Implementation Plan and Teaching Notes

**Context for Use:**

Instructor: Michael R. Britton, PhD

Department: School of Life Sciences, Arizona State University  
Audience Level: **Undergraduate**

Undergraduates: **Majors**

Instructional Setting: **Lecture**

Number of Students: 106

Dates of implementation: 1 April 2023 – 1 May 2023

**OCELOTS Module Title**: Restoring tropical forests: Is planting clusters of trees a cost-effective and ecologically-sound strategy to restore tropical forest?  
**Link to Module on Gala**: <https://www.learngala.com/cases/restoring-tropical-forests>

**Learning Goals of Module:**

* Describe the ecological and social barriers to tropical forest recovery
* Compare the ecological and social outcomes of applied nucleation with other forest restoration strategies
* Explain why restoration strategies have to be tailored to local ecological and social conditions
* Demonstrate the ability to interpret scientific figures
* Justify the importance of replicating restoration studies or projects at multiple sites

**Pedagogical techniques used**:

* Online module was used as a homework assignment for work outside of class.
* The module quiz was used as an assessment to ensure that students were prepared for class.
* An in-class discussion was created to allow students to think about and discuss the ways in which succession may vary in accordance to variety of factors including human activity, historical conditions, and local conditions.

**Adaptations made or parts used if the entire module was not used**

* All parts of the module were used in the implementation. Students read all sections and completed the associated quiz (quiz was reformatted to be completed within Canvas – see supplemental materials below).

**Supplemental materials created**

* “Quiz - Restoring tropical forests.txt”
* “Quiz\_-\_Restoring\_tropical\_forests.zip”
* The associated quiz in the OCELOTS module was rewritten and coded to be implemented in Canvas. Some of the short answer questions were reformatted to be multiple choice or “select all that apply” questions to allow for automatic grading in large enrollment classes. There are two files to assist other educators in including the Gala quiz in other learning management systems (LMS). One is the quiz in LaTex format, useful for converting the quiz to a variety of other formats to upload to an LMS. The other is a zip file in QTI format which is a common format to upload quizzes to a variety of LMSs.

**Assessments**

* I included the associated quiz in the OCELOTS module in my implementation but changed the format through which it was administered to students, rewritten and coded to be implemented in Canvas. Some of the short answer questions were reformatted to be multiple choice or “select all that apply” questions to allow for automatic grading in large enrollment classes.

**Changes Made (If any)**

* The biggest change I made in my implementation was in how I assessed “completion” of the online module. I had two grades in my LMS: the module quiz and the completion of the online module. My original plan was to use the “Percent of Case Completed” section of the “Enrolled Learners” section of a deployment to assign grades for students that have completed the module. As my implementation had unlimited attempts at the quiz, students could take the quiz multiple times until they received a 100%, without reading the associated online module. In an attempt to dissuade this possibility, I included the completion grade as a separate grade. However, the Gala system did not accurately record student completion of the pages. For example, students that I am confident in having completed the online module (both from trust and in course discussion of the module materials) may only have 33% of their module recorded as completed in the Gala system. So my solution was to provide a pass/fail grade instead to combat this inability to account for how much of the module was completed.

**Teaching Notes**

1. Overall, how did your implementation go?
   1. What went well and why?
      1. Students enjoyed the module and the learning materials. The discussion in my general ecology course focused on the process of succession and how restoration can be viewed as a form of succession. Moreover, we used the various outcomes of the restoration processes as evidence that succession does not follow a single, predetermined path and that human activity, historical factors, and other influences are important in determining the process of succession/restoration.
   2. What went wrong and why?
      1. The biggest factor that did not go as planned related to using the “Percent of Case Completed” section of the “Enrolled Learners” section of a deployment to assign grades for students that have completed the module. I changed this to be pass/fail and will likely remove it entirely in future implementations.
2. What was the prep like?
   1. How much time went into prep?
      1. I spent about an hour reading the module and checking my understanding. I then spent an additional hour in formulating the class discussion that related restoration as a form of succession.
   2. Did you have to do any prep ahead of implementation?
      1. The biggest prep ahead of implementation was reading the module for my own understanding. The discussion was more “during” implementation or as an extension of the implementation.
3. What feedback (positive or negative), if any, did you get from your students about this experience?
   1. Students enjoyed the module and the included information. They liked that the restoration case study provided a real-world example of the variation in successional processes (they are often taught that succession follows A to B to C etc. in introductory biology courses). Many did say that the module and quiz was “easy”, but not that it was a bad thing. Simply that it was easier than the modeling and analytical/graphical analyses that we had been doing in the course for other assignments.
4. What do you wish you’d known before you ran the activity?
   1. None.
5. Do you plan on continuing to use this module in your future courses?
   1. I will likely use this module in these sections of the course in the future, and I may include it in my Conservation of Biodiversity course (Bio 322). My implementation will likely be a bit different for conservation and focus more on social and historical factors and put less emphasis on the process as an example of succession.
6. What would you do differently if you were to implement this module again?
   1. I may include additional reading (likely something from Robin Chazdon) and expand the quiz to be more fitting for 300/400 level ecology and conservation courses. Moreover, as discussed above, I will remove the percent completion grade from the grading criteria.
7. How does this activity fit in your overall course curriculum?
   1. This activity allowed a real-world extension and case study of our unit on succession. It provided a nice illustration that succession is not a rigid, formulaic process but one that varies according to a variety of factors.
8. In what ways, if any, did you modify your teaching practice with this activity?
   1. I did not modify my teaching practices for this activity, but more manipulated the activity to fit my teaching practices.
9. Is there anything else you would like to make note of?
   1. None. It was a great module and a great experience.