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## FOSTERING A RESEARCH IDENTITY ACROSS A SMALL LIBERAL ART COLLEGE



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### **Fostering a Research Identity across a Small Liberal Art College**

#### **Synopsis:**

This paper will explore strategies developed and implemented on the campus of a private, historically Black liberal arts college for women, to increase student interest, engagement and academic achievement through the facilitation of research-based collaborations across the disciplines on campus. This included approaches involving faculty development, curricular enhancement and other on-campus partnerships that affect student engagement.

Fostering a Research Identity across a Small Liberal Art College

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### Abstract

Liberal arts colleges are known for developing independent critical thinkers. While some liberal art colleges do not have graduate studies, most participate in various forms of research. Nevertheless, students outside of the STEM disciplines may not view the connection between their field, research skills and the workforce. This paper will explore strategies developed and implemented on the campus of Bennett College, a private, historically Black liberal arts college for women, to increase student interest, engagement and academic achievement through the facilitation of research-based collaborations across the disciplines on campus. This included approaches involving faculty development, curricular enhancement and other on-campus partnerships that affect student engagement. The overall goal was to increase the understanding and importance of research within the students across our small liberal arts college with a limited budget and few laboratory spaces. The outcomes suggest that a research identity within students can be fostered by using interdisciplinary approaches and collaborative efforts across the campus which in turn may positively affect retention and academic success. This information may also prove successful at other small liberal arts colleges similar to Bennett College.

*Keywords:* Research Identity, Liberal Arts, Student Engagement

### Fostering a Research Identity across a Small Liberal Art College

Liberal arts colleges hold a special and often unique place within the academy. Known for their small class sizes and low student to faculty ratios, these campuses create comfortable environments where students are individuals and not just numbers. The course curriculum often includes a breadth of disciplines from the arts, sciences and humanities. Liberal arts education students have reported gains in personal development, including the growth of self-confidence, independence of work and thought, and a sense of accomplishment (Lopatto, 2006).

Among their most impressive outcomes, liberal arts college graduates are more likely to pursue postgraduate studies. Among science, technology, engineering and mathematics (STEM) majors, 57 percent of smaller-private-college graduates apply to graduate school, whereas only 40 percent of regional public university graduates apply (Williams, 2015).

Social identity theory suggests that people have an inbuilt tendency to categorize themselves into one or more groups which builds a part of their identity on the basis of membership in that group and enforcement of boundaries between other groups (Tajfel & Turner, 2004). Different contexts may elicit various aspects of self in a student. This shared sense of group membership can be used to explain intergroup behavior and the concept of a science identity.

Brickhouse, Lowery and Schultz (2000) first introduced the idea of a science identity over fifteen years ago. They observed that students who included an interest in science as part of their sense of self were more comfortable and successful learning science. Over the years, the concept of a science identity has developed in many directions, all relating back to students' perception of science and how it relates to them as individuals. Carlone and Johnson (2007) developed a socially constructed model of science identity which includes the dimensions of

competence (knowledge and understanding of science content), performance (social performances of relevant scientific practices) and recognition (recognizing oneself and getting recognized by others as a “science person”). These dimensions overlap and can vary by individual. Their model provides a comprehensive science identity which moves beyond “knowing science”. A positive connection to science identity has led to increased persistence in science education (Carlone & Johnson, 2007; Hurtado, Cabrera, Lin, Arellano & Espinosa, 2009).

The benefits of having a science identity have been shown, with some even focusing on individual science discipline identities (Hazari, Sadler & Sonnert, 2013). However, the literature does not discuss a universal intellectual identity that addresses the uniqueness of the scholarly process. Scholarly inquiry is an ability that moves beyond critical thinking skills. Across disciplines, attempts to develop students’ critical thinking skills have emphasized the evaluative judgement process, but less attention has focused on how students learn to conduct the systematic investigation that must follow the creative thinking. The necessity of systematic investigation is commonly accepted in the sciences, but the connection is often not clear to students outside of STEM fields. This is of particular importance at liberal arts colleges where the goal is to develop a well-rounded student with global knowledge and understanding. We use the term *research identity* to describe the student’s perception of self as a scholar of inquiry. Once the concept of being a researcher is made personally relevant to the student, a unification of self can occur.

Research identity is different from science identity by moving the focus beyond “knowing or doing science” to systematic investigation. This idea also moves beyond the belief in self-efficacy to having the student actually engage in the scholarship, past belief in their ability

to demonstration of it. In the previously stated model, competence is understood to be crucial, but a student may earn a high letter grade by having a conceptual competence but without real application of the subject matter. Will the student be able to move from the textbook to the real world? Research identity also incorporates the aspects of the science identity model of social performance and recognition, but from the perspective of student as investigator.

The National Academy (2004) describes interdisciplinary research as a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice. Within the academy, government and industry, new ideas and concepts are being developed through the integration of disciplines. The arts, sciences and humanities are working together to examine and solve the problems of our society. The growth of interdisciplinary research underpins the importance of fostering a research identity instead of a science identity, especially at liberal arts colleges. All fields of study conduct some form of systematic investigation that leads to greater understanding of knowledge, and these inquiries become intertwined and sharpened by the incorporations of different fields of study.

Students from disciplines outside of STEM may not view the importance of research or its connection to their majors and future careers. Changing the student perception of academic research may result in more extensive participation in their academic careers, which can lead to increased retention and academic success. Studies have shown that undergraduate research opportunities are able to increase student interest in the sciences and graduate education as a whole (Russell, Hancock & McCullough, 2007). However, not every student may have the opportunity for an undergraduate summer research experience. Liberal arts colleges tend to have

a small number of laboratory spaces in addition to faculty with heavy teaching loads who may not be able to work independently with students in said spaces. Furthermore, funding is needed to maintain laboratories and conduct large scale experiments. Fostering a research identity across the campus can allow for meaningful research experiences to be incorporated into various aspects of the campus culture from the classroom, service learning and collaborative programing. This can be cost effective and a time saver by reaching a larger number of students than just those enrolled in STEM majors.

One of only two historically Black colleges for women in the country, Bennett College is a small private liberal arts college with an enrollment of approximately 680 students. The College recognizes that the educational experience is enriched when multiple voices are represented, heard and operate in an interdisciplinary, learning-centered environment where open inquiry will foster research and create knowledge. Bennett College also recognizes that to remain competitive in an ever-changing technologically-based, global society, the US must have an adequate and qualified workforce with skills in critical thinking and research.

The goal of this paper is to share knowledge about methods and strategies used to increase the research identity of students across disciplines at a small liberal arts campus. Our approach was to create several strategies that could foster the idea of a research identity in our students. The following were the guiding questions for the methods and strategies we utilized:

- How can the importance of research be integrated into the college student experience during the academic year without additional funding or laboratory spaces?
- What role does faculty play in the development of the students' research identity beyond individual faculty-student mentor relationships?



**METHODOLOGY**

The Faculty and Staff Institute was the stimulus for our methodologies used to instill a research identity within our students that focused on faculty development, curricular enhancement and student engagement. This work is important and contributes to the body of literature by piloting techniques that faculty can use to result in students developing a research identity that may move beyond self-efficacy towards utilization of academic ability. This would include the development of an interdisciplinary perspective which is a skill needed in the workforce for critical thinking and problem solving abilities.

At the beginning of each semester, the College has an annual Faculty and Staff Institute. This is a mandatory event where the state of the college is addressed along with various concerns and directions for the college each year, all facilitated by current faculty and staff members of the institution. Outside funding was awarded to allow the implementation of novel strategies for improving the campus climate. This permitted the selection of outside consultants to facilitate portions of the workshop sessions. The consultants were selected from similar liberal arts colleges who had successfully implemented and maintained the ideas that had only been discussed on our campus. The purpose was to learn strategies for incorporating research within the classroom, given that our campus is primarily teaching focused with a limited budget for research expansions. This also included a workshop on available grant opportunities for liberal arts colleges. As part of these endeavors, sessions were organized that focused on evidence based strategies on teaching effectiveness, evaluation and assessment through curriculum mapping and grant writing.

In order to foster a research identity across the campus, various techniques were implemented, including workshops, classes in conjunction with collaborative funding initiatives on campus, and efforts within the community to engage research and creative projects.

## **RESULTS**

The sessions at the Faculty and Staff Institute stimulated an increase in grants that were funded by faculty and facilitated collaborative efforts across campus disciplines. Not only were the sessions informative, but they also allowed for networking with colleagues. Even though our campus is small, we often do not communicate our different research interests. One of the changes that followed the Faculty and Staff Institute was an increase in the percentage of grants awarded to the College in instruction and research. In fiscal year 2012, 20% of grants awarded to the College were for instruction and no grants were awarded in research. During fiscal year 2013, before the Faculty and Staff Institute, 4% of grants awarded were for instruction and research. After the Faculty and Staff Institute, during fiscal year 2014 the percentage of awards for instruction and research increased to 15%, which is a 375% percentage increase from the previous year. As a result of the Faculty and Staff Institute, the increase in the number of grants awarded in research may be indicative of realigning the College back to its mission of advancing scholarship and fostering authentic research.

Another important outcome of the Faculty and Staff Institute was the revitalization of the Brown Bag Lecture Series. The sessions led by outside consultants helped facilitate much needed interdisciplinary dialogues which continued after the Institute. There were a total of three Brown Bag lectures for the Spring 2015 semester that were co-facilitated by at least two faculty members from different departments on campus.

## **Curricular Enhancements**

One of the outcomes of the Faculty and Staff Institute and Brown Bag lecture series was development of more interdisciplinary, research integrated courses and activities. The Honors Program at Bennett College was enlivened to increase the academic rigor and interdisciplinary connections within the courses. The students were encouraged to push their current levels of critical thinking through the production of scholarly works or publications. The program also provided intellectual excursions to engage students in and out of the classroom. Through conversations initiated from the Faculty and Staff Institute, two professors from psychology and women's studies created a new Honors course, *The Politics of Beauty, Shame and Desire*. This was an interdisciplinary course which included topics from psychology, sociology, political science and women's studies. Funding for intellectual excursions were made possible by partnering with existing programs and collecting small amounts of monies from multiple departments based on the interdisciplinary make-up of the students in the course.

The Honors course contained additional research components beyond the traditional final paper and presentation. Students had to keep a “notebook” of novel words, concepts, research questions etc. sparked by the readings and intellectual excursions. In addition to the weekly reflection papers, students had to post a media link using the campus learning management system in order to draw a connection to the “real world” and academic prose we studied.

In addition, a Journalism and Media Studies professor developed a Special Topics elective concerning the translation of technical writing for lay person consumption. *Communicating Science* was drawn from a conversation with a Psychology professor on how to convey the scientific nature of mental health through accessible sources for the general public. This course was opened to all students. For those who participated, it improved their media

literacy and writing ability through blogging and social media as ways to teach students how to disseminate and present research including and beyond academic conferences.

In order to help students connect the applied nature of psychology and the importance of research, a Library Scavenger Hunt was created for the General Psychology course. This course serves as a general education requirement, with the majority of students, campus wide having to complete it during their first two years of college. The purpose of the Library Scavenger Hunt was to acclimate students to resources in the library as the first step to the development of the final research paper. This is the initial step in students understanding the systematic and investigative nature of research by being exposed to resources, search engines, interlibrary loan programs and other sources that can be used to seek facts and determine conclusions. This enhancement was at no financial cost and only involved a few faculty and library staff for a significant impact on campus.

### **Student Engagement**

The Interdisciplinary Research Day (IRD) is an annual campus-wide event where students are given a platform to present their scholarly work either through oral or poster presentations. The students go through a formal process of submission of their abstracts which are reviewed by faculty and in return the students receive constructive feedback. The IRD committee consisted of campus-wide faculty representing the arts, sciences and humanities.

One small change that had compelling impact was to add a student representative to the committee. This student from the Journalism and Media Studies department was able to revamp the IRD logo and increase publicity which in turn increased attendance. This resulted in a steady number of student presenters in 2014 and 2015. We experienced an increase in faculty and student attendance. At IRD 2014, there were a total of 114 people as participants and audience

members. The total number increased at IRD 2015 to 194 which is a 58% increase from the previous year. The student representative played an integral role in conducting the research needed to create a new logo for IRD which was placed on publicity announcements including promotion through social media outlets and videography allowing more students to explore the event.

Another strategy used to facilitate student research and inquiry is through the collaboration of various departments with the surrounding community. Greensboro, NC is the headquarters of Biscuitville, a local restaurant chain specializing in southern cuisine, who invites the surrounding colleges to participate in a week-long series of events on entrepreneurial education and research. The Biscuitville Entrepreneurial Series concluded with a 5K relay race whose entry fee was sponsored by our Entrepreneurial Studies department. This allowed faculty and students to interact with each other outside campus in a non-academic environment. To engage students and foster a research identity, members of the STEM faculty at Bennett College banded together, to form a relay team for the Biscuitville 5K called “STEM docs”. This was a strategy to strengthen the student/faculty interaction outside campus in a non-academic setting and facilitate conversations across disciplines that would not normally occur.

Bennett College participated with two teams of representation: one faculty team of 4 and one student team of 3. The second year of participation resulted in an approximately 3.66 fold increase in student participation to 11 students from a wider selection of majors and a 1.5 fold increase in faculty participation to 6 faculty and staff members. The following are quotes from two students on their experiences: “It was fun to see professors who are usually very serious and professional have some fun and get messy in the process” another student stated, “I will

definitely encourage everyone to participate next year. Not only was the experience fun, but it was also a great way to network with other students and have fun with fellow classmates.”

## **DISCUSSION**

Before the implementation of these strategies and methods, few research grants were being submitted and limited collaboration amongst faculty was taking place on campus. Outside funding played an integral role inviting consultants for our Faculty and Staff Institute. This endeavor helped to break down the “silos” on our campus to foster discussion and collaboration.

The subsequent increase in faculty submission of grants in research after the Faculty and Staff Institute led to the revitalization of faculty interest in engaging in scholarly research. Additionally, with the institution’s mission of operating in an interdisciplinary environment where open inquiry will foster research, most of the grants submitted by faculty were in collaboration with faculty in other departments or with other institutions. This collaborative spirit of faculty from different departments, talking and working with each other, will help to broaden the participation in research through the incorporation of different viewpoints to solve our world’s complex problems. It relates directly to fostering a research identity with our students. The faculty began to lead more by example. Many students do not realize that liberal arts professors conduct experiments, own businesses, act as consultants etc., in the vein of their research and area of expertise. Being able to interact with the faculty informally and formally, brought that research identity to the forefront.

We were able to reinstate our Brown Bag Lecture Series that allowed us to share and exchange ideas without spending additional monies. These presentations and conversations during the Brown Bag Lectures and the Faculty and Staff Institute led to curricular enhancement and student engagement. The development of the *Communicating Science* course is a prime

example of how informal conversations between faculty from different departments can make small but impactful changes that influence the students.

An especially interesting aspect of our study was the support for the recognition component of the previously mentioned science identity model. During IRD, students became more supportive of their peers by attending their presentations. This led to conversations between the students about work being conducted that others were unaware of. Recognition became an important factor in our students perceiving themselves as researchers and this was shown through the disciplines represented. The IRD 2015 winner was a Business major with a minor in Entrepreneurial Studies.

Not only is Bennett College a small liberal arts college but also serves as one of the two historically Black colleges and universities (HBCUs) for women in the nation. This is an important factor as HBCUs are known for having large percentages of female students and providing nurturing environments. Future directions would involve exploring intersectionality and how it relates women of color to a research identity, as this concept transcends HBCU culture.

## **CONCLUSIONS**

As liberal arts colleges continue to thrive in a time of increased visibility of STEM fields, we must return to the basis of the academy, scholarly inquiry. Fostering a research identity within our students incorporates the importance of being able to ask the right questions that will lead to creative solutions. A liberal arts education includes diverse subject matter that naturally allows one to “think outside of the box”.

In doing so, a revitalization of our faculty occurred as research collaborations became possible and manageable. Studies have shown that students at more selective institutions

typically have less frequent, less personal interactions with faculty whereas Black students at HBCUs report having more support and frequent interactions with faculty (Hurtado, Eagan, Tran, Newman, Chang, & Velasco, 2011). This again adds to our concept of research identity by building a rapport similar to a faculty mentor relationship without the laboratory setting. This paper starts the discussion on moving beyond discipline-specific identity and developing a research identity based on systematic investigation as a part of the student's perception of themselves as an academic. We included various methods and strategies that have been successful at Bennett College through limited funding and collaborations.

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