

Drew Tenczar

Ms. Nelson

Environmental Systems

12 October, 2016

IA Environmental Systems Final Lab Write-Up

Topic/Problem: The Earth's natural resources are quickly dwindling and global warming is on the rise

Background: ^{the} There's earth's natural resources are running out. In a study carried out by the World Wildlife fund it was said that, "the human race is plundering the planet at a pace that outstrips its life, ...extra planets will be required by the year 2050 as existing resources are exhausted," (1). People need to be aware that almost everything on earth is finite and they need to pay attention to the everyday alternatives. In addition to that the Union of Concerned Scientists add, "cars and trucks account for nearly one-fifth of *all* US emissions, emitting around 24 pounds of carbon dioxide and other global-warming gases for every gallon of gas," (2). Not only are we running out of resources, the resources we use are hurting the environment by causing global warming ^{to other pollution}

Our experiment is determining what type of attitude our classmates have toward the environment via a survey. We are also correlating the results we get in our surveys to the classes that each student is taking. We will be taking students from Computer Science, Environmental Systems and DECA. From our results, we will see if students view the environment from a mostly Anthropocentric, Technocentric or Ecocentric lens. People who think Anthropocentrically believe that nature and animal were made to benefit humans and in making environmental laws and conserving resources would solve our problems. Technocentric thinkers believe that it doesn't matter how we use our resources because technology will be able to solve the problem eventually. Ecocentric thinkers believe that nature is the center of our existence as well as everything has a right to live. They also believe the earth is a living organism. Using that we can determine the actions we need to take in order to improve our issue and slow down global warming.

Research Question: Does our outlook on the environment vary based on what classes we take?

How it connects: Our issue connects to the research question in that our attitude towards something has a large impact to how we treat it, so if many people have a bad outlook on the environment, that type of thinking is what needs to change for our ^{env} problems to begin getting better. If we taught all humans to make a smaller ecological foot print by doing things like carpooling and taking shorter showers, the ^{env} problems would get smaller. This survey can help us identify these problems, and begin taking steps to fix them.

Anthro, Techno, ew

DECA, Comp. Sci.,
env. sys.

Be specific
focused.

good

	Named Variable	Units	Equipment/Measure used	Justification
Independent variable	The class that each student is taking (Deca, Comp Sci, or EVS)			We have business, technology and environment in our experiment
Dependent Variable	The results of the survey taken by the students			The survey results will indicate a student's outlook on the environment
Controlled Variable	School where participants are found (skyline), Classes the students take (comp sci, deca or EVS) Survey taken			Makes the experiment easy to be replicated

Ethics: Students names will be kept confidential in our study

Materials:

- A device that can reach the internet
- Google survey

Procedure:

1. At Skyline, email 100 students that participate only in computer science, 100 students that are only in Environmental Systems and 100 students that only take DECA
2. In the email, ask each student to take our survey about the environment
3. Look at and analyze the results of the survey
4. Look at things that hurt the environment and teach an eco-friendlier solution

Reason for using our type of sampling:

We decided on choosing who our samples are due to the fact that if we chose random people, we'd have no way to justify the answers that they gave us without knowing more about them. With the way we choose students, we get to see all types of thinking and hopefully we will see a correlation strong enough for us to identify a solution to any problem that we find.

By why Comp sci., why Env. Sys. & why DECA.

Why we chose skyline students

We chose to do our study at Skyline because they have a DECA, Environmental Systems and a Computer Science course. Those classes were most important to have because they represent each view on the environment (ecocentric, anthropocentric and technocentric). Also, since we were doing this study for our class, it made sense and was very convenient to conduct the study in a local place that we are familiar with. We chose to sample 100 students for each class because that was what we felt would give us the most authentic data. If we had used less students, each survey would have had a bigger impact on the data, including outliers. Using more than 100 would have been almost impossible due to the number of students at skyline that take each class.

good.

good.

Research data graphs:

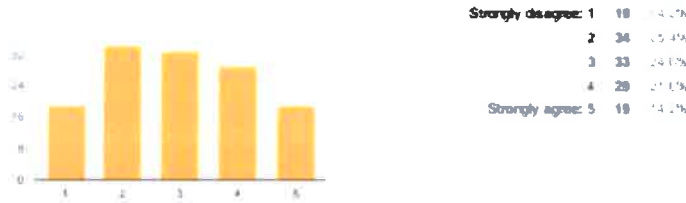
Environmental systems survey results:

Summary

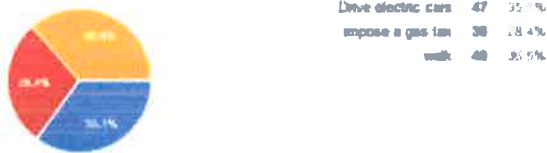
Which of these classes are you currently enrolled in?



Economic growth is more important than environmental preservation.



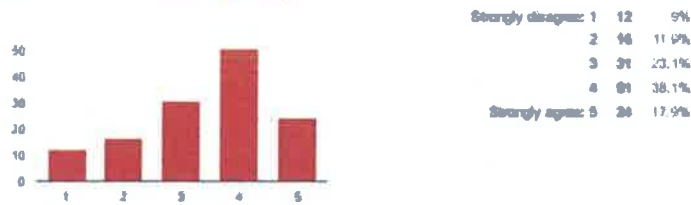
What is the best way to solve air pollution?



Which form of transportation would you prefer to get to school?



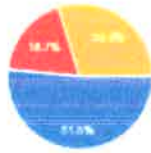
Ecology and nature are central to humanity.



Do you use reusable container at lunch?

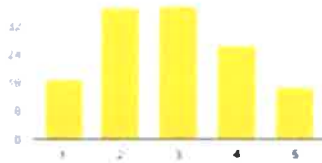


Do you use reusable water bottles



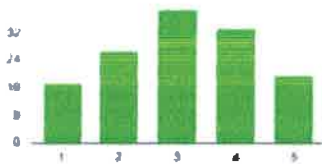
yes, always	88	51.0%
no- never or very seldom	25	14.7%
sometimes	40	34.0%

Technology is the key to solving our environmental problems.



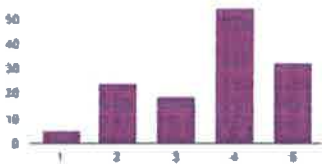
Strongly disagree: 1	17	12.7%
2	37	27.0%
3	38	28.4%
4	27	20.1%
Strongly agree: 5	16	11.7%

Life is better with more possessions



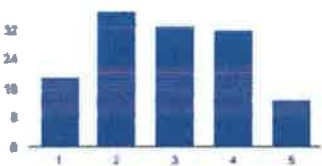
Strongly disagree: 1	17	12.7%
2	28	20.4%
3	38	28.4%
4	33	24.0%
Strongly agree: 5	19	14.2%

It is important for the government to focus on environmental issues.



Strongly disagree: 1	6	4.7%
2	26	19.0%
3	19	14.2%
4	54	40.3%
Strongly agree: 5	32	23.9%

We should be able to use our natural resources unhindered by laws in order to make money.



Strongly disagree: 1	19	14.2%
2	37	27.0%
3	38	28.4%
4	38	28.4%
Strongly agree: 5	13	9.7%

What kind of Christmas tree do you have in your house each holiday?



Real tree	84	47.8%
Plastic tree	64	40.3%
None of the above	16	11.8%

Table 1:

Analysis of Environmental Systems survey *Multiple boxes could be checked if survey results were within 5% of each other

good.

Question	Ecocentric view	Anthropocentric view	Technocentric view
Economic growth is more important than environmental preservation.	1	1	0
What is the best way to solve air pollution?	1	0	1
Which form of transportation would you prefer to get to school?	0	1	0
Ecology and Nature are central to humanity.	1	0	0
Do you use a reusable container at lunch?	1	1	0
Do you use reusable water bottles?	1	0	0
Technology is the key to solving our environmental problems.	1	0	0
Life is better with more possessions.	0	1	0
It is important for the government to focus on environmental issues	1	0	0
We should be able to use our natural resources unhindered by law to make money.	1	0	0
What kind of Christmas tree do you have during the holidays?	1	0	0
Total:	9	4	1

DECA survey results:

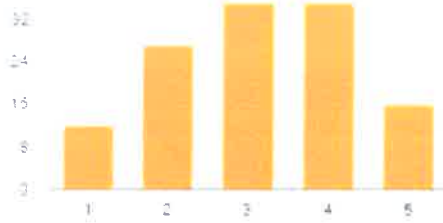
Summary

Which of these classes are you currently enrolled in?



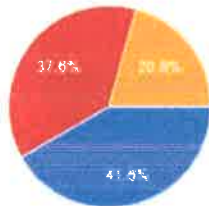
Computer Science	10	8%
Environmental	0	0%
DECA	123	98.4%

Economic growth is more important than environmental preservation.



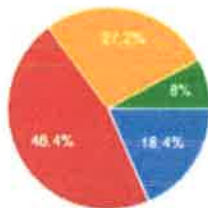
Strongly disagree: 1	12	9.6%
2	27	21.6%
3	35	28%
4	35	28%
Strongly agree: 5	16	12.8%

What is the best way to solve air pollution?



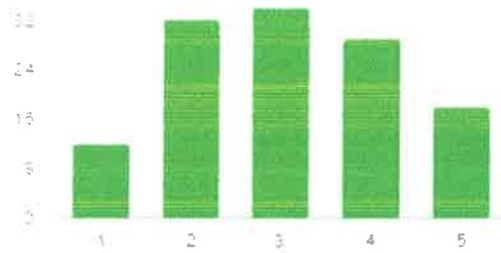
Drive electric cars	52	41.6%
impose a gas tax	47	37.6%
walk	26	20.8%

Which form of transportation would you prefer to get to school?



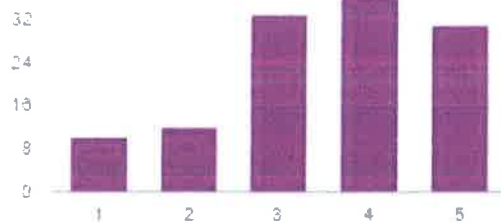
Bus	23	18.4%
Car pool	58	46.4%
hoverboard	34	27.2%
walk	10	8%

Life is better with more possessions



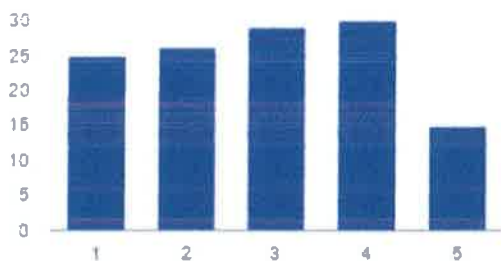
Strongly disagree: 1	12	9.6%
2	32	26.6%
3	34	28.2%
4	29	23.2%
Strongly agree: 5	18	14.4%

It is important for the government to focus on environmental issues.



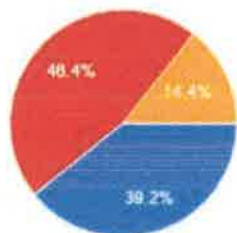
Strongly disagree: 1	10	8%
2	12	9.6%
3	33	26.4%
4	39	31.2%
Strongly agree: 5	31	24.8%

We should be able to use our natural resources unhindered by laws in order to make money.



Strongly disagree: 1	25	20%
2	26	20.8%
3	29	23.2%
4	30	24%
Strongly agree: 5	15	12%

What kind of Christmas tree do you have in your house each holiday?



Real tree	49	39.2%
Plastic tree	58	46.4%
None of the above	18	14.4%

Table 2:

Analysis of DECA survey *Multiple boxes could be checked if survey results were within 5% of each other

Question	Ecocentric view	Anthropocentric view	Technocentric view
Economic growth is more important than environmental preservation.	0	1	0
What is the best way to solve air pollution?	0	1	1
Which form of transportation would you prefer to get to school?	0	1	0
Ecology and Nature are central to humanity.	1	0	0
Do you use a reusable container at lunch?	1	1	0
Do you use reusable water bottles?	1	0	0
Technology is the key to solving our environmental problems.	0	0	1
Life is better with more possessions.	1	1	0
It is important for the government to focus on environmental issues	1	0	0
We should be able to use our natural resources unhindered by law to make money.	1	1	0
What kind of Christmas tree do you have during the holidays?	0	1	0
Total:	6	7	1

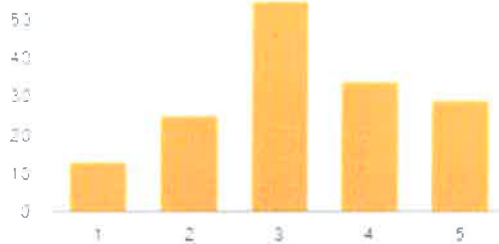
Computer Science survey results:

Which of these classes are you currently enrolled in?



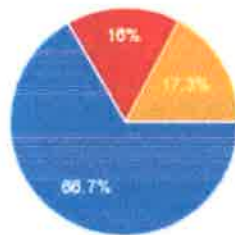
Computer Science	148	94.9%
Environmental Systems	8	5.1%
DECA	4	2.6%

Economic growth is more important than environmental preservation.



Strongly disagree: 1	13	8.3%
2	25	16%
3	55	35.3%
4	34	21.8%
Strongly agree: 5	29	18.6%

What is the best way to solve air pollution?



Drive electric cars	104	66.7%
impose a gas tax	25	16%
walk	27	17.3%

Which form of transportation would you prefer to get to school?



Bus	25	16%
Car pool	57	36.5%
hoverboard	57	36.5%
walk	17	10.9%

Overall analysis of data and Conclusion:

For the most part, the data was found as we may have expected from the start with only a few small exceptions. One trend that I noticed that I wouldn't have expected to see was the lack of Technocentric views exhibited by computer science students. I thought that Technocentric views would be extremely popular for computer science students and now seeing the data surprises me. I also noticed that the environmental systems survey and the DECA survey went the way we had expected. Environmental systems students are usually generalized as having ecocentric views, and that generalization wasn't incorrect as we saw that they had that view for many questions on the survey. The DECA results were very similar in that they had anthropocentric views that we would've expected, but they were very close to being ecocentric as well and that was very surprising. Ecocentrism was the dominating viewpoint among Environmental Systems students with it getting nine votes compared to the Anthropocentric's four votes. However, in DECA, anthropocentrism garnered seven votes, while ecocentrism finished a close second with six votes. Another pattern I noticed was the lack of overall support for Technocentrism, it came in last in all three surveys and only got five votes in total. After analyzing the data and the trends and patterns it produced, I have come to the conclusion that Skyline High School has almost an even split between ecocentric and anthropocentric viewpoints. Reasons for an anthropocentric result may be that we are a generally wealthy community that doesn't have a large struggle for resources. It's easy to feel like our supply of food and other resources are infinite because of how accessible they are for us. In reality there are countries where food is very scarce and people die of starvation every single day. There are even places in our own country where people struggle to get food and other crucial resources. For our ecocentric views, we live in such a beautiful place in which we are surrounded by nature. What was once a place filled with forests, it seems that a new neighborhood is cutting into the nature around us almost every other week. People not only at Skyline are beginning to take notice and want to take steps to slow down how quickly nature's been disappearing.

Discussion and Evaluation:

Base on the conclusion I found, I'm unsurprised that our natural resources are dwindling and the global warming is rising. Our school has about 50% anthropocentric views and anthropocentric thinkers believe that the earth has unlimited resources. These beliefs are what's making this a large issue in today's world. We need to sway the population into a more ecocentric way of thinking to begin solving the problem. In our study we excelled in finding our number of participants and had many more people take the survey than what was needed to complete the study. I also thought we used a very effective method in picking our participants to give a look into all three ways of thinking (anthropocentric, technocentric and ecocentric). Although our method in choosing people to participate was effective, in the future it may be better to have a more organized way to find participants rather than having to track them down outside of class. All in all, the experiment was a success and we found data that could lead us into further understanding why humans are having these issues in today's world.

*Suggestin
for improving
this.*

*Weakness = did not control for religious, family, media
inputs therefore we can't say it is just the classes
students take.*

Possible strategies for a future study and solutions:

In a future study with the same research question I would go to the specific classes of students we're studying and have them take the survey during class, and take measures for less bias to be shown among participants. The reason for having the survey done in class is that it would help and cut down on student inadvertently taking the survey more than once. For example, a student could get asked by five different friends to take the survey and if he does it, the data would be affected. Keeping the study more private is another strategy that would help keep our variables as controlled as they could possibly be, while getting the best data. If we asked students to take our survey without having them sign a confidentiality agreement they could easily tell their friends about the survey and could be biased towards it. Once again, our data would be majorly affected. To solve the problem, we could put a question at the beginning of the survey in which the survey taker agrees to keep his answers confidential until we are done taking surveys and have found our results. Based on the conclusion I found, a solution to our study would be tough. The best way to help solve the problem is education. To change the way people act, we have to give them a good reason for changing. Simple things like carpooling, using reusable water bottles and using reusable plastic containers at lunch would be great progress in making a healthier Earth. By educating everyone in every class about the importance of the environment and their impact, we could start to change Skyline from a split ecocentric and anthropocentric community to an almost fully ecocentric thinking community.

goes
in
discussion
or
evaluation

Weakness to this solution?

Works Cited

Burke, Jason, and Mark Townsend. "Earth 'will Expire by 2050'" *The Guardian*. Guardian News and Media, 07 July 2002. Web. 20 Sept. 2016.

"Car Emissions and Global Warming." *Union of Concerned Scientists*. N.p., n.d. Web. 20 Sept. 2016.