both City Seminars, students investigate a specific topic related to developing a thriving New York City. City Seminar I is comprised of four integrated components—Critical Issue, Quantitative Reasoning, Reading and Writing, and Group Work Space—with each component being taught by a different professor (Table 1). These three professors, along with the Group Work Space instructor, together make up the instructional team for a cohort. Each house also has a Student Success Advocate who, in addition to being an academic advisor, works in close collaboration with faculty to ensure that students stay on track and persist in the face of academic or other issues that may arise and potentially hamper students' progress.

In City Seminar II, the hours devoted to Reading and Writing are replaced by English Composition I, a 3-credit course separate from City Seminar but linked in content.

In Critical Issue (CI), instructors use a problem-based approach to examine an important topic that relates to New York City and to students' lives. A major goal in this section is to hone students' critical thinking skills and to equip them to examine issues from multiple perspectives while providing them with the context and content to develop numeracy and literacy skills. Quantitative Reasoning (QR) builds numeracy to strengthen students' abilities to recognize and make sense of numerical aspects of real-life situations and to be able to use these skills in everyday contexts. In Reading and Writing (RW), instructors build on students' prior knowledge, make inter-textual connections, and use reflective writing to help students practice critical reading and writing skills and deepen understanding of content. Meta-cognitive reflection encourages students to become self-aware of their reading and writing practices. In Group Workspace (GWS, now termed "Studio"), students develop an understanding of their own learning process and have the time and space to workshop specific academic skills that directly support their work in City Seminar through project-based and experiential activities.

Creating the City Seminars was an interdisciplinary endeavor. The courses' learning outcomes were created collaboratively by faculty from various disciplines. The RW, QR, and CI sections of the City Seminars were built around skills spines outlining the skills that that section of City Seminar was targeting. Subsequently, faculty representing CI, QR, and RW identified which outcomes could be met by activities in their respective components, then merged these activities into several "signature assignments" integrated across the three components to provide a seamless experience for students. Since the "signature assignments" comprise complementary elements from the three components of City Seminar, students can use their discoveries in one to support their work in another. For example, students explore a topic in CI, collect supporting data in QR, and then summarize it in RW. This provides more student-generated resources than traditional courses and instills an interdisciplinary approach to problem-solving, resulting in a holistic learning experience for the student. The development of the initial City Seminar curriculum included:

- Defining learning outcomes for the City Seminar overall, as well as for each of its components;
- Developing clear weekly plans for each component that integrated and coordinated classroom activities and assignments across all three;
- Creating and compiling all course materials (text, video, assignments, classroom handouts, etc.) in an electronic portfolio;
- Providing an experiential learning module linking the three City Seminar components;
- Delineating precisely defined criteria for both formative and summative assessment of student learning outcomes based on rubrics developed for each component

Creating the Integrated Curriculum

The founding faculty came to the college from varied backgrounds and specialized in a range of academic disciplines. All faculty members had previously taught in various college or university settings, and some had also worked as clinicians, administrators, or industry and research consultants. While each member brought a different perspective to the process of designing the interdisciplinary first-year experience, there was respect and appreciation for our diverse backgrounds.

Learning outcomes. As an institution committed to ongoing assessment of all that we do, learning outcomes are at the center of the NCC model and guide our work in curriculum development. During Summer 2011, a number of faculty attended AAC&U Learning Outcomes themed conferences/institutes for professional development and created NCC task forces for the development of learning outcomes at the

Table 1
Structure of the City Seminar by Hours

Component	Weekly Time (hours)
Critical Issue	3
Quantitative Reasoning	3
Reading and Writing (Composition I)	3
Studio (Formerly Group Work Space)	1.5

Note. Based on 10.5 hours per week

institutional, first year, program, and course levels. The draft learning outcomes for the City Seminars were refined and revised to arrive at those listed below:

1. Develop as critical readers of a variety of genres. Students will use note-taking, annotation, paraphrasing, and summarizing to demonstrate their understanding of course texts and course content.
2. Develop as critical writers in a variety of genres. Students will demonstrate that they can write and revise drafts; summarize, paraphrase, and quote from texts; and incorporate citations.
3. Demonstrate understanding of major international urban centers, including New York City and their communities from social, cultural, historical and political perspectives;
4. Identify, interpret and assess the perspectives of multiple stakeholders' in different parts of the world on critical urban issues and evaluate the evidence supporting each position;
5. Make judgments and draw conclusions based on quantitative analysis of data, while recognizing the limits of this analysis.
6. Demonstrate an understanding of policies and decision-making processes, their impact upon global urban development, and how to advocate effectively within existing political structures.
7. Begin to identify and distinguish between quantitative and qualitative components pertinent to decision-making.
8. Demonstrate a growing accuracy and fluency with numerical calculations.
9. Use computer applications that help them develop presentations and analyze/organize data.
10. Develop and use a meta-cognitive vocabulary to talk about learning.
11. Demonstrate the ability to work independently and collaboratively on classroom assignments, projects, and oral presentations.

These learning outcomes formed the basis for content in the City Seminar components, assignments in each component, signature assignments across the Seminars, and the skills "spines" that listed the specific skills to be developed in each component.

Skills spines. We use the term "skills spine" (Table 2) to refer to those topics or concepts that are the basis of the components of City Seminar, and that should be covered in every offering of the City Seminar. We believed that creating a template of the required skills would make it easier for new faculty or for faculty with different interests to change the topic, yet adhere to the programmatic learning outcomes. The skills spines focused on key areas. Starting from the earliest drafts, in an iterative, recursive process, as has been the case with all our curriculum development, they were refined to the version shown below.

The initial syllabus created for Fall 2012 (our inaugural semester), used the topic or thematic content as the focal point to build the concepts around the spines. Faculty that have joined the College since have worked with these spines and, in some cases, integrated additional skills into these spines informed by their work with the students in the classroom.

Topics and texts. Initially, faculty spent considerable time discussing and debating the merits of potential topics/critical issues. Prior to narrowing down to a single topic for the City Seminars, several were identified, including consumption, waste and recycling, homelessness, transportation, healthcare, and immigration. It quickly became apparent that, due to time constraints, it would be best to focus on three overarching topics. The group later narrowed the focus to *consumption, waste, and recycling* for City Seminar I and *immigration* for City Seminar II.

Finding a topic that would work equally well across all three components presented some challenges. CI and RW were easier to connect; however, finding QR data on the topic that would be relevant to the students was more challenging. Once the topics were selected, faculty identified texts and resources to address the topics. We divided the reading of potential texts amongst ourselves and discussed the merits of each text in subsequent meetings in terms of relevance to topics (consumption, waste and recycling;

Table 2
Skills Spines Categories

Critical Issue	Quantitative Reasoning	Reading and Writing
Knowledge Inventory/Introduction to Topic	Module 1: Counting, Measuring, Estimating, (Educated) Guessing	Reading
Historical Perspectives		Writing
Investigation of Multiple Perspectives I	Module 2: Spreadsheets: Storing data values from the Seminar Topic	Research
Investigation of Multiple Perspectives II	Module 3: Interpreting Charts and Graphs	Meta-Cognitive
Critical Analysis	Module 4: Manipulating Data, Arithmetic (and other) operations and computations	
Presentation, Reflection and Assessment		
	Module 5: Compound Units of Measurement & Multi-Dimensional Data	
	Module 6: Introduction to Representing Quantitative Phenomena Using Mathematical Language	

immigration) and areas (critical issue, reading and writing, and quantitative reasoning).

At the strong recommendation of the developmental English faculty member that there was value for developmental reading purposes in students reading a book from cover-to-cover, we also spent a significant amount of time vetting books that could serve as a central text for the City Seminar. Faculty attempted to find texts that were relevant to a New York City centric curriculum and to our students in general. Once a text was selected (e.g., *No Impact Man* by Colin Beavan was well researched and written in an accessible, narrative style. Additionally, the author writes about New York City, has a comprehensive website, and regularly speaks to students and other audiences.), faculty needed to familiarize themselves with it to relate it to assignments (e.g., QR used statistics from the book to help inform class discussion and instruction.)

Sharing the curriculum. After the syllabi for the three integrated components were complete, the faculty responsible for coordinating the design of each component assembled resource folders containing supplemental material that supported the common topic. These folders held a multitude of resources including sample assignments, supplemental readings, films, databases and a bibliography containing all resources related to the content. Additionally, each sample assignment was accompanied by a module description that outlined the component and course learning outcomes that the assignment addressed and assessment rubrics, where possible. The module also included other assignments that the assignment could be paired with to create a scaffolded set of activities if the instructor chose to use them in that manner. All of these items were assembled into a City Seminar I Instructional Binder (see Appendix A for a list of items in the binder) that was provided in both paper and electronic forms to all faculty teaching City Seminar. The intention was to have these resources readily available so that faculty newly assigned to this incredibly complicated integrated teaching environment could pull quickly from the resources in the binder for inspiration or use them as they were to develop a semester-long integrated experience for the students. Appendix B lists examples of integrated assignments that were required at different points in the semester.

Assessment and Revision

For the second iteration of City Seminar (offered in Fall 2013), adjustments were made to relieve some of the tensions that cropped up during the inaugural City Seminar course. Teaching teams were assembled, when possible, prior to the close of the 2012-2013 academic year to afford faculty the time and space to work through the curriculum prior to the beginning of fall classes. The administrators also organized several hours of planning time for the instructional teams to organize and coordinate the City Seminar curriculum.

Additionally, there were major changes to the City Seminar curriculum. Two authors of this paper had worked together on one instructional team following the curriculum as shared in the Curriculum Binder. This

instructional team reported a successful and smooth passage through the City Seminar curriculum with their students. However, this was not the experience of all of the teaching teams. Some faculty members preferred more flexibility in the curriculum from topics to assignments. Furthermore, some faculty wanted to move away from consumption, waste, and recycling and build a curriculum around the broader topic of environmental sustainability. For the second iteration of City Seminar, members of instructional teams received the topic name, the learning outcomes, a multi-media resource bibliography, skills spines for all of the components, and an orientation outlining the required elements of City Seminar. Two signature assignments would be determined by each instructional team to meet the learning outcomes for the City Seminars.

In response to student, faculty, and peer mentor feedback on the Group Workspace component of City Seminar, Group Workspace was redesigned as Studio. The focus shifted from direct academic support for the City Seminar curriculum to a more generalized sequence of academic skills-building. In this newly revised space, graduate students, working with the undergraduate peer mentors, determine the content and lead students through exercises and activities to build their socio-academic habits of mind.

Challenges in the Process

Broadly, challenges were philosophical or logistical, sometimes both. Working collaboratively to create a single, uniform curriculum when team members were from varied disciplines presented its own challenges. As is often the case with our students, the way we learn and process information is at least partly a function of our disciplinary training and experience. The skills spines described earlier emerged in such discussions where we drew on expertise and disciplinary knowledge of all faculty members while keeping in mind the important skills that should be addressed in each section of the City Seminars. Often there were differences of opinion on content to include for various components of the City Seminars. One way we were able to use our diverse assets was by working in smaller groups instead of in a single group of all seven founding faculty members. In groups of two or three we could more easily communicate across disciplines and focus on building a curriculum based on learning outcomes. Working in smaller groups on a particular component of the City Seminar allowed for more rapid progress in developing the curriculum for that component. In these smaller groups, faculty members also began to build out topics based on their particular interests and expertise. While we learned to recognize and respect our colleagues' contributions, making those contributions mesh seamlessly was not as easy as when curriculum building resulted from a broader discussion involving all faculty members. This could require some tinkering and reworking in the tradeoff between working more rapidly and working in a more integrated and interdisciplinary fashion.

As our awareness of one another's strengths and disciplines grew, this resulted in a mutual respect and camaraderie that allowed for easier resolution of philosophical differences to bring about consensus. Consequently, while we might disagree, we were able to continue researching, discussing, writing, and rewriting as necessary.

This process made us realize the need for the space and time necessary for this kind of work. Creating and working in a learning community takes discussion, sharing of ideas, coordinated planning, and reflection for such a community to function smoothly and have successful outcomes. As we transitioned from the planning stages to implementation when the College opened its doors to students, we realized that time for collaboration must be a valued part of the work. To this end, we built Instructional Team Time into the teaching load, with 1.5 hours each week set aside for the teams to meet and plan, revise, and/or adjust the curriculum as necessary. Building the curriculum for the first time was exciting and challenging; we expect our students to work with a curriculum that is dynamic, so the work of building, or rebuilding, will be ongoing, as will the need for the resources that go with it. We are currently experimenting with faculty-led planning sessions preceding the start of the semester to give more time for teams to work with the curriculum before classes begin. Although we have not yet found the right formula, we have used two-hour collaborative sessions for City Seminar teams, as well discipline-specific teams (e.g., for all the faculty teaching Reading/Writing).

Participants need to communicate collegially, clearly and on an ongoing basis (Geri, Kuehn, & MacGregor, 1999). They need to start out by familiarizing themselves with their partners' perceptions of the process and styles of working. A point person can help keep the group on task. The process is likely to evolve and become smoother as group members learn more about and from one another. Professional development from experts external to the group and from group members in the areas of learning communities, curriculum integration, and developmental skills is invaluable to the process and in helping group members' benefit from the expertise of their peers. It is important to set aside the time for these efforts.

Faculty members engaged in frequent peer reflection and review to further curriculum development in the year leading up to the opening of the College. They held teach-ins to familiarize all existing and incoming colleagues with the work that

was being done and to use everyone's questions and feedback to make the curriculum more robust.

One of the most difficult challenges to overcome was the lack of time for new faculty to prepare their City Seminar courses. On-boarding for a course such as City Seminar requires enough time for faculty to review relevant materials and to work with their assigned instructional team. The initial training for new faculty occurred on two full days during annual faculty leave in early August. The orientation was organized by the Provost's office and sought to cover all aspects of the College including its history, technology, governance, the reappointment, promotion and tenure processes, a tour of the facilities, and an introduction to all courses in the first year.

An additional challenge was that a faculty member might not be an expert in the specifics of the central topic for the City Seminar (Sustainability and Immigration for City Seminar I and II respectively). Therefore, it is important that new faculty have time to review the literature required for the course and to prepare their individual syllabi and in-class activities. It is also beneficial to have the opportunity to meet with faculty teaching in the same component across different learning communities. The process of on-boarding for new faculty has improved each semester.

The City Seminar Instructional Binder was created and distributed to faculty teaching teams in July, but newly hired faculty who did not join the College until one or two weeks before the fall semester did not have ample time to digest the complicated curriculum. Furthermore, most of these new faculty members were joining already formed instructional teams and were relegated to following a curriculum that had been set by the previously assembled team members with little personal input to the curriculum. However, it was not only new faculty that were unfamiliar with the curriculum; because the curriculum was distributed during annual leave, many faculty members did not have a chance to look at it before the 2012 school year began in late August. The binder was distributed electronically during summer, and then faculty were given paper copies during the planning days just prior to the start of the fall semester. The faculty member who compiled the binder hosted a curriculum development workshop that walked the faculty through the binder and gave advice on how to use it as a resource. However, one issue that became immediately clear is that some faculty members interpreted the items in the binder as requirements. Although the binder was intended as a teaching resource and contained a multitude of ideas for integrated instruction across the three City Seminar components, without proper orientation to the document, most faculty assumed that there was an expectation that they had to follow the course plan exactly as it was presented in the binder. In actuality, the only requirements were the two integrated assignments and evidence that the skills in the three skills spines were being addressed in the classroom activities.

Conclusions

Guttman Community College is still very young, but, in some respects, our model has already seen success. Retention from the first to the second year is well above CUNY and national averages. This ranges between 54.3 (ACT, 2010) and 56% (NCHEMS Information Center, n.d.) nationally. At CUNY community colleges, this is 65.4% for the cohort entering the University in Fall 2012 (CUNY Office of Institutional Research and Assessment, 2014). At NCC, 74.4% of the students entering in Fall 2012 continued into Fall 2013 (CUNY Office of Institutional Research and Assessment, 2014), which is an encouraging indicator for our model. Two years after entering, 27% of the students in NCC's inaugural class graduated with their associate's degree from Guttman Community College. This number compares favorably with the CUNY-wide 2- and 3-year graduation rates of 4.1% and 16% respectively for the most recent years (CUNY Office of Institutional Research and Assessment, 2014), a New York State 3-year graduation rate of 19.6% (Chronicle of Higher Education, 2010), and a nationwide 3-year graduation rate of 29.2% (NCHEMS Information Center, n.d.).

We believe that our model of curriculum development can be replicated at other like institutions. By sharing the challenges we faced in our process, we hope to smooth the transition from small- to large-scale curriculum integration at institutions that are interested in implementing an integrated curriculum. Each institution is unique and is likely to have its own institutional and organizational challenges (e.g., legacy, policy, politics, entropy). To address these, it is useful to take the time and effort to familiarize oneself with one's colleagues in terms of personalities, working styles, and disciplinary expertise. We found that carefully listening to our colleagues over time resulted in genuine appreciation for their points of view and greater comfort in giving ground on certain issues. Greater familiarity with diverse viewpoints brought with it the ability to have more open discussions. Awareness of colleagues' diverse strengths allowed greater synergy in using them productively.

One of the most important aspects of the implementation of the integrated curriculum was student buy-in. During the admissions process, our instructional model was explained to prospective students and their supporters in detail once during a group information session and again during a one-on-one information session facilitated by faculty and staff.

Each student that enrolled at NCC was willing to take part in the grand experiment of whole-college curriculum integration. Our students were and continue to be flexible as we take corrective measures during or between semesters, and they seem to adjust well to our revisions.

Developing and operationalizing this kind of rich curriculum to deliver content and build skills requires considerable effort on the part of faculty and support from institutional administration. It can have implications for course assignments and teaching loads and, as such, there needs to be an openness to experiment in the search for alternative ways to help students succeed.

References

Arcario, P., Eynon, B., & Clark, J. E. (2005). Making connections: Integrated learning, integrated lives. *Peer Review*, *7*(4), 15-17.

ACT. (2010). What works in student retention? Fourth national survey. *Community College Report*. Retrieved from http://www.act.org/research/policymakers/pdf/droptables/CommunityColleges.pdf

Bailey, T. (2009). Challenge and opportunity: Rethinking the role and function of developmental education in community college. *New Directions for Community Colleges*, *145*(Spring 2009), 11-30.

Beane, J. (1996). On the shoulders of giants! The case for curriculum integration. *Middle School Journal*, *28*(1), 6-11.

Cahill, C., Cosares, S., Fuller, K., Rosenthal, W., Saint-Louis, N., Schnee, E., & Seth, N. (2011). Designing an integrated and innovative first-year curriculum for the New Community College at CUNY. *NCC Self Study Report for CUNY Office of Academic Affairs.* [Internal communication].

Chronicle of Higher Education. (2010). New public colleges (2-year). College completion: Who graduates from college, who doesn't, and why it matters. [Microsite of Chronicle of Higher Education]. Retrieved from http://collegecompletion.chronicle.com/state/#state=ny&sector=public_two

Concept Paper. (2008). *A new community college concept paper.* Retrieved from http://www.cuny.edu/academics/initiatives/ncc/Documents/NCC_Concept_paper.pdf

Cox, R. D. (2009). *The college fear factor: How students and professors misunderstand each other*. Cambridge, MA: Harvard University Press.

CUNY Office of Institutional Research and Assessment. (2014). *Institution retention and graduation rates of full-time first-time freshmen in associate programs by year of entry: Guttman.* [Data file]. Retrieved from http://www.cuny.edu/irdatabook/rpts2_AY_current/RTGI_0001_FT_FTFR_ASSOC_COMM-GM.pdf

Drake, S. M., & Reid, J. (2010). Integrated curriculum: Increasing relevance while maintaining accountability. Research monograph 28. *The Literacy and Numeracy Secretariat: What Works? Research into practice.* Ontario, CA: Ministry of Canada. Retrieved from http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/ww_integrated_curriculum.pdf.

Engstrom, C., & Tinto, V. (2007). *Pathways to student success: The impact of learning communities on the success of academically under-prepared college students.* Final report prepared for the William and Flora Hewlett Foundation. Syracuse, NY: School of Education, Syracuse University.

Geri, L., Kuehn, D., & MacGregor, J. (1999). From innovation to reform: Reflections on case studies of 19 learning community initiatives. J. MacGregor (Ed.) *Strengthening Learning Communities: Case Studies from the National Learning Communities Dissemination Project (FIPSE)* (pp. 195-203). Olympia, WA: The Evergreen State College, Washington Center for Improving the Quality of Undergraduate Education.

Hinde, E. R. (2005). Revisiting curriculum integration: A fresh look at an old idea. *The Social Studies*, *96*(3), 105-111.

Hinds, S. (2009). *More than rules: College transition math teaching for GED graduates at the City University of New York*. New York, NY: CUNY Office of Academic Affairs.

Horn, L. (2010). *Tracking students to 200 percent of normal time: Effect on institutional graduation rates.* National Center for Education Statistics, Institute of Education Sciences. Washington, D.C.: U.S. Department of Education. Retrieved from http://nces.ed.gov/pubs2011/2011221.pdf

Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter.* Washington, DC: Association of American Colleges and Universities.

Malnarich, G. (2005). Learning communities and curricular reform: "Academic apprenticeships" for developmental students. *New Directions for Community Colleges*, *129*(Spring 2005), 51-62.

Marcus, J. (2013). *New figures suggest community college grad rates higher than thought*. The Hechinger Report. Retrieved from http://hechingerreport.org/content/new-figures-suggest-community-college-grad-rates-higher-than-thought_12824/

NCHEMS Information Center. (n.d.). *Retention rates: First-time college freshmen returning their second year.* Retrieved from

http://higheredinfo.org/dbrowser/?level=nation&mode=graph&state=0&submeasure=228

Snyder, T. D., & Dillow, S. A. (2012). *Digest of education statistics 2011*. *National Center for Education Statistics, Institute of Education Sciences*. Retrieved from the National Center for Education Statistics website: http://nces.ed.gov/pubs2012/2012001_0.pdf

Stigler, J. W., Givven, K. B., & Thompson, B. J. (2009). *What community college developmental students understand about mathematics*. Stanford, CA: The Carnegie Foundation for the Advancement of Teaching.

Swaner, L. E., & Brownell, J. E. (2009). *Outcomes of high-impact practices for underserved students: A review of the literature*. Washington, DC: Association of American Colleges and Universities.

NICOLE SAINT-LOUIS, DSW, LCSW is a founding faculty member in Human Services at Stella and Charles Guttman Community College. In addition to working on developing the overall program and curriculum for Human services, she collaborated with colleagues to co-create courses in the first-year experience. She has over 15 years of clinical practice experience and her research interests include culturally relevant interventions and pedagogy, narrative medicine, palliative and end-of-life care, psychosocial oncology, job stress and compassion fatigue.

NAVEEN SETH, PhD is a founding faculty member in Business Administration at Guttman Community College. In addition to teaching courses in Business, Economics and Statistics, he has created the curriculum for the Business program and collaborated with colleagues to develop courses for the first-year program. He focuses on the scholarship of pedagogy and is interested in ways to improve student learning, retention and graduation.

KARLA SMITH FULLER, PhD is Assistant Professor of Biology and Founding Faculty at Stella and Charles Guttman Community College (formerly The New Community College at CUNY). She teaches Quantitative Reasoning in the First Year Experience and Biology courses for continuing students. Her primary area of interest is the study of teaching pedagogies that improve learning, engagement and effectiveness in the classroom. More specifically, she is interested in implementing specific teaching strategies that foster a student-centered learning environment in science courses that increase persistence and retention of knowledge.

Acknowledgements

The authors would like to acknowledge the contribution and support of their founding faculty colleagues whose work was essential to developing this curriculum.

Appendix A
Digital Instructional Binder

TABLE OF CONTENTS

Appendix B
Example of Integrated Assignments

Sample Activities/Assignments across the Integrated Course

Cycle 2: The Afterlife of our Material World
Week 7: Introduction to Topic: Waste, Recycling and Sustainability

Critical Issue	Quantitative Reasoning	Reading and Writing
Clicker poll: My waste & recycling habits Garbage classification activity Our Eco-Footprint (connecting cycles 1 and 2) **Assignments:** • Field exercise: Observe and record waste and recycling practices in your neighborhood • Garbage inventory • Response Journal #5 (Reflections on garbage inventory)	*Quantitative focus:* Translate problems from a variety of contexts into a mathematical representation and vice versa. Worm Composting Bin set-up **In class:** Methods of interpreting and representing quantitative data - *Garbage Land* quantitative data analysis Calculate and compare your carbon footprint **Assignments:** Create compost data collection instrument	Recycled poetry and classroom "gallery walk" Begin carbon footprint report Note-taking techniques (continued) **Assignments:** • Reading Journal #6 (Detailed summary of *Garbage Land* reading) • Draft #1 of Carbon Footprint Report

Cycle 2 Week 8: Historical Perspectives on Waste and Recycling in NYC
Students explore how and why New York City's waste and recycling practices have changed over time and create timelines of waste and recycling practices.

Readings: *Strikebreaker* (coursepack) *How Epidemics Shaped the Modern Metropolis* (coursepack)		
Critical Issue	Quantitative Reasoning	Reading and Writing
Visit the Lower East Side Tenement Museum Visual historical timeline of waste and recycling practices in NYC **Assignments:** • Response Journal #6 (Reflections on museum visit)	*Quantitative focus:* Understanding and using compound units of measurement. Prediction and Rates. **In class:** • Cholera! Investigating the NYC cholera epidemic of 1832 • Understanding prediction and rates • Continue collecting compost data • Refine compost data collection instrument	Peer-review carbon footprint report Reading discussion of *Strikebreakers* The work of narrators in fiction Peer-review neighborhood observation essay **Assignments:** • Carbon footprint report <u>due</u> • Reading Journal #7: Understanding the narrator's point of view in *Strikebreakers* and #8 (Summary and response of cholera articles) • Draft #1 of Observation and Description of Neighborhood Waste and Recycling essay