Planning an E-Journal: Providing a Mechanism for Students, Teachers, and Researchers to Collaborate and Have a Voice

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Abstract

This paper describes a concept and launching plan for an electronic journal to serve students, teachers, and researchers in Abaco, Bahamas. This E-Journal concept is part of a Leadership Challenge for the Leadership in Science Inquiry course in the Global Field Program Masters with Project Dragonfly at Miami University, Ohio. This E-Journal seeks to provide a forum for students to share their voice in science and conservation and to give them confidence with the opportunity to publish alongside teachers and researchers. A questionnaire was developed to gather information from stakeholders to help inform the concept plan for the journal. Feedback informed the launching plan and next steps for planning the journal. Journal launch is planned for 2016.

Planning an E-Journal: Providing a Mechanism for Students, Teachers, and Researchers to Collaborate and Have a Voice

Friends of the Environment (FRIENDS) is a nonprofit organization based in Abaco, Bahamas. FRIENDS works with a mission to preserve and protect Abaco's marine and terrestrial environments in order to achieve sustainable living for the wildlife and people of Abaco. FRIENDS' main approach for addressing this mission is environmental education. Since the inception of FRIENDS' education program in 2006, approximately 12,000 environmental education experiences have been offered to local students (Friends of the Environment, 2015). In the last two years, the organization has set an additional goal to facilitate more research on the island and increase collaboration between the fields of research and education. This goal will be enabled through the inception of a new extension of FRIENDS - the Frank Kenyon Centre for Research, Education, and Conservation (Kenyon Centre), which opened on April 30, 2015. My Master Plan currently focuses on learning new methods that can assist program development, implementation, and evaluation for FRIENDS.

The Leadership Challenge that I have chosen to pursue is the concept development and launching plan for an electronic journal. The purpose of the journal will be to share student science projects, new science lesson plans, and current research projects in Abaco, Bahamas. The E-Journal will help form connections between FRIENDS' programs and ongoing research at the Kenyon Centre. Additionally, the E-Journal will aim to assist in broadening FRIENDS' school outreach and increasing community awareness and recognition of on-island research (both professional and student projects). Recognizing the time needed to develop, implement, and fundraise for such a program I have decided to split the program development into two stages; this leadership challenge covers planning for the journal, while implementation will occur in 2016 once adequate planning has taken place. This project was inspired by the likes of *Dragonfly Magazine*, and *Connect* (Australian Council for Educational Research, 2015) both of which enable students to have a voice among the loud throngs of adult scientists and writers. Citizens should not only be involved in the creation of science (Bäckstrand, 2003) but in publishing and

disseminating it as well. Students deserve the opportunity to share their work and feel that it has value; they are important players in their community (Hart, 1992).

Students from different backgrounds and age levels form stereotypes of scientists at fairly young ages and strengthen those ideas as they grow (Chambers, 1983; Finson, 2002). This stereotype is typically male and does science indoors; the science is often kept "secret" (Chambers, 1983; Finson, 2002). The E-Journal content can help students change their opinion of what a scientist is, expose them to new careers in science, and help make science more transparent (Erten, Kıray, & Şen-Gümüş, 2013). Publishing in the E-Journal can lend greater credence to student projects and help them prepare for further education. Additionally, the E-Journal can provide students with an outlet to share their concerns for the environment through their writing (Hart, 1992).

Evaluation

Planning Stage

A series of questions was developed by the author as a means to gather feedback and advice from potential collaborators and to seek some level of commitment from them. Gathering feedback in a participatory manner can help encourage buy-in of projects and lead to increased participation (Greene, 1988). Questions were designed to gauge need for this type of program in Abaco, identify links to existing projects or curricula, refine the audience for the E-Journal, and to identify potential future partners. The questionnaire was emailed to nine people of various backgrounds including teachers, researchers, writers, publishers, and students; eight people responded. The email included an introduction to the concept of the journal and gave respondents the opportunity (through an open-ended question) to make additional suggestions beyond the given questions (Appendix A and B). Based on feedback from respondents, the questionnaire should be extended to more science teachers as well as English Language teachers (Appendix B).

Members of the FRIENDS Facebook page were surveyed using the *Poll* application. The question asked "How interested would you be in reading or submitting to an electronic journal or blog that includes science by students in Abaco, science-based lesson plans by local teachers, and

short summaries about research in The Bahamas?" and gave optional responses of very interested, interested, neither interested or disinterested, unsure, and not interested. Using the statistics provided by *Poll* it was revealed that 26 Facebook members engaged with the post, while 38% of those actually answered the question, and one person shared the poll. Interestingly, 75% of respondents were female. Fifty percent of respondents indicated that they would be "very interested" in the E-Journal, 30% were "interested", 10% had no opinion, and 10% were unsure. None of the respondents selected "not interested".

Implementation Stage

Several evaluation tools have been selected for short and long term program assessment. Given the electronic nature of the journal and the goal to reach a younger audience, social media is a natural choice for promoting and evaluating the journal's outreach effectiveness. The chosen social media tool is Facebook, which has a feature that allows page administrators to download statistics on page likes and visits, and post reach. The FRIENDS website has a plug-in called "Counterize" (n.d.) which tracks visitation and sends automatic monthly reports. In the long term, FRIENDS will also be able to assess whether the E-Journal has affected community behaviour by tracking the level and quality of participation in FRIENDS' annual science fair (e.g. improvements in writing scores), and the number, quality, and diversity of both articles submitted to the journal and authors who participate.

Project Timeline

A timeline of activities was created, taking into account the requirements for the Leadership in Science Inquiry Course, the Bahamian school calendar, and FRIENDS' program calendar. Project success will be monitored by timely completion of each step. Planned activity duration is marked off in Table 1 using the letter x.

Table 1. Timeline of Action for E-Journal Development and Launch (March 2015 - January 2016)

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Online research	x	x	x	x							
Talk to potential researchers/editors			x	x	x	x	x				
Talk to teachers and students			x	x		x	x				
Seek funding						x	x	x	x	x	x
Create draft launching plan		x	x	x	x	x	x				
Create draft E-Journal			x			x	x				
Possible teachers workshop							X	x			
Launch concept and seek support at biennial Abaco Science Alliance Conference											x

Discussion

Ultimately, what I have learned from these questionnaires is that I have indeed chosen a challenging project, however it does seem to address a valid need for information sharing. By asking for feedback from stakeholders I have endeavoured to shape the project with the opinions of those who will be involved and attract them to the project as participants (Greene, 1988).

Design

Fifty percent of respondents mentioned social media as a means to engage students and to share their work (Appendix B). The E-Journal will be designed in the form of a blog to appeal to younger participants and to facilitate access to published works. The Journal of Sustainability Education (JSE) is an excellent example of what this E-Journal might grow to be (2015). Questionnaire feedback and informal conversations were very valuable in emphasizing the importance of social media playing some part in the E-Journal. Therefore, posts will be promoted

through social media including Facebook and Twitter. For the purposes of fundraising and program outreach it will be important that the identity of the E-Journal is linked to that of FRIENDS. This will be facilitated by creating a direct link in the FRIENDS website to the E-Journal, ideally by embedding the blog into the website. The FRIENDS logo will also be used to increase recognition of FRIENDS' involvement in the E-Journal.

Audience

There was a consensus among respondents that the E-Journal should serve upper primary and high school level students. Some variation occurred in regards to suggested grade levels, which may indicate a potential for variation in future participation. Collecting some feedback from representatives of the Ministry of Education could help identify and confirm key grades to participate in the journal. The focus on high school students is ideal for FRIENDS, due to a recently identified gap in high school outreach.

This project also seeks to engage researchers working in Abaco, Bahamas in outreach programs, and teachers who develop new science-based lesson plans. The opportunity to submit to the new E-Journal will be offered to all schools in Abaco, whether public or private and regardless of background to provide fair opportunities for all (Hart, 1992). Readers of the E-Journal are anticipated to be students, teachers, researchers, participants in FRIENDS programs and community members. Students are valuable agents in knowledge transfer and can help their parents, guardians, and other community members learn new information (Vaughan, Gack, Solorazano, & Ray, 2003). In the long term, this E-Journal could expand to accept submissions from other islands in The Bahamas, and FRIENDS could reach out to promote the journal internationally. Partnerships will be sought with local and national outlets such as the Abaco Scientist Blog and the Abaconian Newspaper. This project will draw on the talents of both local and international teachers, researchers, and publishers to design and maintain the E-Journal.

Scope

For student submissions, the E-Journal will focus on scientific method and encourage projects in themes that address current conservation issues on island or tie-in to existing Bahamian science curriculum topics and science club or science fair themes. Teachers will be

encouraged to submit new lesson plans that support the Bahamian science curriculum, or perspectives that discuss ways to improve on teaching science locally. Researchers will be invited to share project summaries using language that is approachable for students and the general public. While the community audience may not be typical for researchers, the structure of submitting to an E-Journal should be familiar (Martín-Sempere et al., 2008).

Challenges

Plagiarism is a big concern, not only for submissions to the E-Journal, but also in the sense of articles from the journal being used locally for school assignments as teachers collect homework on paper and have no reliable way to check for plagiarism (Appendix B). This is a challenge that I believe will take some strategic conversations with teachers and careful crafting of proposed article structure and themes to overcome. The use of a plagiarism checker such as Turnitin has been recommended for the E-Journal itself (iParadigms, LLC, 2015). The cost of plagiarism checkers, new web addresses and web hosting will be an additional challenge to overcome.

Participation and Promotion

Ensuring that students have access to the journal and that it is promoted to them will be key in their participation. Opportunistic discussions with high school students revealed that social media (e.g. Twitter and Instagram) will be important for communicating with them. The journal can be promoted to teachers through FRIENDS' existing teacher database, as well as at teacher workshops and through contacts at the government's Department of Education. The journal can be marketed to the general public via FRIENDS' email database, Facebook posts, and the Abaconian newspaper.

Reflection & Philosophy

I believe this project exemplifies my leadership style and pushes boundaries by challenging me to extend beyond my existing scope of work. Until I heard a talk earlier this year about it I had never heard the term "servant leadership" (Greenleaf, 1977). Servant leaders naturally wish to serve their community, and while doing so they help their communities improve and become better versions of themselves (Greenleaf, 1977). In this project, I chose to

be a facilitator, bringing together people who can help make the E-Journal happen and providing opportunities for learning and knowledge sharing. My typical leadership style includes affiliative and democratic characteristics, which are important in this project, however I will need to continue to work on coaching others and improve my level of emotional intelligence to include being a visionary leader and change catalyst (Goleman, 2000). This will also be key as my role at the Kenyon Centre develops further. Each attempt to gather feedback for this project has resulted in positive responses, which I feel is a great indicator of future community support. The amount of support for science education expressed by the community at the April 30th opening of the Kenyon Centre should also be a good sign (pers. obs.). To further develop the E-Journal concept more feedback should be collected from students, and from parties that were identified in the questionnaire responses as potential collaborators. Overall, I am happy with the level of questionnaire and poll responses, however I think I should have initially reached out to more people.

Conclusions & Next Steps

This Leadership Challenge has helped me to formulate a well-rounded plan for the E-Journal, which I hope will be an initiative that grows along with the organization. The plan should be followed closely, ensuring adequate opportunities for stakeholder participation along the way. It will be very important to form a committee of editors large enough and diverse enough to be able to serve all purposes of the journal. FRIENDS will need to consider additional outreach on science writing, plagiarism, and conservation issues in Abaco.

This E-Journal gives students a chance to share their work and have it recognized by the wider community; no broad forum currently exists for that in Abaco, outside of the FRIENDS science fair. Publishing in the E-Journal will provide students with a valuable learning experience, and credentials to add to their resumes. By completing and publishing their research, students will have a hand in educating themselves and their peers; the types of articles that students submit could indicate the topics they consider important to their peer group (Jenkins, 2006). I see this project as having great potential to bring science to the community in an

approachable format. As students promote their work to family and friends, the topics addressed in the E-Journal will be shared with people who might not ordinarily have read about them, thus improving community understanding of Abaco's environment.

The next step will be to collect samples of work that would be appropriate for the journal in order to create a mock-up of what the E-Journal would look like. I am going to investigate opportunities to speak to groups of teachers (workshop days, etc) to share the concept and garner their support for the project. Major planning for the Abaco Science Alliance Conference will begin this summer, so I plan to incorporate the journal launch into that planning process. It will be very important to maintain connection with stakeholders throughout the development process (Greene, 1988).

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Appendix A
Collaborator Email

Dear _____,

As part of my Master's program and my work at FRIENDS I am investigating options for forming an electronic journal to help make better connections between students and science and to encourage greater community understanding of science, in particular research happening in Abaco.

I have pulled together some ideas, but I wanted to invite you to give your thoughts based on your experience as a (teacher, curriculum writer, researcher, publisher). I have included a short questionnaire below - would you be willing to answer the questions?

It is my hope that publishing works from adults and students side by side will both encourage Abaco's students to realize that their projects are valuable, and widen the readership of the journal, therefore increasing the outreach potential of published projects.

E-Journal Goals (so far):
- Facilitate connections between FRIENDS' education programs and research at the Kenyon Centre
- Broaden school outreach as part of FRIENDS programs
- Increase community awareness and recognition of on-island research (both professional and student projects)

Potential Scope of Submissions:
- student articles (from school assignments, science fair projects, summer field courses, etc)
- teacher submissions of new science-based lesson plans
- researcher summaries of studies (both completed and in-progress)

Thanks for your time! I really appreciate it. Feel free to contact me with any questions.

Best,
Olivia

Olivia Patterson
Program Coordinator
Friends of the Environment

Appendix B
E-Journal Questionnaire and Responses

Your responses will be used to help me design the E-Journal, and may be used to inform a paper I am writing for my Leadership in Science Inquiry class assignment as part of my Master's program at Miami University of Ohio. Responses will be kept anonymous, unless you request otherwise. All questions are optional, though I hope you will consider answering them.

(Each respondent was assigned a different letter. Respondent E chose to answer the questions in the form of a conversation, so some questions were not answered explicitly.)

1. What needs do you see in terms of youths communicating science? (In The Bahamas, and elsewhere)

A. The material should maintain the scientific method and not talk down to younger age groups. Avoid jargon but keep everything data-based, although statistics may need to be simplified or explained in advance.

B. I think having an outlet to do so is a need, which it sounds like your E Journal will provide.

C. Lack of internet access at home for many of our public school students, Lack of computers for public school students, For many of my students English is not their first language, Time constraints, the demands of the curriculum, and class size it is difficult to be involved in long term meaningful projects

D. More public forums- community meetings, publications, social media.
Scientist feedback and direction. (At the primary level, we often wish to see our basic studies further pursued at a higher level)

E. N/A

F. I think that there are a lot of needs in relation to youths communicating science. This is not only applicable to The Bahamas. Because science is involved in virtually every aspect of life, there is an increasing demand for info about it. The youths of today have a broad variety of possible means of communicating science. Generally, all of the methods of communicating

science aren't really utilized effectively. Eg. Most youths are exposed to the traditional techniques of communicating science via science magazines or science text books. However, I believe that because communication has evolved in recent years technology should be used more often for science communication among youths. There is a great need for science communication through Social media. In my opinion, it is an efficient and fast way of relaying data. It can be so helpful to younger people who simply cannot find info in text books. Interesting Practical approaches should be considered in youths communicating science. It will help the science lesson to be fun and better retained.

G. Young people in the Bahamas see science as something they study, not something they do. They research it but don't understand that they can be a part of it, and then communicate what they have learned. That final, important step seems to be missing. Our youth need first the understanding that they can communicate what they learn about the world around them, and then they need a venue to do this. Most of them are proficient in social media, and that may be the best avenue for such communication.

2. How can this project benefit or connect to your work?

A. It would be useful if students were exposed to the basics of coastal processes through field visits, possibly using anything suitable from my own observations. Field visits should also be the basis of most local study, regardless of topic.

B. It would best help me by providing additional information for the Abaco Scientist website [a science blog]. It is hard to keep material current, so any contributions I could link to would be useful.

C. Sharing ideas with other teachers will help me to think outside my box. Help students to think outside the classroom.

D. It would validate our findings, or steer us in directions to other studies of similar nature (pun intended). It would give the kids a sense that their projects have meaning beyond science fairs and recognition at the local level. It would make them part of the scientific community. It would focus many on career paths.

E. N/A

F. As a student I think that this project can help my schoolmates to keep up with trends in science. My schoolmates may find the articles and other information interesting and useful and so our science teacher will also be benefited in the process.

G. It would be a great boost to Abaco students to be able to share their work with others, and especially to see it alongside the research of scientists. I think this would benefit my students and their confidence in science. It would also be a great tool for them to network with other Abaco students and scientists doing research in Abaco.

3. Would you be interested in being part of the E-Journal? How?

A. Up to the point where existing or current work could be re-written for use in your journal. My teaching experience is entirely in further and higher ed. so I am not the best person to contribute at this level.

B. Happy to help. I would use the Abaco Scientist site to promote it.

C. Very interested. Would like to help with editing and would contribute articles etc.

D. Absolutely. We would love to be a pilot primary school to work out any kinks in communication and use basic research we've done over the years- or can do now- to stimulate conversation with other schools and scientists.

E. N/A

F. I would like to be a part of the e-journal by probably giving commentaries for teens on certain themes.

G. Yes, I can see my students writing journal entries on the projects they do in Marine Science class, and even writing brief field trip reports with anecdotal evidence recorded on these field trips. It would also serve as a permanent record of the great science fair projects that our students produce. As it is now, this information is often lost after the science fair.

4. Can you recommend others who might be interested in either helping develop the E-Journal or being part of the journal committee?

A. Nobody you don't already know, BNT [Bahamas National Trust] staff would be excellent if they could be persuaded, such as Shelley Cant.

B. I think almost any of my current or former students would be interested in helping. I think Betsy might be at the front of the crowd in terms of interest.

C. Shenika McMullan –Abaco Central High
o   Nadeen Been (sorry do not have contact info)
o   Dametra Moss (Abaco Central High)
o   Tanique Brutus (former student, into ecotourism, again no direct contact info, I can contact her through facebook.

D. Forest Heights. Deep Creek- to get other islands involved.

E. Teachers and science clubs. Teachers can promote the blog with students.

F. My science teachers from St. Francis Mr Ramotar and Ms Gomez my cousin Vernae Porter an aspiring marine biologist and my friend Rajeev Clark would probably be interested in working with the ejournal.

G. I suggest that you engage at least one science teacher at each of Abaco's high schools and perhaps even get a seasoned English teacher on board, that can assist with ideas for integrating across the curriculum.

5. What ages/grades do you think would be most appropriate to target?

A. Probably Grade 6 and up, but you must engage the teachers as well if you are going to get the material to the children.

B. This all depends on what form the EJournal would take. I think any age/grade could make sense, depending on what you view the final product as.

C. Grade 10 to start with– most of environmental portion of curriculum is at this point, and we can follow their progress over the next three years.   Perhaps grade 7 if it has junior and senior high sections.

D. Upper Primary. Two grade levels in High School- maybe untested years?

E. Upper primary and higher. Primary school level is easy to adapt to lots of different activities (curriculum is not as containing). Could keep it open for everyone, and teachers might want to incorporate into specific grades (e.g. grade 10).

F. Grades nine and up would be the most appropriate target because they would better benefit from it I believe.

G. Upper Primary through High School should be able to take part.

6. Do you have any other thoughts or comments regarding the E-Journal concept?

A. I would definitely expect the adult readership to be the key audience, so make certain it appeals to them first.

B. I think you would get better feedback if you did a trial edition. Always easier to comment when you have an example. Right now the idea is vague, so hard to contribute.

C. I think we should eventually think outside of Abaco, not Nassau so much but many family island teachers and students need this sort of forum. To jump start the programme perhaps have a list of projects curriculum linked or linked to research going on in Abaco. Mini-competitions e.g. entry of the month, photo of the week.

D. Would this allow a forum for discussion?
Would it allow scientists to share findings in a language geared to students?
What format would it take? Formal presentation for scientific credibility or kid friendly- pictures, links to videos and other similar projects/research?

E. Science clubs would be a potential source of papers and projects. Also, the FRIENDS science fair and individual school projects. BGCSE course work would not be appropriate submissions for the E-Journal, because of plagiarism. Students would be tempted to use published submissions for their own coursework (exams). Also, teachers may be able to share lesson plans, but not course work ideas.

F. I think that the e journal is absolutely a better way of communicating science because it can get everyone involved not only a certain type of people. I also think that with consistent updating and variation, many people will follow it regularly. I think that it is such a rewarding project in which everyone can benefit from.

G. I look forward to being a part of this program, and I think that it will help our students to share and to value their own contributions to science!

Other Comments:

i. I am assuming that your market is mostly the school community who are members of Friends. It is very difficult to engage schoolchildren directly with formal literature, however much it is designed for them. My comments are made with this in mind.

ii. In general I like this idea (although I do have trouble wrapping my mind around what it would look like). Do you think there will be sufficient contributions? I would think it would have to be monthly to have enough content?

iii. More kids have [smart phones] than computers if a part of the e-journal could include whatever the most popular app is now you could have a wider audience.

iv. First of all - I love this idea. Giving recognition to, credit for, and attention on student driven research, observations, and findings is a valuable way to empower and inspire the youth to be directly involved in productive change to not only policy but public perception, which I think is arguably the greater challenge we face in The Bahamas.

v. We would have to do some outreach with students about plagiarism. What about computer classes, office procedures etc? Other ways for students to become involved instead of through science classes?

vi. N/A