## Teaching Notes

### By ***Ethell Vereen, Jr.***

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**Course Information**

Department: Biology

Level: **Upper Undergraduate**

Course type: **Lab**

Students: **Majors**

Number of Students: 30 (facilitated online, traditionally this is a face-to-face course capped at 15). This module can be facilitated online or face-to-face.

**Module Information**

Original Module Name: **Exploring EnvironmenATL Justice with Data Analytics and Visualization**

Link to Original:

[Adapted Module Name: (if applicable)

Link to Adapted Module]

Modified Module Name:

Files associated: (ie. Class Worksheet, Summative Quiz, Lecture Powerpoint, etc)

Vereen - Module EnvironmenATL Justice with Data Analytics and Visualization

Module Worksheet\_Vereen

Module Discussion Board with Grading Rubric\_Vereen

Module Reflection with Grading Rubric\_Vereen

Modification Learning Goals:



**Teaching Notes**

**How did the activity go? What went well and why? What went wrong and why?**

1. The activity went well. Students shared that they really enjoyed this topic and want to explore more environmental justice topics.
2. The introduction of the topics (environmental justice and data analytics and visualization) went really well. Having supplemental readings and videos for the students were great to introduce environmental justice and especially redlining. The worksheet was a great tool to drive the discussion and provide examples for the students to explore their own ideas and beliefs. The discussion board was also a great tool to drive discussion. The reflection at the end of the module was a nice culminating activity.
3. There was not anything that went wrong, but there are potential pitfalls that I discovered that can slow down the module progress. These are discussed in more detail in the next section. Briefly, the open inquiry nature of the module created potentially too much choice for students. Data analysis I thought was going to be more challenging, however there was more difficulty in simply identifying appropriate datasets.
4. The Peer Assessment also went well. We used a google form for the peer assessment. The link to the peer assessment is included below. This URL will open a COPY of the form so that you may edit it if you would like, or you can use it as is. Responses will be collected for the copy that you created. You will need to share the link to YOUR FORM with your students AND include the link to the form on the module document. If you share this link from the teaching notes, it will open a copy of the form for students to edit.

**Exploring EnvironmenATL Justice with Data Analytics and Visualization: Presentation Peer Assessment**

<https://docs.google.com/forms/d/19xdevioeCq0-xKFTb8sZBdxP2oNTZkpoFykB6PmeQ1g/copy?usp=sharing>

**Would you do this activity again? What would you change in the future?**

**What do you wish you’d known before you ran the activity?**

1. Yes I would definitely do this activity again! There are a few modifications/changes that I am going to note before that address a few potential pitfalls of this module.
2. The module is presented as a group project with some individual assignments that each group member is tasked with submitting. The suggested group size is a maximum of 3 students; however, modifications are not necessary for this module to be completely an individual project. I generally find that smaller groups intensify focus and facilitate effective discussions, hence the rationale for a group project.
3. Although the module is presented as mostly open inquiry, one of the more complex levels of inquiry-based learning, assignments may be modified to be more structured or guided inquiry. Open inquiry has been defined as student-driven. Similar to guided inquiry, students formulate their own problem to solve, as well as the procedure. In guided inquiry the teacher provides the problem for investigation as well as the necessary materials.
4. One really cool feature and unique challenge with this particular implementation of this module is that students have the freedom to develop their own research questions and hypotheses centered on this topic of environmental justice. Choice is good in that this leads to a variety of different questions that are explored, however too much choice can lead to some group paralysis and stagnation spending a lot of time deciding on a question to explore. Suggestions/modifications would be to narrow the topic, or create a group for each topic with a limit on the number of students/groups that can explore that topic.
5. Identification of datasets can also be challenging. The resource guide includes links to a few datasets and resources that were found to be useful. A few links are also included on the Module Overview. I strongly suggest building a library of resources and datasets that can be shared with students as needed.
6. The module discussion board asks students to choose one topic to address, and then to indicate a second prompt that they found interesting, but not to address that prompt. This second part can be omitted from the Discussion board. It has been included as a method to focus subsequent iterations of this module on prompts or questions that students found to be interesting. Additionally, this could also be a means to select a prompt for a writing assignment.
7. This module implementation centered around Atlanta, GA (USA); however suggestions/modifications may be to permit students to choose their own locations. Atlanta was used in this implementation given my institutions location in the historic West End of Atlanta, and the birthplace of the Atlanta Civil Rights Student Movement. Many of the leaders of this movement also became leaders in the environmental and the environmental justice movements.
8. Having students collaborate with community members, government organizations, not-for-profit organizations, and other environmental justice stakeholders enhances their understanding of environmental injustice issues at the community level. Having students create posters and present as if this were a townhall presentation, prepares them for this type of interactions. Modifications/suggestions would be to integrate this direct service-learning component into the module.