Collaborative Curriculum Revision Project (CCRP)

Documentarian's Report

December 2015

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Introduction

The fifth series of the Collaborative Curriculum Revision Project took place during the fall semester of 2015. The project, an ongoing effort to create collaborative partnerships between public high school teachers, librarians, and CUNY faculty, is part of the effort to increase college readiness across New York City.

This series was comprised of five professional development workshop sessions held in October and November at York College in Jamaica, Queens. Faculty and librarians from York College and Queens High School for the Sciences at York College (referred to as Queens High School from here on), developed a shared collection of teaching strategies for preparing students for the college experience, and revised a high school science research curriculum. To create a framework for revisions to the high school curriculum, participants engaged in conversations on common teaching goals, challenges, and best teaching practices. As Queens High School is on the York College campus, and shares its library facilities, participants created many opportunities for a collaborative community of practice to extend beyond the bounds of the workshop series.

The activities that took place during this series were informed by the recommendations of previous Collaborative members who participated in workshop series between 2012 and 2015. Their reflections and successes were outlined in the white paper ***DOE/CUNY Library Collaborative: Bridging the Gap Between High School and College***, which current participants were able to use to help guide their practice. All participants were also invited to a training which took place at CUNY offices in mid-town Manhattan facilitated by library staff. The facilitator and documentarian of this series also underwent training, participated in a mock workshop session, and were given access to previous documentarians' reports, from which they were able to develop their own agendas for each collaborative session.

This report outlines the collaborative revisions to the high schools science research curriculum, goes into further detail to describe the process of revision and community-building, and summarizes successes as well as recommendations to inform future workshop series.

High School Curriculum

The high school science research curriculum presented for revision was a 9th grade introduction to science research course and was comprised of course objectives, an overview of the course's units of study, sample activities, a unit project, and examples of student work from previous years. Roughly half of Queens High School's incoming freshman class is enrolled in intro to science research, while other students enroll in research courses more specific to different content areas. The course culminates with students using their original science research to write

and submit an experiment proposal that is grounded in current academic research in the field of science.

The design of the curriculum was not constrained by prescribed materials nor did it culminate in a standardized test, although the Common Core State Standards for high school level research and writing were used to inform its content. The curriculum did not include specific lessons but rather a broad overview that allowed participants to work from the outside in, beginning with objectives and moving toward specific activities informed by those objectives.

The presenting Queens High School faculty member requested that workshop participants focus their revision efforts on 1) developing scaffolds to help students synthesize research, 2) creating more specific and targeted objectives, and 3) building partnerships between the course and York College's library resources and services.

Additionally, both Queens High School faculty members (both of whom teach freshman research courses—one in science and one in English) were interested in developing school-wide standards for research. Finally, both were interested in using this experience to continue the development of their high school's writing center by learning from and modeling some of the practices used at York College's writing center.

Revision

Revision of the science research curriculum took place in four major stages: 1) discussion of common teaching goals, challenges, and best practices; 2) identification of skill sets constituting "college-readiness" and strategies for teaching toward development of these skills; 3) discussion of revision opportunities as well as opportunities for alignment to college level research skills; 4) development of activities and collaborative practices for curriculum revision.

Teaching Goals, Challenges, and Best Practices

During the first two workshop sessions participants discussed common teaching goals, challenges and realities, and best practices used to address these goals and challenges. Many of these goals and challenges informed the revision process. Among the goals discussed during the first session, the following were identified as common to all participants:
- Shift the responsibility for learning to the student
- Develop students' higher order thinking skills
- Expose students to a wide array of college and career opportunities
- Instill in students college-ready habits of mind, including curiosity, self-reflection, and persistence in meeting challenges

Challenges to meeting these goals were discussed in terms of those that are unique to high school and those that are unique to CUNY. It was through these discussions that participants were also able to see where challenges overlapped. Of the challenges unique to high school:

- Low access to school resources, such as space or technology
- Recent education trends favor extroverts (i.e. a focus on group work and discussion), while many students are in fact introverts
- Students are lacking in realistic career knowledge and experience
- High school teachers do not have the necessary time to collaborate in order to align units and establish standards around research requirements and expectations; teachers often do not know if they are working parallel to teachers in other subjects or grades

Of the challenges unique to CUNY:

- Students do not want to engage in group work
- Students do not come in with the broad cultural/social knowledge that would help them distinguish between credible and non-credible research sources
- Students have low or inconsistent expectations for themselves (i.e. do not perform well in their choice of major)
- Students vary in their academic strength and background knowledge

Among the best practices and specific teaching strategies discussed were:

- The ability to evolve and adapt practices to students' backgrounds and needs
- Use an interactive/inquiry driven method of teaching and learning
- Educator acts as a facilitator rather than a lecturer
- Scaffolding complex reading and writing projects into manageable parts

Revision Opportunities

In order to revise the high school science research curriculum, participants chose to focus their collaborative work on the following:

- Incorporating reading strategies and scaffolds to help students put academic research articles into their own words
- Collaborating with York College librarian to work on identifying credible sources and using key words for academic research databases
- Discussing best practices for evaluating students using a rubric

Developed Activities

Much of the revision process was developed through several college faculty presentations. No concrete deliverables were created during workshop sessions; however, discussion was lively and many new ideas came out of the collaborative process.

Reading strategies and scaffolds were discussed in the context of an activity presented by the college biology faculty member. The activity, intended for upper level biology majors, was meant to teach students how to pull information from a research article without plagiarizing, and to summarize ideas in their own words. In order to accomplish this, worksheets prompted students to prioritize notes on a research article, providing them with a condensed space to ensure prioritization. Prior to reading the article students engaged in "facts and figures," for which they first describe data in their own words in order to build inference skills and prior knowledge. Post-worksheet, students presented their work and concluded by asking their peers for questions, which aligned with our goal of educator-as-facilitator.

The college faculty librarian, who also teaches in the high school, presented a multi-lesson plan to teach high school freshman how to use library resources for research, which set a precedent for how Queens High School could use York College library resources in the future. The lessons were focused on the following key research skills: developing key words to use in a Boolean search; finding key words using a "quick search" method through Google Books; navigating databases, such as Gale; and applying these skills to high school coursework.

Finally, participants discussed best practices for assessment. This discussion revolved largely around a presentation by the college English faculty, who presented a college writing rubric with sample comments.

In sum, the revision process opened up many avenues for successful collaboration between high school and college faculty members, which would help better align the freshman science research curriculum with college-level research and writing skills.

Successes, Challenges, and Recommendations

As previously mentioned, all participants learned about the overall goals for the Collaborative Curriculum Revision Project through ***DOE/CUNY Library Collaborative: Bridging the Gap Between High School and College,*** the white paper on prior workshop series, and through participation in an orientation kick off facilitated by Graduate NYC in collaboration with DOE and CUNY library staff. Participants engaged in the fall 2015 workshops with the understanding that they would contribute to the goals set forth in the white paper.

The facilitator and documentarian were provided with resources and training to implement recommendations set forth in the Documentarian's Report of CCRP's 2015 and spring 2015 iterations, which helped contribute to the fall 2015 workshop's successes. These successes included:
- Agreement from all participants that the workshop had helped them understand one another's teaching challenges

- Desire and intention voiced by high school and college faculty from English and library services to collaborate with their counterparts on their existing work in developing high school research standards grounded in the Common Core State Standards as well as a high school writing center modeled off a college writing center
- Report from the high school faculty members of greater awareness of York College's library facilities, as well as an intention to work more together in the future
- Report from the college faculty members of a greater awareness of Common Core State Standards, and their impact on teaching and learning

Challenges in progressing toward the workshop goals were identified during the focus group discussion that took place at the end of the fifth and final workshop session. These included:

- The gap between the average Queens High School student (all students take the Specialized High School Admission Test to attend) and the average York College student made it difficult to discuss high school and college alignment
- Transitioning from abstract conversations on educational goals and best practices to practical conversations on developing specific curriculum
- Staying on task and adhering to the activities and discussions outlined in the workshop agendas

The following recommendations are set forth for consideration in streamlining the workshop experience for all participants:

- **Create a method for sharing and disseminating documents and a digital space for ongoing collaboration prior to the first workshop session.**

    The facilitator created a shared Google Drive folder for sharing documents during the workshops. However, the process to decide what method of digital sharing should be used took several discussions. Creating a folder in advance would increase the participants' ability to upload and receive documents ahead of time and would be more efficient.

- **Consider including high school faculty members from a high school more representative of the student population at York College.**

    Queens High School is a specialized high school with a very high performing and motivated group of students. While York College has a

diverse population of students, many of the challenges brought up revolved around students' incoming reading levels, as well as lagging independent work skills. While this did not interfere with the quality and depth of discussion, it did present several missed opportunities. For example, as one of the project's aims is to better align high school and college curriculum, it stands to reason that the revision process should have clear aims in addressing common academic issues among students. Participants agreed that high school faculty from another more representative high school should be included.

- **Create time to work on revision deliverables during the workshop sessions.**

  While there were many productive and illuminating conversations around common challenges, the impact of Common Core State Standards, and best practices in education, there was little time allotted to revising specific portions of the high school curriculum. Therefore, much of the revision process lived in ideas rather than in creating concrete deliverables. The process of creating deliverables, which could have incorporated some of the ideas put forth in discussion, would have been a very valuable experience for all involved.

- **Consider development of a framework for ongoing collaboration following the end of the formal workshop series.**

  One of the stated goals of the Collaborative Curriculum Revision Project is to create communities of practice that support high school and college teachers and librarians. While there were plans made to collaborate in the future, it may be helpful to future workshop series to have time built in to them to formally consider how collaboration can happen and what resources participants may need.

Appendix A: Session Agendas

CUNY-DOE Collaborative Curriculum Revision Project (CCRP)

Workshop 1 Agenda
October 6, 2015, 4PM-6PM
York College, CUNY, Room 2A15

Session Goals
- To introduce ourselves and define our roles in the CCRP process
- To explore our individual and shared intentions for this series of meetings
- To share and discuss our educational values (habits of mind, learning objectives, and goals that we strive to cultivate in our educational practices)
- To assess the issues, realities, and challenges we fact related to teaching and learning in high school and college

1. **Introductions** (10 minutes)

2. **Create a Parking Lot**

3. **Roles and Goals (15 minutes)**

4. **Communities of Practice Quotation Exercise**

5. **Discussion of Educational Values & Learning Objectives (30 minutes)**
    What are some of the things you value about educational practices?
    What kind of environment do you hope to create in your educational space?
    What habits of mind do you hope to cultivate?
    What goals do you have for your students?
    What goals do you have for yourself as an educator?
    What specific learning objectives do you hope your students will meet?

6. **Is This a joke? (1 minute)**

7. **Discussion of Issues, Realities, and Challenges (40 minutes)**

    What are some of the social and cultural realities that impact our learning?
    What issues impact your capacity to foster an "ideal" educational space?
    What challenges stand in the way of student achievement?
    What learning obstacles do you see as particular to your discipline?

8. **Conclusions and Looking Ahead (4 minutes)**

CUNY-DOE Collaborative Curriculum Revision Project

Workshop 2 Agenda
October 13, 2015, 4PM-6PM
York College CUNY, Room 2A15

Session Goals
- Compare and contrast perceptions of the professional challenges we face
- Assess best practices for teaching at the high school and college levels
- Presentation and initial responses to a curricular unit

Activities
1. **Is This a Joke?! (5 minutes)**
   - How do you know that I know what you mean?

2. **(Silent!) Talk with Your "Chalk" (25 minutes)**
   - What are the challenges that you face at your school, with families/students/others?
   - What challenges occur within the classroom?
   - What challenges do we have in common?

3. **Conversation About Best Practices for Teaching (25 minutes)**
   - What activities do you employ to help students meet learning objectives?
   - How do you acknowledge and address challenges students face while encouraging them to move forward?
   - What teaching techniques can be used to accelerate the acquisition of critical skills that students are missing?
   - How do teaching techniques and classroom activities align across levels and institutions?
   - What are strategies to help students develop analytical reading, system thinking, research, and problem solving skills?
   - How can partnerships with librarians impact student achievement?
   - How can we facilitate student transition from assignments with built in scaffolding to independent work more characteristic of college?
   - Where do we find new sources to incorporate into our classrooms?
   - How can we promote active inquiry processes?
   - How do we prepare students to conduct research and evaluate sources?

4. **Presentation of Unit (30 minutes)**

5. **Initial Discussion of Unit**

6. **Concluding Thoughts**

CUNY-DOE Collaborative Curriculum Revision Project

Workshop 3 Agenda
October 20, 2015, 4PM-6PM
York College, CUNY, Room 2A15

Session Goals
- Evaluate how the goals we have identified provide a lens through which to consider high school and college science and library lessons
- Compare and contrast assignments from a college professor and librarian
- Evaluate continuities and discontinuities between the high school research unit, library and college science lessons
- Assess how we as a group can contribute to the high school unit

1. **Review and Reprocess the Goals We Identified as a Group (30 minutes)**
   - Recognize the importance of our understanding of our own goals
   - Compare and contrast how we each perceive our goals and what they represent through a card sort activity
   - Assess how prioritizing our group goals provides a lens through which we can consider and revise these lesson materials

2. **Components of a College Assignment (30 minutes)**
   - What skills do entering college students need to achieve success?
   - How do the expectations of a college course compare and contrast with those of the high school research class?
   - What perspective does the college assignment provide for considering the high school science research unit?

3. **Components of a Library Assignment (30 minutes)**
   - What skills is a librarian teaching high school students?
   - How do the skills being taught by a librarian in a high school class link to those in a high school science research class and in a life science college class?
   - What perspectives does a librarian's high school lesson provide for considering the high school science research unit?

4. **Connections (30 minutes)**
   - Identify similarities and differences in the skills required for high school, library and college assignments
   - Formulate strategies we can explore further to link the high school research unit to library and college assignments
   - Assess how our group's goals for students provide a framework within which we may continue to engage in this work

CUNY-DOE Collaborative Curriculum Revision Project

Workshop 4 Agenda
October 27, 2015, 4PM-6PM
York College CUNY, Room 2A15

Session Goals
- Assess what the research says about key issues raised in our parking lot including the impact of class size, the value of teacher collaboration, every teacher a literacy teacher/CCSS/content area vocabulary and game based learning and how our understanding of these issues provides frames through which we can approach lesson planning
- Explore connections between the high school and college library, science and
- English/writing units and skills with which we have been presented
- Agree on next steps through which the team can contribute to the unit on *Writing a Research Proposal*

1. **Clearing the Parking Lot: How does the research frame our view? (40 minutes)**

a) **Impact of Class Size**
   Considering the body of research as a whole, the following policy recommendations emerge:
- Class size is an important determinant of student outcomes, and one that can be directly determined by policy. All else being equal, increasing class sizes will harm student outcomes
- The evidence suggests that increasing class size will harm not only children's test scores in the short run, but also their long-run human capital formation. Money saved today by increasing class sizes will result in more substantial social and educational costs in the future
- The payoff from class-size reduction is greater for low-income and minority children, while any increases in class size will likely be most harmful to these Populations
- Policymakers should carefully weigh the efficacy of class-size policy against other potential uses of funds. While lower class size has a demonstrable cost, it may prove the more cost-effective policy overall

Schanzenbach, D.W. (2014). *Does Class Size Matter?* Boulder: National Education Policy Center, Univ. of Colorado.
http://greatlakescenter.org/docs/Policy_Briefs/Schanzenbach_ClassSize.pdf

Numerous studies have investigated the impact of class size on student outcomes. This analysis contributes to this discussion by examining the impact of class size on student outcomes in higher education. Additionally, this paper investigates the importance of student load (total number of students taught across all courses) in educational outcomes. We find that both class size and student load

negatively impact student assessments of courses and instructors. Large classes and heavy student loads appear to prompt faculty to alter their courses in ways deleterious to students. Monks, J. & Schmidt, R. (2010). The impact of class size and number of students on outcomes in higher education. Cornell University, School of Industrial and Labor Relations: http://digitalcommons.ilr.cornell.edu/workingpapers/114/

b) Time for Teachers to Collaborate

John Hattie's meta-evaluations and analyses of student achievement (2009) note that the biggest effect on student learning is "when teachers become learners about their own teaching." Teacher collaboration that involves teachers creating and examining student work, solving mutual school-based problems and trying out different instructional approaches together has been shown to result in greater student learning outcomes (Hattie, 2009). Hattie's research validates more than two decades of research on teacher learning (see earlier citations of Joyce & Showers, 2002; Darling-Hammond & Bransford, 2005). Rather than isolating teachers in a classroom with no opportunities to talk to one another, educational planners and decision makers must work to help shape the culture and structure of the educational system and schools so that they provide time and support for teachers to work together to examine student work or to engage in problem solving with one another. (p. 44) Burns, M. and Lawrie, J. (Eds.). (2015). *Where It's Needed Most: Quality Professional Development for All Teachers*. NY: Inter-Agency Network for Education in Emergencies. http://www.toolkit.ineesite.org/resources/ineecms/uploads/1162/Teacher_Profes sional_Development_v1.0_LowRes.pdf.

The remarkable feature of the evidence is that the biggest effects on student learning occur when teachers become learners of their own teaching, and when students become their own teachers. When students become their own teachers they exhibit the self-regulatory attributes that seem most desirable for learners (self-monitoring, self-evaluation, self assessment, self-teaching). Thus, it is visible teaching and learning by teachers and students that makes the difference. (p. 22). Hattie, J. (2009). *Visible Learning, A Synthesis of over 800 Meta-Analyses Relating to Achievement*. NY: Routledge.

c) Writing Centers

…In our view, writing center scholarship has been largely artistic or humanistic, rather than scientific, in a field where both perspectives can and must inform our practice. While theoretical investigations build the foundation for writing center studies, and anecdotal experience points in the direction of best practices, empirical research will create a credible link between the two. (p. 3). Babcock, R.D. and Thonus, T. (2012). Researching the Writing Center, Towards an Evidence-Based Practice. NY: Peter Lang.

There is a paradox in the relationship of peer tutors to teachers and the students they help. As John Timbur (1987) pointed out, if one is qualified to tutor, they are no longer a peer. Peer tutors are tutors and peers at the same time, and they have to negotiate the tension between being a peer and being a tutor. This is a complication

with which writing centers have always struggled, and peer tutors learn to manage this tension and to lean sometimes toward peer and sometimes toward tutor. But they are always students, and that part of their identity is critical to the role they play in other students' literacy lives. (p. 12) Rafoth, B., Wells, J. and Fels, D. (2012). The Promise of Change with One-to-One Instruction. Chapter 1 in Fels, D. and Wells, J. (Eds). *The Successful High School Writing Center, Building the Best Program with your Students*. NY: Teachers College Press.

   d) **Ways to fund extra classroom teacher activities:**
   i.   Per session payment (additional money)
   ii.   Compensatory time (reduced teaching load)

   a) **Every teacher a literacy teacher/CCSS/content area vocabulary**
     Researchers have consistently reported that content-area teachers believe that (a) it is someone else's responsibility to teach reading and writing, (b) they lack the ability and/or training to teach reading and writing, and/or (c) they do not have the time to provide literacy instruction along with their full content curriculum… By infusing literacy instruction with content instruction, content-area teachers support adolescents in gaining necessary literacy proficiencies while deepening content learning. Furthermore, middle and high school teachers are "responsible for literacy instruction that also promotes content-area learning" (International Reading Association, 1998, p. 4). (pp. 357-58) Draper, R.J. (2002). Every Teacher a Literacy Teacher? An Analysis of the Literacy-related Messages in Secondary Methods Textbooks. *Journal of Literacy Research*, 34(3), 357-384.
     NGSS [Next Generation Science Standards] will require major shifts in science education, comparable to major shifts due to CCSS [Common Core State Standards] for English language arts and literacy and for mathematics. Across these three subject areas, the new standards share a common emphasis on disciplinary practices and classroom discourse. As engagement in these practices is language intensive, it presents both language demands and opportunities for all students, especially ELLs [English Language Learners]. Given the richness of science and engineering practices, NGSS will lead to science classrooms that are also rich language learning environments for ELLs. An important role of the science teacher is to encourage and support language use and development in the service of making sense of science… [we] stress the value of attention to the language of the science classroom that moves toward the disciplinary language of science. (p. 231) Lee, O., Quinn, H. and Valdés, G. (2013). Science and Language for English Language Learners in Relation to Next Generation Science Standards and with Implications for Common Core State Standards for English Language Arts and Mathematics. Educational Researcher, 42(4), 223-233. DOI: 10.3102/0013189X13480524.

   b) **Teaching College in 2015**
     In the past few decades, those of us working in institutions of higher education have seen an instructional paradigm shift. Given the growth in research on learning, our views of how people learn best have developed over the last few decades; from behaviorist perspectives of learning, we have also come to understand learning

from cognitive and social perspectives…This development has caused higher education instructors to modify their instructional practices as a result. Many instructors have moved away from a sole diet of traditional lecture, with the occasional short-answer question to the class in which students listen, repeat, and occasionally apply, toward a modified menu of pedagogical platforms in which, much of the time, students are active participants in the learning process. Higher education faculty, then, have gone about this task of engaging students actively in learning in a number of important ways by adopting a range of instructional approaches. (p. 1) David, N., Major, C.H. and Michaelsen, L.K. (2014). Small-Group Learning in Higher Education—Cooperative, Collaborative, Problem-Based, and Team-Based Learning: An Introduction by the Guest Editors. Journal on Excellence in College Teaching, 25(3&4), 1-6.

…a 15th-century university professor would feel right at home in many of today's classrooms. While the agriculture, medicine, science, transportation, manufacturing, and communication industries have all been transformed and improved, teaching relatively has not. The same age-old assumptions that teaching is telling, learning is absorbing what the instructor tells, and knowledge is subject matter content continue to the present day. (p. 86) Johnson, D.W., Johnson, R. T., & Smith, K. A. (2014). Cooperative learning: Improving university instruction by basing practice on validated theory. *Journal on Excellence in College Teaching,* 25(3&4), 85-118.

c) Game Based Learning

A number of studies have found that near and far transfer from computer games to external tasks occurs if they engage comparable cognitive processes. These findings further indicate that if transfer to external tasks is the objective, cognitive task analyses of both the game and task need to be conducted to assess overlap in the processes engaged by both…While some findings suggest that computer games hold promise for transfer, current evidence for transfer is much weaker than the enthusiasm for using computer games in instruction. (p.486) Tobais, S., Fletcher, J.D. and Wind, A.P. (2004). Game-Based Learning. Chapter 38 in Spector, J.M., Merrill, M.D., Elen, J. and Bishop, M.J. (Eds). Handbook of Research on Educational Communication and Technology, 4th ed. NY: Springer.

Digital serious games (SGs) offer a high potential to foster and support learning in educational and training settings. SGs aim at improving learning processes by providing attractive, motivating and effective tools. So far, effectiveness of SGs has been shown by recent studies, but the potential of SGs in education is still far to be fulfilled, in particular concerning higher-order learning goals and there is a growing need for educational technology research in this field. Moreover, education, cognitive and engineering methods and tools are needed for efficiently building and evaluating games as means that can provide effective learning experiences. (p. 1) Bellotti, F., Bottino, R. M., Fernández-Manjón, B., & Nadolski, R. J. (2014). Guest Editorial: Game Based Learning for 21st Century Transferable Skills: Challenges and Opportunities. Educational Technology & Society, 17(1), 1–2.

2. How can we connect-the-dots from our work to contribute to the Freshmen

Science Research class unit on Writing a Research Proposal? (40 minutes)
- How does this unit connect with the skills contained in/required for Bio 487 Special Topics in Biology?
- How does this unit connect with the skills taught in high school and college library classes?
- How does this unit connect with skills taught in English/writing classes at the high school and college levels?
- How do the high school and college library, life lab sciences and English/writing skills all connect?

3. Next Steps we will engage in to assist with Writing a Research Proposal (40 minutes)
- What if any additional intellectual resources do we need to make a contribution to the unit and if so who can obtain what from where?
- What if any tools or samples can we assist in gathering or constructing for the unit and if so what and how?
- Are there issues of culture or difference which we should be considering in our work?
- What will we each do individually and as a team to contribute to this process between now and the end of our next and final meeting?

CUNY-DOE Collaborative Curriculum Revision Project

Workshop 5 Agenda
November 10, 2015, 4PM-6PM
York College CUNY, Room 2A15

Session Goals
- Analyze objectives for Unit 4, Writing a Research Proposal
- Compare and contrast options in developing an evaluative rubric for Writing a Research Proposal including reviewing the relevant Common Core Standards
- Identify ways to increase student understanding of and use of the library and librarian
- Evaluate how Writing a Research Proposal ties into high school and college
- Assess what next steps the group may wish to take to continue the process

1. **Review Objectives for Writing a Research Proposal** (30 minutes)
   objectives below are from the Science Teacher
- To research information on areas of interest
- Critically evaluate sources of information in relation to their chosen topic of research
- Write a coherent research proposal with an acceptable research question or
- hypothesis
- Show an ability to develop and defend a reasoned argument drawing on the relevant literature
- Test the hypothesis outlined in the research

2. **Consideration of possible evaluation rubrics** (40 minutes)
- What does a college level rubric look like? from Theresa Rooney
- How do the Common Core Learning Standards (NYS version of the CCSS) contribute to a possible rubric for a high school science unit?
  Excerpts from the Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12
  (file:///C:/DOCS/Graduate%20NYC!/nysp12cclsela.pdf):
1. Write arguments focused on *discipline-specific content*. [emphasis in the original]
   a) Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.
   b) Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline appropriate form and in a manner that anticipates the audience's knowledge level and concerns.
   c) Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

    d) Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

    e) Provide a concluding statement or section that follows from or supports the argument presented.

2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

    a) Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

    b) Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

    c) Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.

    d) Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.

    e) Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

    f) Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

3. (See note; not applicable as a separate requirement)

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience

5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

9. Draw evidence from informational texts to support analysis, reflection, and research.

10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

1. **How does our work link to the library/librarian** (30 minutes)
- How are students credited for using the library/librarian as the assignment is currently structured?
- How might the assignment be enhanced to deepen student's understanding of and use of the library/librarian?

4. **Final Reflections: how may the group perpetuate and expand itself?** (20 minutes)
- How have our meetings furthered the high school-college collaboration process?
- What if any next steps can and would this group like to take to continue and further the process?

Appendix B: Documents

<u>I. High School Academic Research Lesson (from Christina Miller)</u>

10th Grade Global Studies Assignment Library Resources component

Students are researching monarchs, trading companies and explorers from the "Age of Exploration" and gathering information for oral presentations.

Skills: familiarity with information sources (Google Books, Gale Virtual Reference Library [GVRL], EBSCO
databases, Book Catalog); accessing and searching sources; formulating keywords; use of truncation;
Boolean operators; Advanced Search menu; citing

These skills connect to the American Association of School Librarians Standards for the 21st Century Learner
(which crosswalk to the Common Core State Standards) and to the Association of College and Research
Libraries Information Literacy Competency Standards for Higher Education. For example, AASL Standard
1.1.4 "Find, evaluate, and select appropriate sources to answer questions."

I.   <u>Introduction</u>
      Sources of information include books; e-books; Google scanned books; magazine, journal and
      newspaper articles; emails; tweets; editorials; blog entries; letters; interviews; chapters; movies;
      signed and unsigned encyclopedia articles; documents and reports from websites, etc. – each with
      a specific citation (the method used to credit a source when you use it). You can even cite a
      pencil (artifact):

Three major citing styles: MLA, APA, Chicago

II.   Generating keywords (Appendix 1: Exercise)

III. Modeled how I would approach the assignment (students followed along on their own computers):
      A.   Brainstorming and gathering information: Google Books

      B. Finding more specific information from GVRL (specialized encyclopedia database)

C. Finding magazine and journal articles: EBSCO (Search Multiple EBSCO dat abases)

D.   Searching for books in the Library's catalog

II. College Writing Rubric

English 126
Fall 2015
Formal Paper Feedback

Formal Paper Rubric

Your paper is graded using the following 7 statements, worth 2 points each (except for number 1) for a total of 14 points. If the work submitted is done 100% according to the statement, you receive 2 points. If you did it but there are errors, you may receive 1 or 0, depending of the level of error.
Other parts of this formal paper activity include submitting a draft (2 points) and peer review (4 points) for a total of 20 points or 20% of your grade. It will show up in My Grades as Alien Paper Grade. (FYI -Your checklist counts as a journal but the absence of it means you lose the 14 points for the final version).

1. The paper was submitted in a timely manner and was within the length range (650-825 (+10%))/(negative points only)

2. The first paragraph (introduction) contained at least three sentence including general information about the topic and a 1-2 sentence thesis.

3. The body paragraphs begin with topic sentences which relate back to the thesis and are organized in a logical manner.

4. The body paragraphs contain sentences that develop the topic sentence with specific support and omits unrelated background information.

5. The paper contains a logical organization among the paragraphs, ends with a concluding paragraph, separate from the body paragraphs and does not just restate the thesis.

6. The body paragraphs include evidence/information from the text that has been paraphrased.

7. The paper has been written completely in the third person and does not rely on quotation (no more than a few words) **unless** to paraphrase would diminish the value of the author's meaning?

8. The paper has been edited to eliminate grammatical errors.

Rubric total: 8   *Paper Total: _____*   *Final Grade: ____*