# BiSC3: Environmental Science

**Enhancing Environmental Interest and Interactions through ANGEL Collaboration & Communication Tools**

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## Introduction

In my BiSc3 sections I focus on enhancing students' environmental literacy and sense of responsibility through several course components including these listed below:

1. Environmental news share, reflection, and response: Each week students are asked to utilize the ANGEL discussion forum to share an environmental news story and their thoughts and reflections on that piece. They are then asked to read three other posts and comment and reflect on those environmental news stories during the latter half of the week.

2. Reflective Journals: through several reflective synthesis essays and activities students are asked to reflect on their environmental knowledge, beliefs, attitude, and action throughout the semester beginning with one focusing on the time up to the course.

3. Environmental Awareness & Community Action Project (EACAP). Students work in teams learning about an environmental issue of their choice, take action in the community to combat the issue or educate others about it, and then present all of their work to their classmates. The action in the community is in partnership with community organizations including Nolde Environmental Education Center, Monocacy Hill, Berks Parks Department, Berks Conservancy, Hawk Mountain, and Blue Marsh Lake. This is the service-learning component of the course.

My goal for this TLI project was to increase students' communication and collaboration with each other (both within their section and across the two sections) as well as increasing the accessibility of the course material (including student artifacts) to all students. I wanted to incorporate changes to be something that increases accessibility, communication, collaboration, and sense of community within my classroom. I would like to be able to track students' progress on a routine basis rather than waiting till the end to be able to provide feedback or a push sometimes. I would also like students from both sections to be able to view each others' work, be it the components of the EACAP project or their environment exploration or their news shares.

## Project Design

Since I had already been using ANGEL and I knew most students were familiar with ANGEL I decided to focus on expanding my use of ANGEL tools rather than trying something completely different. The following are the changes I made to my use of ANGEL within this course:

1. One of the main changes I made was to combine (merge) my two sections of the course into one. This allowed not only for easy uploading of course material to be accessible to all students simultaneously, but it also enabled students from both sections to be able to interact with one another and exchange ideas and opinions which they otherwise would not be able to do. This was in particular true for the weekly news share assignment and also for my uploading of student teamwork (their presentations, reports, etc) to be viewed by all students in both sections.

2. I utilized the online chat session twice as a supplementary class session. This allowed us to have class discussion about the topic we were discussing at the time and for students to be able to interact in a chat format with each other and myself.

3. The weekly environmental news share was done on the discussion forum but both sections were merged so students were able to view and respond to posts made by all students across both sections. I also utilized the grading tool within the discussion forum to keep track of whether each individual had done a post and three responses for each week and to assign them a grade for that week’s news share.

4. Each team for the EACAP project was formed into a team on ANGEL with their own folder, etc. I also used the discussion forum and its “private journal” option to create a private log for each team. Teams were supposed to use this private journal to keep track of their work on the project, communicate with me and their team members, and receive comments and feedback from me on their project plans and activities. The idea was for them to use the private journal to keep a weekly log that I could check. I checked the option that enabled me to receive a notification message when they would post something.

## Discussion

I was happy with the majority of the changes I made using ANGEL this semester. Students were able to receive instant comments and feedback from their peers and me. Many of them discussed how they found that to be very useful when it came to receiving suggestions and comments from me on their project and they could also ask questions or seek further clarification. They also enjoyed being able to interact with one another virtually and especially because it allowed them a forum to be in communication with people they were not normally with in class (the other section) and to see a much wider range of opinions, experiences, etc. The discussion between the students, in particular with the weekly news shares, was especially effective and beneficial because they were also encouraged to make connections to class topics and discussion themes and were able to grasp the extent of ideas and opinions in the other section they were not in. Students commented extensively with respect to this in their reflections. The assignment itself had raised their awareness of environmental issues and raised their interest in the world around them and the environmental problems we face as well as positive actions that are being taken all around the world to combat such issues. All of these course components will also allow them to see the magnitude of the issues surrounding us, the various viewpoints that may exist on these issues, and the multitude of ways their actions can positively or negatively influence the environment around them and the issues facing the environment.

Overall, I am certain many faculty will be able to utilize the findings of this project to implement such technology tools to enhance students' learning, level of interest and engagement, and peer collaboration and discourse.

## Recommendations

The combination of the two sections (on ANGEL) was very beneficial and I would suggest that to anyone who might have several sections of a particular course. In this way, I was able to have the students who were in different sections still be able to communicate with one another in the form of their responses to the environmental news stories. They were also able to communicate when we had online chat sessions and were able to see their peers’ presentations and other work that I would post on ANGLE for both sections to view. So overall this proved to be very helpful and also something interesting for the students who are used to being in their distinct sections.

The discussion forum worked well for the weekly news share but I was not able to utilize it as effectively as I would have liked to when it came to using it as a private journal for the students to use to report their progress log for the EACAP project. Students did not find that part easy or efficient. I had to push them to enter their work and inform me of their progress using this tool. They were also not using it to communicate with their team members since they were mostly texting and emailing each other to arrange meetings and discuss plans. So it felt as though they were actually doing their team discussions using other devices. It was just not convenient enough for them to log onto ANGEL and then use the discussion forum to communicate with their team or myself. They preferred to email or talk to me in class if they had questions. So that component needs to be done differently next time.

## Conclusion

The use of ANGEL for the various assignments and components of this course proved to be effective. This was especially true for the weekly environmental news share and for me as the instructor to upload students’ work (from both sections) on ANGEL for all to be able to view. I will continue to incorporate the use of technology to do similar tasks next spring, but because of some of the minor glitches with ANGEL and its lack of user friendliness (at least with respect to the progress log option my students had to do for the main project) I would like to try Yammer next year since I have found that to be a very useful tool in the science methods course I teach during the fall.

## Scholarly Outcomes

I am currently working with a co-author on a manuscript related to the weekly environmental news share assignment. It should be ready for submission by end of summer 2013. It will focus on changes in students’ level of awareness with respect to environmental issues as a result of their completion of this task. It will also explore the types of environmental issues students focused on for their weekly news shares as well as their ongoing and final reflection on this assignment.

## Acknowledgements

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