

James Acker

Hi Paul. In a moment Atheer will make you the presenter.

Paul Adams

Hello to all.

James Acker:

Looks good. We'll wait about two more minutes to get started.

Paul Adams:

Ready to begin?

James Acker

Paul Adams joins us from Fort Hays State University to talk about the use of Giovanni in ESSEA modules.

Go ahead, Paul.

Paul Adams:

I have been making use of Giovanni as part of the Earth System Education Alliance

As you can see on the slide ESSEA has been supported by several grants to develop materials to assist in the professional development of teachers in earth system science

The unique aspect of ESSEA is the use of problem-based learning

I will describe this more in a later slide

Coupled with the problem based learning (PBL) is the use of DATA for teachers to develop skill in scientific argumentation

That is - how do we make decision using data, how do we use data to support a position or conclusion

Giovanni is an excellent tool to help achieve this goal

The link at the bottom of the page will provide you with more information about ESSEA

ESSEA has developed several "modules"

The module consists of the elements identified on the slide

You will get a sense of these by going to the ESSEA website

The interesting part is the task that the teachers, or students as some teachers use these in a classroom, are given. We will look at two of these tonight that utilize Giovanni as a tool to accomplish the task

The images you see here represent the climate modules that have been developed by ESSEA

Topics range from sunspots, arctic oscillation, african dust, energy, etc

Here are excerpts from Carbon City, one of the climate modules that uses Giovanni -

All modules start with a scenario - this is paraphrased from the module

Note the challenge issued at the end

Here is the tasking statement after the scenario

As highlighted this task suggests the analysis to the students and possible places to start

Here is a more involved task. Each module has two levels to offer multiple challenges to the learner -

The ESS analysis is a earth system sphere analysis which looks at how the various earth system shphere interact (litho, bio, hydro....

Since the learners likely are doing the lesson on-line, collaborating with other on-line learners, a short tutorial was developed to help them acquire data.

James Acker:

Paul, is "scenario" misspelled in the actual URL?

Paul Adams:

Jim - it may be misspelled - the link was put in by the ESSEA team - Can I click to it now to show folks

James Acker:

We can check it after - just wanted to make sure. Link won't work in the presentation

Paul Adams:

OK

So, if a person follows the link, and plays with Giovanni, he/she can begin to generate graphs to support his/her response to the question.

These are done for the CO2 fraction around Kansas in the United States and Illionis in the United States

The conducts a data analysis to support their response to the task

While the prior slide was CO₂ fraction, a learner could also have used CO as an indicator of carbon products from combustion. The learner can be creative and explore. Giovanni lends itself very well to the task

This is a different module dealing with climate change as you can see by the scenario

It is a challenging question.

The basic task... note it uses NASA NEO

The comprehensive task - emphasis on Giovanni - the task here seems well suited to Giovanni as you will see

And an analysis from 1998 to 2011 on rainfall anomaly - indicating we might want to get ready for a dry spell in the United States

Questions please!

James Acker:

That final slide is stunning, especially the rainfall deficit in Louisiana, of all places!

Thanks, Paul.

Paul Adams:

Thanks

James Acker:

Is there any expectation of how long an ESSEA module will take to complete?

Paul Adams:

Yes - for me - I take about 3 months. If you go to the website you will see how it is organized

There are multiple cycles that use NASA resources and other reliable sources

James Acker:

Sorry, I meant in the classroom setting, to do the task. But thanks for saying how long it takes to create one!

Paul Adams:

Also there are classroom activities for the teachers to use

The time investment is in pulling these together

My problem is that I get so interested that I find it hard to stop researching!

Oh - sorry - for the classroom about 2 to 3 weeks

James Acker:

I should also mention that Paul is featured in a NASA video about the DUST program that instructs teachers about the climate impacts of DUST.

And he made sure to mention Giovanni.

Paul Adams:

I offer modules in the summer to teachers.

I should add that there is a Dust module at ESSEA.

James Acker:

Do the teachers come to Fort Hays?

Paul Adams:

No, the modules are offered on-line.

James Acker:

Ah, thanks. Well, since it is early morning in China, I think we will move on to Suhung's talk. Thanks again, Paul.

Paul Adams:

The best case is a group of no less than four people working on a module since there is peer learning
Thank you all.