Re-Envisioning the National Park Experience: 
A Case Study on University Based Transdisciplinary Design Teams 
Increasing Access and Stewardship by the Next Generation of Visitors.

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ABSTRACT

The National Park Service (NPS) is experiencing overcrowding and excessive use in their major National Parks like Acadia, Yosemite and the Grand Canyon, diversification of the U.S. population demographic, increasing numbers of “baby boomer” retired attendees and a drop off in park participation by 18 to 30 year olds. The NPS is beginning to address these issues through the “2016 Centennial Campaign” that provides funding for “Centennial Challenge” projects and programs to secure the parks’ legacies for the next hundred years. A main focus of the “Challenge” is to increase attendance and volunteerism in the lesser known and underutilized parks, landmarks, buildings, and monuments that make up a majority of the NPS’s resources.

In Spring, 2008 the Savannah College of Art and Design (SCAD) created a two-phased pilot project in partnership with the Fort Pulaski National Monument, Cockspur Island, GA to develop strategies to attract and convey the context of the Fort to the 18-30 year old demographic who are under-represented in current attendance statistics. It was hypothesized that providing a variety of transdisciplinary educational opportunities to this demographic, via student-directed research and design projects, would lead to increased awareness and stewardship relationships between this age group and the NPS. At the same time the NPS would receive a “re-envisioning” of the interpretation of the National Park experience by the very demographic that they are trying to reach.

This pilot project was conducted in two phases: 1) an initial ethnographic inquiry and cultural probes; and 2) a ten week transdisciplinary design collaborative partnership seminar. The poster discusses the findings resulting from students’ self administered pre and post project surveys as well as from surveys conducted with NPS staff at Fort Pulaski throughout the process.

The poster presents the research recommendations and designs from the pilot project with a brief introduction to the Fort Pulaski Long Range Interpretive Plan and the NPS Centennial Challenge. The primary goal of this pilot project was to evaluate the university based transdisciplinary team model by engaging the “Gen Y” demographic with the NPS. In addition a secondary goal of the transdisciplinary collaborative partnership model was to look at its application and translation to other university partnerships with various NPS site. And finally the students' engagement with the Fort Pulaski National Monument, through this project, will foster a long-term sense of stewardship for the National Parks by the project participants.
PROJECT HISTORY

In February of 2008 students in INDS 102, Form Space and Order class, were assigned a final project to create an exhibit space for the Fort Pulaski National Monument on Cockspur Island, Georgia that reflected a historical event, person or an organization associated with the Fort. Fort Pulaski, located approximately fifteen miles from downtown historic Savannah, Georgia, was established as a National Monument by President Calvin Coolidge in 1924 and in 1958 was expanded to include almost 6000 acres. It is notable as one of the best-preserved examples of “third system” masonry fortification in America. One student’s research led to an investigation of the National Park Service’s 1916 - 2016 Centennial Initiative:

“The National Park Service Centennial Initiative is a ten year effort to prepare national parks for another century of conservation, preservation and enjoyment by the agency’s 100th anniversary in 2016. The enduring legacy of the National Park Service Centennial Initiative will be to engage new generations of Americans in the values of their national parks and ensure their care for a second century.” National Park Service Centennial Challenge

The student’s research topic prompts many larger questions: How do college and university students engage in the National Park System? How could college and university students increase awareness and participation in the National Park Service? In what way would college and university based transdisciplinary teams address the issues of leadership and stewardship?

In March 2008, Savannah College of Art and Design approached Fort Pulaski Superintendent, Charlie Fenwick, to participate in a critique of exhibit spaces designed as a final project for the spring quarter of INDS 201, Form Space and Order. From this conversation, Charlie introduced the 2006 Fort Pulaski National Monument Long Range Interpretive Plan (Fort Pulaski LRIP). The Fort Pulaski LRIP analyzes the park’s need to modify, create and implement interpretive exhibits and installations that will enhance the visitor’s experience and connection to the park’s history and natural surroundings. Currently, Fort Pulaski has $250,000 budgeted for 2008-2009 to implement this plan.

Fort Pulaski Long Range Interpretive Plan Project Needs

As part of the Fort Pulaski LRIP they identified the Savannah College of Art and Design as a partner, building on a past relationship of historic preservation. Superintendent Fenwick explained that SCAD could fill the needs for a finer assessment of the Fort Pulaski LRIP, visitor demographic interpretation, historical research and restoration, archeological survey, exhibit design and fabrication, and environmental restoration. Implementation has begun for some projects for the Fort Pulaski LRIP, and they hope to realize the “most significant” themes in the next couple of years. In response to these needs Dr. Christine Miller,PhD., students from Methods of Contextual Research class and I met with Superintendent Fenwick and his staff to begin the assessment of the Fort Pulaski LRIP. We discussed a transdisciplinary team approach for addressing Fort Pulaski’s goals.
TRANSDISCIPLINARY TEAMS

This paper introduces the use of a transdisciplinary team approach in assisting Fort Pulaski in realizing the potential of the Fort Pulaski Long Range Interpretive Plan. A transdisciplinary approach differs from a multidisciplinary approach in that it tends to look at problem solving and knowledge across and between disciplines to realize the intricate complexities of an issue rather than a root discipline seeking knowledge or experience from other disciplines only to serve the knowledge base of the root discipline (Mc Gregor, 2004).

Burnett (2009) discusses how the transdisciplinary process has typically been rooted in the science and technology fields and that some of the difficulties lie in the specialization of the physical and social sciences. He does see a natural model for a transdisciplinarity approach in the fields of art and design.

“It goes without saying that most art is produced through a process that is both intuitive and research oriented and that combines a holistic view with a profound understanding of the intersections of theory and practice.”

But this begs the question: Are art and design colleges better equipped for executing the transdisciplinary process than traditional academic institutions? Art and design colleges have also followed the trend in specialization in order for students to meet the demands required by business to create and design via computer generated graphic and modeling programs and rapid prototyping. The Savannah College of Art and Design is divided into 5 schools and 42 distinct degrees.

Pilot Project Phase I
Ethnographic Research

Phase 1 of this project was executed during the Spring 2008 quarter by the Methods of Contextual Research class conducted by Dr. Christine Miller, PhD. In this class 31 participants between the ages of 20 to 25 years old with a majority of international students responding, were selected from the Savannah College of Art and Design student body. They explored two areas: how diverse cultures view history and what are the attached meanings or attitudes towards history? Participants completed a survey that looked at three measures: first general attitudes toward history; secondly, an analysis of negative feelings about history, and lastly, what makes history interesting.
Attitudes Toward History

Neutral Response 46%
Negative Response 18%
Positive Response 36%

Analysis: Negative Feelings About History

War and Bloodshed 27%
Boring 27%
Lies 20%
Historic Icons 13%
Repetative Nature 6%
No Opinion 7%
What Makes History Interesting?

Respondents also completed a self directed workbook that they took with them to Fort Pulaski National Monument. The findings from the workbook concluded that most participants viewed history in a neutral manner and that the negative attitudes were most profound in the recalling of historical events like wars and historical icons related to war.

Students visited the site without an interpreter and found it difficult to understand the context of the park. It was difficult for them to see a connection between the American Civil War and the costal wetland scenery surrounding the fort. The study concluded that there was a gap between historical significance and cultural understanding.

Based on the analysis of the surveys and workbooks, students from the Methods of Contextual Research class proposed to Fort Pulaski a number of ideas that emphasized the most highly rated interests in the third survey, “What makes history interesting.” They concluded that the Fort should increase opportunities around storytelling, time, human involvement, art and experience through 4-d theater, carnivals and festivals, sculpture or art installation exhibits, fashion shows, using different languages in promotional materials, recreational and fitness opportunities to increase visitor engagement and satisfaction. Collaboration with private and academic institutions and independent scholars would assist developing themes and narratives. The conclusion of the ethnographic research led to the creation of a collaborative partnership between Fort Pulaski and the Savannah College of Art and Design.
Phase II
Collaborative Partnerships

Collaborative Partnerships: Re-envisioning the National Park Experience is the first studio offered of its kind at the Savannah College of Art and Design: it applied both a transdisciplinary opportunity and a “real world” project. Working in collaboration with John Lowe, Dean of Communication Arts, Joel Whittkamp, Professor of Industrial Design, Dr. Christine Miller, PhD Professor of Design Management and Kathleen Fritz, Professor of Interior Design we identified twelve disciplines from three schools at the Savannah College of Art and Design: Design Management, Advertising, Furniture, Illustration, Graphic Design, Interior and Industrial Design, Architecture, Historic Preservation, Sequential Arts, Fibers and Photography. The students addressed the complex issue of re-envisioning of the National Park experience for a wider audience by designing four interpretive exhibits to be installed in the existing visitor center.

The goals of the transdisciplinary team were threefold:

Goal 1: To create a venue where SCAD students and faculty from various disciplines can engage each other in learning, problem-solving, and implementation process around complex social and community issues.

Goal 2: To work with Fort Pulaski’s staff to assess, research, design and implement the Fort Pulaski Long Range Interpretive Plan.

Goal 3: To demonstrate, to the National Park Service, how the use of university/college based transdisciplinary teams will assist in accomplishing the goals set out by the National Park Service Centennial Challenge “to improve parks and serve all Americans, especially our nation’s youth” (NPS 2008).

The class consisted of 21 students who were either seniors or graduate students. The studio met formally 2 ½ hours twice a week for brainstorming and mind-mapping exercises which explored major themes about history, community connection, recreation, education, narrative, and preservation. Weekly work sessions were held outside of class to review concepts and progress on presentations. Out of class meetings were student driven with professors acting as consultants.

The first assignment, which was accomplished by week 3 of the ten week quarter, divided the class into two groups to conduct research of the Fort Pulaski site. Each group developed a re-envisioning plan for Fort Pulaski visitors. Students participated in a 2 hour orientation session at the site and was provided with the National Register Bulletin “Telling the Stories: Planning Effective Interpretive Programs for Properties Listed in the National Register of Historic Places” as a reference point. This first exercise allowed students to become familiar with the site as well as offer long range ideas to the park that could be incorporated in the future as budgets allowed.

Students were provided the exhibit “wish list” from Fort Pulaski staff members who had been working with an interpretive planner over the summer of 2008:
“A. Introductory Panel. Free standing vertical panel, approximately 4' x 8'. Panel to feature one large B&W graphic (digital image provided by FOPU). Brick rubble reproduced at the base of the graphic. Text incorporated on graphic (text provided by FOPU). Panel housed within wooden frame, including elaborate moldings, etc. We will need the students to design exhibit + develop drawings (floor mount will probably be required).

B. Time Line Panel. Approximately 16' x 6.' Two dimensional with text and approximately 15 images. FOPU to assist with providing text and images. Students to design exhibit + develop drawings (to be secured to wall).

C. Artillery Island Exhibit. Free standing approximately 15' x 5.' To include two full scale replica cannons (made of wood or fiberglass, showing cutaway interior view comparisons of a 30-Pounder Parrott rifled cannon & 8-inch Columbiad smoothbore). Visitors will be able to move a projectile up & down the length of the barrels. Exhibit will include two original projectiles (FOPU to provide) + approximately four interpretive panels (FOPU to provide text) + approximately four graphics (FOPU to assist with providing images). Students to design exhibit + develop drawings.

If there are funds remaining, or if additional funds can be obtained in Fiscal Year 09, then FOPU would like to have these three additional exhibits:

D. Breach Exhibit. Three dimensional exhibit, extending from wall of Visitor Center, approximately 8' tall and extending outward 8.5' x 4.5' x 4.5.' Would include reproduction brickwork (recreating a section of Fort Pulaski's exterior), rubble, and projectiles (8" smoothbore + James rifled projectile). Students to design exhibit + develop drawings.

E. Photo Exhibit Wall. Two dimensional wall exhibit, approximately 16' x 6.' Focus will be on enlarged images showing battle damage to the fort. Few (or no) text panels are anticipated. FOPU to assist with providing images. Students to design exhibit + develop drawings.

F. Trajectory Exhibit. Two dimensional wall exhibit, approximately 12' x 4.' Artist illustration showing various ranges and types of cannons used during the bombardment. Students to design exhibit + develop drawings + develop artwork (to be secured to wall).”

Email from Charlie Fenwick, Superintendent Fort Pulaski, September 11, 2009

PowerPoint presentations were made by each team to the Fort Pulaski Staff. From this presentation Fort Pulaski requested that additional exhibit features be incorporated into the three design proposals that would be presented at the next meeting. This included the addition of interactive video displays, character narratives, prioritizing the “Breach Exhibit” as the
“Introductory Panel”, the merging of the “Timeline and Photo Exhibit Wall” and the development of the “Artillery Island Exhibit.”

Students divided into three work groups. Each work group was responsible for developing three schemes for exhibiting the following information by the end of week six: group 1) Sculptural; group 2) Modular; group 3) Historical. Each group began with brainstorming sessions with one of three professors to discuss a comprehensive way to address the needs of Fort Pulaski while maintaining the focus on widening the park audience and reinforcing repeat visitors. They presented PowerPoint presentation, models and design proposal books to the staff at Fort Pulaski and to the National Park Service fabricators from Harper’s Ferry. From this review the final exhibits were selected for design development and construction documentation.

During the construction documentation phase students were spit up into smaller work teams to develop construction documentation for one of five specific exhibits: Breach Entry; Fort History and Interactive Battle Display; Modular Time Line; Cannon Artillery Exhibit and Character Narratives. Due to the nature of producing construction documentation the teams were led by students who had expertise using specific drafting and graphic programs and worked with other team members who were tasked with gathering information, final layout of the documentation and editing. Many students would cross over from team to team to coordinate locations, graphic usage and sequencing of projects in the final document. The final construction documentation set was presented to Acting Superintendent, Randy Wester and Ranger Mike Weinstein at Savannah College of Art and Design on the last day of class.

**Tools for Collaboration**

This pilot project was a first for the Savannah College of Art and Design (SCAD) and the current academic infrastructure was not equipped to run a cross-listed class taught by multiple professors. In order to run this class, using current registration procedures, each professor was assigned to the students who came from their particular school. Typically students who are registered for a class will have a class share drive provided by the institution as well as a blackboard site-this allows them to freely deliver and access information. Students who are listed under separate graduate and undergraduate sections, as well as listed under different professors from other schools, cannot access each other’s share drives nor can they access blackboard pages. Professors were also unable to access students listed under separate professors’ listings.

To accomplish a universal access to information students first set up a “Facebook” group and then researched better share websites and eventually established a “Dropbox” site which allowed up to 2 gigs of memory for free. Campus wide email was also used for professors and students to communicate important deadlines and meeting times outside of class.

Students found that certain computer programs and formats were more useful for communicating between disciplines. Programs such as Adobe Photoshop, Illustrator, InDesign and Acrobat as well as Microsoft PowerPoint, Word and Excel were familiar to all students in every discipline. Programs like AutoCAD, Revit, Solid Works, Rhino and other 3-D modeling programs were dependent on specific discipline knowledge primarily from industrial, furniture, interior and architectural design students. Sending or saving information such as PDF’s and JPEGS help to
communicate to non 3-D users the information that could then be converted into presentation graphics that all disciplines were capable of producing.

**FINDINGS**

In Phase 2 the transdisciplinary class: Collaborative Partnerships: Re-envisioning the National Park Experience held during the Winter 2009 quarter responded to both pre and post questionnaires administered to class participants regarding their reactions to the park and the classroom experience. Class participants and staff from Fort Pulaski also responded to a self administered post class survey to express ways the class and experience could be improved.

**Pre and Post Test Questionnaire Results**

Pre-Class: When was the last time you visited a National Park or Monument?

- Less than 5 years: 19%
- Less than 1 year: 62%
- Never: 19%

Prior to this class, what was your opinion of the U. S National Park Service

- Highly Favorable: 31%
- Somewhat Favorable: 31%
- No Opinion: 38%
Post-Class: How has involvement in this class affected your opinion of the U.S. National Park Service?

- Highly Increased Favorability: 30%
- Somewhat Increased Favorability: 50%
- No Effect: 10%
- Somewhat Decreased Favorability: 10%

Pre-class: Would you visit a U.S. National Park Service Site as a result of this class?

- Definitely: 75%
- Possibly: 6%
- Unsure: 19%

Postclass: Would you visit a U.S. National Park Service Site as a result of this class?

- Definitely: 90%
- Unsure: 10%
When students were asked, “How has involvement in this class affected your opinion on the U.S. National Park Service?” there was a marked increase in the “Somewhat Increased Favorability” category of 31% at the pre-test to a 50% response in the post test. Only 10% of participants had a response of “Somewhat Decreased Favorability.”

When students were asked, “Would you visit an U.S. National Park as a result of this class?” there was an increase from only 75% responding during the pre-test as “Definitely” that in the post-test reported 90% as “Definitely.”

For the last question, “Would you volunteer at an U.S. National Park as a result of this class?” respondents in the “Definitely” category increased by 4% points and the “Possibly” responses increased by 27% points. Only 10% of respondents checked off the “Never” category.
Self Administered Post Class Student Surveys

In the results of the post class surveys student reported the following positive experiences from the transdisciplinary class:

“The experiences that I received were great.”
“We did work with a great client and I did learn skills…I learned how to work well with other disciplines.”
“I did meet a lot of great people who have been able to help me from other projects.”
“I met some really great people from other majors that I would not have been exposed to otherwise.”
“The most successful work was completed when teams were enthusiastic about the project, when there was clear communication between teams and individuals, and when a team would capitalize on each member’s unique talent.”
“The connections made with students in the class were invaluable. I have worked on other projects outside of the class with those students.”
“This class has really made it seem like a real world work atmosphere with people who come from different backgrounds and different points of view.”
“It allowed us to tap into a whole new knowledge base that we did not even know existed.”
“Communication between students was handled extremely well, the separation of groups increased competition and sportsmanship, and then switching teams around allowed for greater involvement.”
“I believe that everyone should participate in a transdisciplinary class at least once before graduating.”

Students also reported some of the negative experiences as a result of the class:

“I feel like 20 people were too many to be working on this type of project.”
“There could be a better way to conduct meetings, such that the entire class does not sit and listen to the same three people discuss the same thing.”
“The least successful work happened when there was frustration and /or limited motivation within a team, when communication deteriorated between teams and individuals, and when individuals were working on things they had little or no understanding of.”
“If we had a better meeting space, a sort of “war room” where we could gather to discuss things.”
“Communication between students and instructors could be improved by asking the students to give feedback to the professors that would not inhibit their grade (maybe anonymously). It is often hard to ask a professor to do something differently when students have grades riding on them.”
“The room in Norris Hall was cramped and ill-equipped.”
“Fewer students, more focused leadership.”
“More structured meeting times that are agreed upon at the beginning.”
“Better communication between client and student and more involvement with professors.”
Self Administered Post Class Fort Pulaski Staff Surveys

The comments of the post class surveys from the Acting Superintendent, Randy Wester and Ranger Mike Weinstein rangers were also gathered:

1. Prior to the collaborations with SCAD what were your expectations?
   RW-I came in on this project after it had started.
   MW-“I expected SCAD to generate some innovative design ideas based on guidance from the park staff. I expected SCAD to produce basically a final design product. I also expected SCAD to adjust its designs based on input from the park.”

2. Were those expectations met?
   Yes  No  (please explain)
   RW-N/A
   MW-“Basically, yes. The students came up with some great ideas. Every now and then, I felt the students were not following the park’s guidance as closely as they might have (in terms of the focus of the content). In the end, the students worked very hard to accommodate the park’s requests. I did feel that the very start of the project was slowed down by the students giving proposals for the entire park rather than focusing on the visitor center exhibits. We eventually got where we needed to be, but we lost some time.”

3. What do you think is key to a successful collaboration?
   RW-“Having an initial plan and sharing of ideas, cooperatively, to achieve that plan.”
   MW-“Understanding the perspective of your partners.”

4. What was the biggest challenge?
   RW-“Bringing the ideas together within a relatively small budget. Also choosing only a few of the many, wonderful ideas.”
   MW-“Imparting the organizational culture of the Park Service to outside partners.”

5. Were the models and graphics used to present the ideas appropriate? How could they have been improved?
   RW-The models were very appropriate. They certainly helped me in visualizing what the finished product would look like. It also enabled us to mix and match.
   MW-“Yes. I like the models and graphics.”

6. Was the quality of the presentation and product at a greater level, same level or lower level as compared to a federal interpretive designer?
   RW-“The presentation and product was at an equal or greater level as compared to other designers I have worked with. Most designers will bring in the exhibit plan books but I’ve never had the benefit of having models of proposals. I think that’s a great addition to the planning and design phase.”
   MW-“Don’t know.”

7. Would your involvement been at a greater level, same level or lesser level if you had hired a federal interpretive planner for the design?
   RW- “Would have been the same.”
   MW- “Don’t know.”

8. What was the experience like for you working with college age students?
   RW-“The experience was great. The students had a lot of great ideas. I did sometimes wonder if they thought we had an unlimited budget. Once we got down toward the end they were much more conscious of the money part of it.”
   MW-“I enjoyed their enthusiasm and familiarity with new technologies. Overall, a very positive experience.”
9. How would you rate their professionalism?
Highly, Mostly Positive  Moderate  Needing Improvement  Low
RW-“Mostly Positive”
MW- “Mostly positive to highly. Sometimes the oral presentations were a bit confusing, but overall, they were well done. The students always maintained a professional decorum and commitment.”

10. Would you recommend a college/university led interdisciplinary design collaboration to other National Parks?
Yes  No  Maybe (Please explain)
RW-“This was a first for me. The process worked very well and was a great idea. Splitting the students into three groups was a good way to bring out a lot of good ideas. The first meeting when the three groups gave their presentations at the park was a bit of a surprise. I was expecting a presentation on the exhibits in the visitor center and instead got a very good presentation on the entire park. This may have been the original intention but having just come to the park it was not what I was expecting at that time.”
MW-“Yes. It’s a great source of new ideas and the students were serious about their work.”

CONCLUSION

The Fort Pulaski Long Range Interpretive Plan provided a great opportunity for Savannah College of Art and Design to engage students from various disciplines around the complex issues surrounding the National Parks System. Peter Checkland (1981) wrote, “While we have interdisciplinary teams, we need transdisciplinary concepts that serve to unify the knowledge being applied from areas that cut across the trenches that mark traditional disciplinary boundaries.”

Through engaging in the transdisciplinary re-envisioning exercise students were able to expand upon the visitor center exhibit program provided by the Fort Pulaski National Monument. The final design of the visitor center exhibits creates a richer, more complete experience for the visitor. Through the initial re-envisioning exercise the program was enhanced through the addition of interactive video displays, character narratives, prioritization of the “Breach Exhibit” as the “Introductory Panel”, the merging of the “Timeline and Photo Exhibit Wall” to become modular and changeable and the development an interactive “Artillery Island Exhibit.”

Ways to improve the experience includes addressing issues of smaller class size of around ten to twelve students, appropriate facilities including “war room” spaces and direct access to fully equipped computer labs and model fabrication facilities, better campus wide communication infrastructure, more hands-on direction from advising faculty, and creating greater comprehension and “buy-in” to the transdisciplinary approach as it applies to execution of specific design projects.

Through the use of the transdisciplinary team approach, we provided a model that can be integrated into other National Park Service projects and programs. By engaging students, faculty and our own National Monument, Fort Pulaski, we will meet the National Park Service’s Centennial Challenge goals of education, professional excellence, stewardship, environmental leadership and recreational experience. This project introduced both SCAD students and the National Park Service to a collaborative process that will have a real and lasting impact, enhancing the experience of park goers for generations.
REFERENCES


