Office of Assessment and Accreditation Grant

Data Analysis Report of the Cato COED PFS Inquiry Project

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Abstract: The purpose of this final report for the Office of Assessment and Accreditation (OAA) is to describe and report findings related to our OAA Grant, which we received in the summer of 2019. The purpose of our assessment grant was to investigate the impact of the Cato COED Prospect for Success (PFS) Inquiry Project assignment (see Appendix A) in meeting the Inquiry Project PFS rubric (see Appendix B) and student learning outcomes (SLOs) of Curiosity. In particular, we analyzed three years of PFS related program data about the inquiry project assignment. The program data included demographic statistics from quantitative reports included the Quality Enhancement Plan (QEP) reports, pre and post survey data, and data from focus group interviews. We organize the report in four sections. First, we discuss what we learned from the data analysis. Second, we describe the strengths and areas for improvement related to the student impact. Third, we describe how we will incorporate the findings into our instructional practice and delivery of the Cato COED PFS Courses. Fourth, we explain what we plan to do differently because of these findings.

Section 1: What we Learned

As part of our research grant, we examined two main research questions: (1) What is the impact of the Cato COED Inquiry Project over the last three years? and (2) How does the impact of the Cato COED Inquiry Project compare across sub-populations of the Cato COED students who have enrolled in EDUC 1100/SPED 2100?

Impact. Related to our first question about the impact of the Cato COED Inquiry Project over the last three years (see Appendix C for a statistical summary of the data findings). We report a qualitative summary of the findings below and we use bold text to highlight the themes:

1. For all three years, students have reported (i.e., survey data and the focus group interviews) the **impact of the inquiry project in building writing and research skills** to be used in other courses and as future educators. For example, for all three years, at least 72% reported feeling more confident in writing skills, 86% agreed inquiry would be useful in future courses, and 89% agreed inquiry would be useful as an educator. Overall, guiding students through the process of inquiry during their first year seems to have both quantitative and qualitative indicators of promise for developing academic and professional skills.

2. Based on survey data, the Cato COED PFS Faculty emphasis on introducing the inquiry project early as well as providing support for the writing process has had an impact on the Cato COED **students' development of transferable writing skills**. During the first year of analysis, students reported the ability of include personal interests in the project was most beneficial to the inquiry process. In the next two academic years, the most beneficial aspect

was the writing process, which increased from 23% to 30% between 2017-18 and 2018-19. The Cato COED PFS students ranked investigating sources the second most beneficial for all three years.

3. From focus group data, students seem to be **transitioning from understanding of inquiry as "research" to more of a "process"** based on students' language use. During 2016-17, students did not use "process" often to describe inquiry. By 2018-19, the Cato COED PFS students used terminology about the process of inquiry and specifically the word "process" frequently in their open-ended responses on the survey report.

4. From 2016-17 to 2017-18 there was a dip in SLO achievement (from 95%-85% student achievement of at a least a 2), but this rebounded in 2018-19 to 99%. *From a GA perspective, all courses in 2018-19 used "inquiry workshops" to facilitate the project and all courses began the project by October. The workshop model not used in the prior year, and emphasis on the inquiry project did not start as early for all courses. The additional **time and scaffolding may have contributed to students' success** during the 2018-19 school year.*

5. Across years, focus group data suggest the importance of the PFS leadership style for courses - students appreciated help from all three sources (professor, GA and preceptor). From experiencing this type of instruction, **students have reported comfort with asking for help and having a triage of people to discuss various issues related to the inquiry project.**

Impact across Sub-Populations. With the help of Elise Demeter, we also analyzed the data related to the impact of the Cato COED PFS inquiry project assignment on sub-populations of students in the Cato COED PFS. We examined the following sub-populations of students:
*   First gen (Parent did not attend college)
*   Ethnicity/Race
*   Gender (intersectionality)
*   HS GPA
*   Pell eligibility

We found no huge or concerning equity gaps among any of the sub-populations of students. In fact, from 2016-2017, the sub-populations scored statistically significant higher on the SLO 2 of the Inquiry Project. We were thrilled to see some further gains for 2017-2018 to see the improvements in the SLO Goals. In 2017-18, the sub-populations of students scored as well if not higher than the class averages. For example, the underrepresented students scored higher on the SLO 3 for the Inquiry Project then other student.

We want to continue to examine and monitor the creeping inequities, though. For example, in 2018-19, the PELL eligible students performed worse on the score for SLO 1 strategy than the non-PELL eligible students. We are monitoring these pattern in the data shifted a little bit and we begin to notice a shift as under-represented minorities scored lower on the SLO report related to the Inquiry Project. This may be an access issue, so we will continue to introduce the

Inquiry Project early in the semester and provide time in class to work on the project; including project workshop time in the Atkins Library computer labs (i.e., Atkins 125 classroom). We do not want the creeping inequities to become achievement gaps.

Section 2: Strengths and Areas of Improvement

Related to our second section, we report on the strengths and areas for improvement that connects to the impact of the Cato COED Inquiry Project over the last three years. We report the findings below and we use bold text to highlight the themes:

Strengths:
- According to QEP data, **students are successful** with the inquiry project. For all three years, students exceeded achievement goals for the inquiry SLO. The lowest achievement was 85% in 2017-18, which rebounded to 99% in 2018-19.
- Survey data suggest **the inquiry project encourages growth in students' confidence** posing inquiry questions, going through the inquiry process, analyzing data, connecting new knowledge to previous knowledge, and overall understanding of inquiry process. Between fall and spring semesters for all three years, students made growth by an average of 40 percentage points in their confidence with the inquiry process.
- Completing the inquiry project also seems to be **authentically meaningful for students**. For all three years, students agreed that centering personal interests made the process relevant to their own lives and experiences, future courses, and future careers.
- Comments from 2018-19 QEP report identify collaboration with Atkins Library, scaffolding by professors/GA/Preceptors, and the infographic poster as strengths of the project.

Areas for Improvement:
- QEP data from all three years suggest students **may struggle most with providing evidence from literature** in their projects. While still high achieving, it is the lowest scoring area of the inquiry SLO.
- From focus groups, students consistently request **more time** for the project, **more direct instruction** of expectations, and **greater scaffolding** (focus group data from 2018-19 not included).

Section 3: Incorporation of Findings

To begin this section 3, we start with a statement of affirmation. We as a Cato COED PFS team want to celebrate the fact that students are showing improvements in their Inquiry Project SLO scores across the last three years. This improvement illustrates how the work that we did in revising the Inquiry Project after the 2015-16 academic year has made an impact on the students' success related to SLO 2. That revising work included re-writing the Inquiry Project assignment to include a process model (see Figure 1 below) to help support students understanding of the process of inquiry.
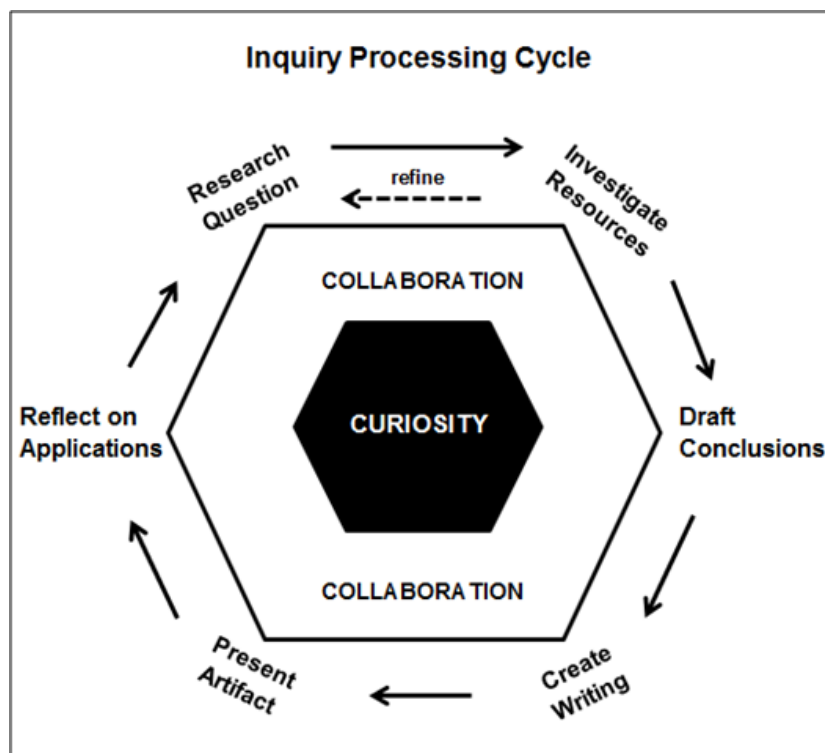
Figure 1: The Inquiry Processing Cycle

We will incorporate the findings from our OAA grant in several ways to continue and improve the impact of the Inquiry Project. Specifically, we focus our recommendation here on the pedagogical delivery of the Inquiry Project within the Cato COED PFS course continuum.

1) First, we will continue to introduce the Inquiry Project assignment early in the semester. We will also scaffold the assignment throughout the semester to provide further support for the students. This scaffolding will include support from the Cato COED PFS preceptors in helping guide the students through the inquiry project.

2) Second, we will continue with our yearlong Inquiry Project timeline. Three years ago, we made the decision to integrate the Inquiry Project across our Cato COED PFS yearlong continuum. Now the delivery and implementation of the inquiry project in the Cato COED PFS is part of the fall introductory EDUC 1100 course as well as in the spring SPED 2100 course. See Appendix D for a graphic representation of how we have constructed the Inquiry Project across the two-course sequence. We will also continue to have student explore issues of diversity and equity in schools as part of their inquiry project.

3) Third, the students asked for more direct instruction of the Inquiry Project assignment. As a Cato COED team, we will spend more time in class explaining the project assignment and provide workshop time—including workshop time in the Atkins Library— for the students to work on their inquiry projects. Part of this workshop time will focus on

developing strong research habits in order to write the literature review portion of the inquiry project. We believe such workshops will likely be beneficial for improving students' abilities to use evidence in their papers. The implementation of inquiry project workshops seemed to make the whole assignment more manageable for students during the 2018-19 school year. Professors' attention to students' drafts throughout the process also seemed to ease students' worries about the project compared to the prior year. Interweaving the inquiry project throughout the semester and class meetings seems to be a fruitful way for completing the project and illustrating inquiry as a process.

Section 4: Future Plans

We believe that we have a strong story to share with the UNC Charlotte community about effective ways to integrate the curiosity goal into assignment artifact (i.e., the Inquiry Project assignment), which has impact. We will continue to highlight these data to tell that story in our future annual reports to the university. In particular, this grant provided an opportunity to pause and reflect on the data we have collected over the last three years. In future annual reports, we will start to describe the contextual data (from the revising work we have done in the past) to also explain how the trends for the impact in the future. We can organize the reports using these larger themes:

- Where we were
- Changes we made
- Impact of those changes

As we reported in our first section, we want to continue to monitor the creeping inequities in data findings among the sub-populations of students. We acknowledge that the inequities may be related to issues of access, so we will address the issue of access by doing the following:

- Continue to introduce the Inquiry Project early in the semester and provide time in class to work on the project
- Including project workshop time in the Atkins Library computer labs (i.e., Atkins 125 classroom) under the direction of the education librarian, Abby Moore
- We will expand the inclusivity of the assignment by encouraging students to work together on their research and utilize peer learning strategies like Quickwrites, Turn and Talks, and Think-Pair-Shares
- We will continue to explore the issues of diversity and equity in schools as there are a number of topics related to diversity and equity that students are interested in. Interest drives curiosity and is the foundation for inquiry
- As mentioned earlier, we will introduce and spend more class time on the Inquiry Project assignment including utilizing models and examples of well-written and crafted sections of the inquiry project

Appendix A

EDUC 1100: Inquiry Project Assignment

Overview and Purpose: The Inquiry Project Assignment connects with PFS goal of Curiosity. Students who are active partners in their educational experience are intrinsically curious. They understand that knowledge is made rather than simply received. They also are on their way to mastering the process of inquiry by means of which knowledge is constructed.

The purpose of this assignment is to inquire about an educational related issue, research the issue, and present findings from the research. This is a two-phase assignment. One phase of the assignment is completed during EDUC 1100 and the second phase is completed during your second semester in SPED 2100.

The first phase of the assignment includes: a Research Proposal, an Executive Summary and Infographic Poster, which you will complete this semester about a topic related to diversity in education. The entire assignment helps you to master the process of inquiry. As Figure 1 illustrates, the process of inquiry is dynamic and multi-stepped.
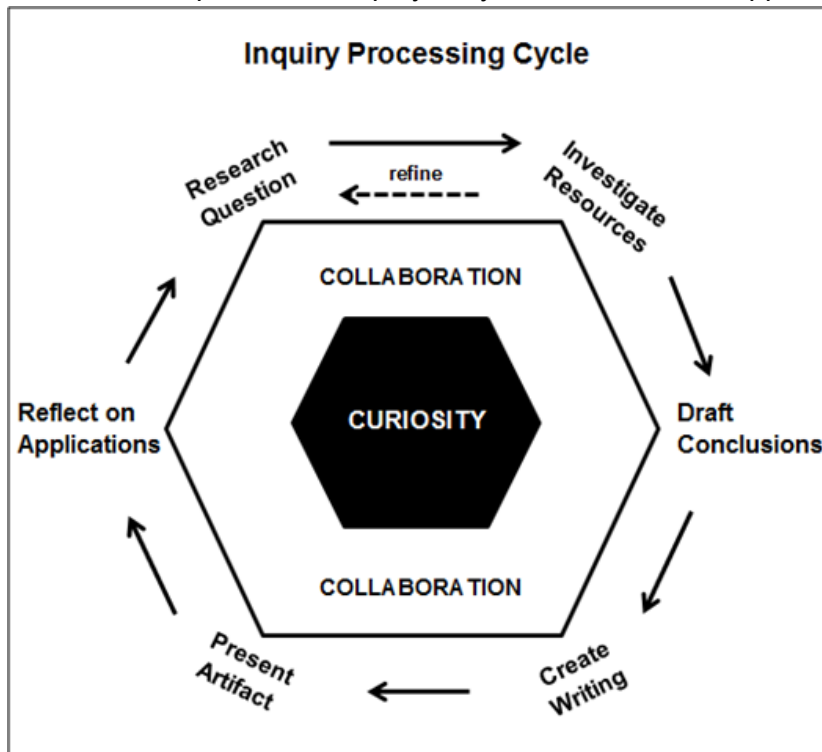

Figure 1: The Inquiry Processing Cycle

Directions: For this assignment, you will work in a small group to investigate a topic related to diversity in the field of education. We will brainstorm possible topics in class and share ideas to aid this process. Topic ideas often come from course readings, through discussion with each other and guests, from research through experiences in the clinical settings. **This assignment**

has three components: 1) a research proposal plan; 2) a written executive summary with annotated references; and 3) an infographic type presentation.

1) Research Proposal Plan: you will work in pairs or groups of three to identify and refine your inquiry question—which should be a question related to diversity in the field of education. Each team will submit a research proposal plan (see template below) where they identify their research question(s), identify resources in the Atkins Library, and explain how each team member will contribute to this project. The research proposal part is worth 5 points.

2) Executive Summary: the next part of the assignment in EDUC 1100 is a written executive summary with annotated references. Your team will write the paper together and it will be a 6-8 page paper (in a Word document, double-spaced, 1 inch margins all around, Times New Roman, 12 pt. font). A template is provided (see below) for what should be included in the Executive Summary. The summary should include: a) a title page; b) an abstract, c) statement of the problem, d) the research question(s), e) a method section that explains how you conducted the research, f) the findings of your research, and g) a discussion where you develop follow-up questions for SPED 2100 and conclude by summarizing the applications of the research to your future teaching practice. The paper page total includes an annotated references section of at least 5 academic resources. This Executive Summary is worth 25 points.

3) Infographic Poster: Each team will also create an infographic poster presentation that they will use to share their research questions and findings with the class and other invited guests/members. This part of the assignment is also worth 10 points. For this part of the assignment, the infographic should be a visual representation of the research process and findings. It should include:
   - Main research **question(s)** - you may include more questions that fall under your guiding question, but it should be clear what your main question is)
   - Visually represent **how your interest in your research question was generated by any of the course resources, classroom conversations, and/or course experience**
   - Summarize the findings of your research why this topic matters for your audience (your peers in this class & me)

Suggestions . . .

- Your question can come from multiple sources - you may **see connections between sources** that caused you to come up with your research question(s).
- *A strong research question usually begins with words like: "How," "Why," or "What happens when . . .". You don't want a question that has a simple answer or that can be answered with a 'yes' or 'no'.*

Due Dates: Check the course calendar for the due dates for each part of this assignment. For this class here are the following due dates:

1) Inquiry Project Proposal (see below)- Due on Canvas at the end of class on Wednesday, October 10

2) Written Executive Summary with Annotated References – Due on Canvas at the end of class on Wednesday, November 14

3) Infographic Presentation – Presentation on Wednesday, December 5

EDUC 1100: Inquiry Project Assignment

Part 1: Inquiry Project Proposal Form

Each team will upload and share this Inquiry Proposal Form using Google Documents. The proposal form is a draft of your team's ideas. Feedback will be provided on the proposal so that groups can finalize plans. Topics, presentation formats, and roles for your team members can be changed based on instructor feedback and team discussion up to a point.

Due Date: **See course calendar**

1) Identification of diversity in education topic(s) for Inquiry Project (your group can list a couple topics if you are still deciding, but eventually you need to narrow in on a specific topic):

_____

_____

2) Identification of Research Question(s)

a)

b)

3) Team Members

Team Member Names (first and last name)	How each team member will contribute?	Due Date

4) Resources for Inquiry Plan (research)

Your group must have at least 5 resources. Sources must include at least one book or monograph from the Atkins Library, two journal articles from education related journals and two to three other sources. Sources can also include interviews with those who have expertise or insight (UNC Charlotte faculty, teachers, etc.).

Source You need one book from Atkins, at least two research based article, and two other sources.	Annotation Description of the relevant information from this source.	How it addresses our inquiry question(s) and limitations.
1)		
2)		
3)		
4)		
5)		

Part 2: Executive Summary with Annotated References

Directions for Annotated References Activity

This assignment continues to prepare you for the successful completion of your Inquiry Project. It is important to find quality resources for your research. You need to have a minimum of 5 references for your Inquiry Projects. These references need to be cited in APA format. To help you with APA citation formatting, please use your APA Study Guide that you created in class or go to the Owl Purdue APA Citation website: https://owl.english.purdue.edu/owl/resource/560/01/

Directions: To assist with writing the Executive Summary for your Inquiry Project assignment, you will compile your references as an Annotated References section. You have already started some of this work in your Inquiry Proposal. Now you will format all your references correctly and write a longer annotation. Make sure to put them in alphabetical order by author's last name.

For this assignment, your group will compile, format, annotate, and type up your list of 5 references in a Word document that is correctly formatted in APA style. Sources must include at least one book or monograph from the Atkins Library, two journal articles from education related

journals and two to three other sources. Sources can include interviews with those who have expertise or insight.

Please save your document the following way firstnamesOfEveryoneInYourGroup_AR.doc (or docx). Upload this document in the Canvas dropbox by the due date.

Each annotation should be at least three sentences long and include: a) a summary of the reference, 2) a description of the method of research and/or important findings, and 3) an assessment of how the resource is useful for your Inquiry Project research.

Example APA citation and annotation:

Byrnes, D. A. (2005). Addressing race, ethnic group, and culture in the classroom. In D. A. Byrnes and G. Kiger (Eds.), *Common bonds: Anti-bias teaching in a diverse society*. Olney, MD: Association for Childhood Education International.

Annotation: This article includes a discussion of strategies to create multicultural and anti-bias classrooms and schools. The article shares an analysis of a case study of one teacher's experience. It found that anti-bias is most effective when it is discussed early in the school year and integrated as part of the classroom routines. We found this article was helpful and resourceful as it concludes with a detailed description of anti-bias education resources.

Due Date:

Each member of your group is responsible for contributing to this Annotated References assignment. Your group will submit one Word document saved with all your first names. See above. Each person in the group is responsible for uploading a copy of their group's Annotated References in the assignment drop box on Canvas by the due date in the course calendar.

Part 2, continued: Executive Summary Sections

Directions: Your group should have the following sections as part of your Executive Summary. It is best to set up a Google Document as you work on your Executive Summary together. Use the Executive Summary Pre-writing Organizer to help with your Executive Summary organization.

1. Title page - your title page should just include the title of your Executive Summary, each group member's name, EDUC 1100, and UNC Charlotte

2. Abstract - the abstract should be around 150 -200 words and on the second page of the paper. Use the Abstract Writing Guide to help with writing your abstract.

3. Introduction section - In the introduction of the Executive Summary explain purpose of the Executive Summary and state the "problem" or issue that you are investigating. · Finish the introduction section by identifying your research questions

4. Method section - Explain the process of research your group used to investigate the research questions. Describe how you are conducting a literature review to find out more about your diversity related topic in education.

5. Findings section - Share the answers to your research questions as larger themes. Introduce findings by rephrasing your research questions and summarize/synthesize findings of your research based on 2-3 larger themes.

6. Discussion section - Discuss the importance of the findings of your research. Identify and explain at least 2 follow-up questions to investigate in SPED 2100. Also, include a discussion of 2-3 recommendations for educators and schools related to your topic.

7. Conclusion section - Each person in your group writes a personal paragraph reflection about the Inquiry Project.   Each person in your group will conclude with a short paragraph reflection about two-three application related to this Inquiry Project. The paragraph should include a description of how you will apply the findings of this project to your role as a university student and to your future teaching practice.

8. Annotated References section -- Include your completed Annotated References at the end of the Executive Summary.

Part 3: Infographic Poster

Directions: You group will design and create an infographic poster to present to each other and to members of the Cato COED Community. Be creative! Check the course calendar for the presentation date for your posters.

Please note that for this assignment, you will need to purchase a 20"x30" (or similar size) foam core board. You can find these boards at the Dollar Tree for just a dollar.

Here is what required for you poster

● Title and group member names

● An image or image(s) (including the image source) that captures your project -- look for Free and Public Use Pictures, go to Flickr Creative Commons: https://www.flickr.com/creativecommons

● Statement of Purpose

● Research questions

● Short summary of your Method

● Summary of Findings (in bullet points)

● Summary of recommendations and the identification of (at least one) question for future research in SPED 2100

Divide the work in your groups. You will have workshop time to complete your posters. So make sure to have all your information compiled and printed so that you can finish the poster design. Again, be creative with your infographic poster!

Due Date: Check the course calendar for the presentation date for your infographic poster. Poster and presentation are worth 10 points.

Appendix B

PFS Rubric for SLO Goal 2: Curiosity

Cato COED Assignment: Inquiry Project

Student Learning Outcome SLO: **Students understand or experience inquiry as an open-ended process that explores evidence and/or approaches to generate ideas / conclusions.** Students who are active partners in the educational experience are intrinsically curious. They understand that knowledge is made rather than simply received. They also are on their way to mastering the process of inquiry by means of which knowledge is constructed.

Rubric

Inquiry				
Dimension	0	1	2	3
Exploratory Process	No evidence	Discussion and/or results indicate that the focus of inquiry was static and narrowly focused Limited understanding of the open-ended exploratory process	Discussion and/or results indicate that the focus of inquiry evolved to some degree Some understanding of the open-ended exploratory process	Discussion and/or results indicate that the focus of inquiry evolved Clear understanding of the open-ended exploratory process
Evidence / Approaches	No evidence	The inquiry project displays limited exploration of appropriate evidence, approaches, and information	The inquiry project displays some exploration of appropriate evidence, approaches, and information	The inquiry project displays clear exploration of appropriate evidence, approaches, and information
Ideas / Conclusions	No evidence	The inquiry project displays limited articulation of student's own ideas / conclusions in relation to information explored	The inquiry project displays some articulation of student's own ideas / conclusions in relation to information explored	The inquiry project displays clear articulation of student's own ideas / conclusions in relation to information explored

Appendix C: Data Findings related to Cato COED Inquiry Project

2016-17
- **QEP Data:** Average of final averages among classes: 2.64, 2.10, 2.77, 2.38.
- **QEP Report:** 96% achievement (2 or better) for Exploratory Process Goal; 90% for Evidence/Approaches; 97% for Ideas/Conclusions; 95% of students achieved overall 2 or better for inquiry SLO → 69 students met benchmark while 4 didn't. No changes were made from 2016-2017 because benchmark goal was surpassed.
- **Survey Data Report:**
  - Inquiry words: "research," "question," "personal interest"
  - 92% moderately to extremely confident posing inquiry questions (up from 54% in Fall 2016)
  - 90% moderately to extremely confident going through inquiry phases (up from 69% in Fall 2016)
  - 92% moderately to extremely confident collecting, analyzing and synthesizing data (up from 73% in Fall 2016)
  - 99% moderately to extremely confident connecting new knowledge to previous knowledge (up from 85% in Fall 2016)
  - 93% agree or strongly agree they have strong understanding of inquiry process (up from 48% in Fall 2016)
  - 94% agree inquiry will be useful in future courses
  - 89% agree inquiry will be useful as an educator
  - 75% more confident in writing skills
  - Using personal interest (20%), refining research questions (19%), and investigating sources (19%) most beneficial to understanding inquiry process
- **Focus Group Themes:**
  - Importance of scaffolded help from professors, GAs, and preceptors
  - Meaningful experience with transferable skills (writing, research, collaboration, asking for help)
  - Significance of personal investment in topic
  - Recommendations: more scaffolding, more precise expectations, more time, more overt connections to SPED inquiry

2017-18
- **QEP Data:** Average of final averages among classes: 2.60, 2.51, 2.68, 2.81
- **QEP Report**: 94% achievement (2 or better) for Exploratory Process Goal; 82% for Evidence/Approaches; 94% for Ideas/Conclusions; 85% of students achieved overall 2

or better for inquiry SLO → 55 students met benchmark while 10 didn't. No changes were made from 2017-2018 because benchmark goal was surpassed.

- **Survey Data Report:**
  - Inquiry words: "research," "question," "curiosity"
  - 97% moderately to extremely confident posing inquiry questions (up from 65% in Fall 2017)
  - 97% moderately to extremely confident going through inquiry phases (up from 71% in Fall 2017)
  - 100% moderately to extremely confident collecting, analyzing and synthesizing data (up from 89% in Fall 2017)
  - 100% moderately to extremely confident connecting new knowledge to previous knowledge (up from 86% in Fall 2017)
  - 89% agree or strongly agree they have strong understanding of inquiry process (up from 51% in Fall 2017)
  - 86% agree inquiry will be useful in future courses
  - 89% agree inquiry will be useful as an educator
  - 78% more confident in writing skills
  - The writing process (23%), investigating sources (17%), and centering inquiry around personal interest (17%) most beneficial to understanding inquiry process
- **Focus Group Themes:**
  - Significance of picking their own topics
  - Usefulness of developing writing and research skills and transferring these skills to other courses and as future educators
  - Articulated inquiry as a process
  - Recommendations: more time, more direct instruction for project,

<u>2018-19</u>
- **QEP Data:** Average of final averages among classes: 2.92, 2.97, 2.74
- **QEP Report:** 100% achievement (2 or better) for Exploratory Process Goal; 98% for Evidence/Approaches; 98% for Ideas/Conclusions; 99% of students achieved overall 2 or better for inquiry SLO → 75 students met benchmark while 1 didn't. Comments in report discuss importance of help from Atkins Library, scaffolding from professors/GA/Preceptors, and infographic posters.
- **Survey Data Report:**
  - Inquiry words: "paper," "question," "research"

- 93% moderately to extremely confident posing inquiry questions (up from 63% in Fall 2018)
- 97% moderately to extremely confident going through inquiry phases (up from 70% in Fall 2018)
- 94% moderately to extremely confident collecting, analyzing and synthesizing data (up from 84% in Fall 2018)
- 92% moderately to extremely confident connecting new knowledge to previous knowledge (up from 82% in Fall 2018)
- 89% agree or strongly agree they have strong understanding of inquiry process (up from 51% in Fall 2018)
- 91% agree inquiry will be useful in future courses
- 91% agree inquiry will be useful as an educator
- 72% more confident in writing skills
- The writing process (30%), investigating sources (18%), centering inquiry around personal interest (11%), and collaboration (11%) most beneficial to understanding inquiry process

Appendix D