Environmental Awareness Game Project

An interactive and unique approach to help eliminate society’s ignorance on important environmental issues they face on a daily basis.

Tags: climate change; global warming; air pollution; greenhouse gases; scientific literacy; science game; educational games

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Summary
With our planet continuing to warm, the issue of climate change elevates in severity. Much of society remains ignorant to the actual science and base their opinions off misinformed forms of social media. Unfortunately, the public remains ignorant to many other environmental problems such as air pollution and energy use. The goal of this project was to develop an interactive approach that would allow the public to understand current environmental issues in an effort to reverse their harmful actions. We came up with a concept for an environmental awareness game that would allow individuals to be placed in real-life environmental scenarios. The game(s) would ultimately raise the level of scientific literacy and increase the public’s awareness of the damage being done to their planet.

Video Link: http://youtu.be/pUNphc4Iq_g

The Other Environmental Problem: Am I Really Harming My Environment?

We as humans have grown into the dominant species of our time. With our presence and all of our societal development as a species we have greatly altered and influenced the world around us. It would be controversial to argue how negative the impact we have caused is but it is clear that there is some human activity that is not healthy for the environment in its current state. Specific issues will be addressed later in this paper. In recent years there has been a strong “go green” push as we have become more aware of what our industrialized world has done. Some people have a great degree of respect and liking of the natural world and enjoy it enough to work toward conserving it on their own. There are many other people, however, that do not put such a strong emphasis on striving to keep their impact low. This type of behavior may originate from a few different places. (JM)
Differences Between Demographics Amongst Environmental Awareness

Getting people interested and involved in trying to preserve the environment also seems dependent on the type of demographic that a person may fit into. One broad example of this would be the differences of how to encourage older versus younger aged people to both want to reduce the impact they have. Or even better than just trying to reduce their own personal impact, but also get involved and speak out for bigger societal environmental issues. Many teenagers and young adults have different priorities than do older adults and often get information from different sources or by different means. It will take a different approach to try and inform younger people of environmental issues in such a way that they will realize and feel that it is truly necessary to take action.

Younger populations do not typically get their current news and information from the more traditional forms of news that older people sometimes do. Instead of newspapers or television news networks they will learn about issues via the internet or just by word of mouth from others close to them. The internet is a good source of information about any topic and is very good for environmental issues. The internet has allowed organizations to create stronger networks and forms or communicating than they ever have before. More about this is discussed later. For younger people that do not have a strong interest in the environment in the first place it is hard to get them to research into an environmental situation on their own.

Do We Possess the Willingness to Change?

Some types of people have the frame of mind that can make them stubborn to change things even if the old ways are recently discovered to be damaging in one way or another. One example of this is in history was with the leaded gasoline issue. The effects of lead in gasoline wasn't known until after it was already gone because what caused the switch to unleaded gasoline was not due to the fact that it was known to be hazardous to health. The idea had been proposed several times before that burning gasoline with lead in it was bad because it put the dangerous heavy metal into the air for people to breathe. The idea was regularly pushed aside because leaded gasoline was working so well in cars. It was not until 1975 when the catalytic converter was introduced to new cars that things finally changed. The catalytic converter would not function with leaded gasoline so within a very short amount of time all gasoline was switched to unleaded to accommodate the new regulations. Leaded gasoline would have likely stayed in use for a while longer had not the catalytic converter changed it when it did.

Willingness to adjust our life styles due to new science and information is one of the big issues that face us today. The inconvenience of having to change our behavior for some foreign sounding science is not something people take lightly. If you look at the global climate change situation, one can find many examples of how once people become accustomed to a new convenience it is very difficult to break people from that even if people are made aware of what
problems their activity is causing. A long term example of this is with public transportation. In America our society has developed in a way that we are dependent on almost everyone having independence with their own car. When it started to become realized that everyone owning their own car and using it as their main means of transportation was becoming a problem not just for the environment but also because of roadway congestion issues, it was already too difficult to make any easy fixes. There were attempts at encouraging people to carpool at different times in the past but one that still remains in most visible was the creation of carpooling lanes. While some ideas worked, it has always been more convenient to not be dependent on others when one is trying to get where they need to be. Trains would be a good solution but they add to many inconveniences to people's days that they are not close to being considered practical by most people to use as everyday transit.

Another different example of how inconvenience can have such a strong hold on people is in the topic of recycling and littering. The next time you go out anywhere, to the store, to work or to school just take a look around on the side of the streets or pretty much anywhere. What is alarming is that there is garbage almost everywhere. It can be said that some of it did not get there intentionally but a good amount of it was thrown carelessly away in one for or another. What is strange is how easy it is to avoid littering. If someone has garbage it is not that difficult to hold on to it long enough to find a garbage or recycling can to properly dispose of it yet despite this people still do not find it worth it. It is also interesting to point out that people that some people will not even take the time to recycle something plastic if it's just easier to throw it away with everything else. This is true even if the recycling collection bin is directly next to the garbage bin.

**Unattractiveness of Environmental Issues**

Another related issue is that for many people, being environmentally responsible is not on the top of their priority list. This is very common stand point and its understandable to one degree or another. Some people are just very busy so voluntary investment of their own time to read up on an environmentally related issue is just not one of the things they will do. The problem is that a large percentage of the population gets their information from quick sources that like the news, whether that be via television or newspaper. Regardless of which of what the source is the information is typically given in a compressed story only a few minutes long. The source of this information might be biased also, which for environmental issues has always been a problem because of the fact that issues dealing with the environment are almost always controversial. And the information people get is not always biased in same direction.

What makes things more challenging is that people are aware of biases when they are learning about a new topic and it can make people skeptical or hesitant about what they hear or read. Or if an issue is not biased often times people will not trust the science because they have seen it make a claim about one thing and then do a complete turn around on it self. So if it can be so unpredictable sometimes why should someone go through all the trouble to change their
behavior if they might later find out that it was not necessary. To show an example of this but not really relating to the environment is what seems to happen often within the health and food sector. The situation between butter versus margarine was a good example of how science flip-flopped on itself between two vastly different stances. Fat suddenly became the enemy one day so margarine had become the new healthier replacement to butter. Then it was realized all the worse things for the body that were present in margarine and that the fats present in things like butter and olive oil are not bad for you but are good for you in moderation.

These kind of results while good that we are learning are dangerous in the public eye because they create this lack of trust to science, when in reality modern science is learning to avoid outcomes like this and reduce false results. It is still a problem that needs to be addressed with more care in order to avoid creating less trust.

“Green Fatigue”

Another much more recent issue facing environment awareness and its many goals is the concept that there seems to be a trend towards what is sometimes called “Green Fatigue.” This phrase is describing the idea that the entire environmentalism movement towards being more green is starting to wear people down. Some people are getting tired of the inconveniences of being more environmentally friendly as discussed earlier even if they may be smaller. Other people are getting “green fatigue” just from constantly hearing about it in the media and are just getting tired of all the pushing and pressure it is causing. For these people they might not be strongly partaking in any environmental conservation but the effect can still be there. In some senses this may show that the movement towards environmentalism is at its strongest but it is also has some bad signs to it as well. Some people are tired of the hardcore environmentalist type people that are pushing it on everyone else as if it is the only thing important in life. Regardless of how important environmentalism is these sort of tactics or auras that environmental organizations have are not working to their advantage beyond the people that already want to be involved and help.

For the people less interested in environmentalism, all the organizations and groups like Green Peace, Millions Against Monsanto and the many addressing climate change, are way to extreme or “liberal” for their own tastes. When these groups protest or stand up for something they believe in they are often looked at as the minorities and the crazy ones that care too much. Let’s just say that Green Peace was holding a protest for something that everyone could agree with them on, there would still be a large number of people would turn away from helping because of the association they would have with a group that has been known to have done some pretty extreme things in the past. The attitude that some environmental organizations have can just be the reason a good number of people do not get involved.

How to Get the Word Out
There are a large number of environmental issues that face human beings that need to be addressed in our world's society today. Most of these problems need the majority of the population to cooperate in order for a meaningful impact or change be made. There is a problem currently with how people are informed and educated about such environmental issues or situations. The ways that people become get their information is dominated by the media whether that is through televised news shows, advertisements or printed articles in newspapers or magazines. We will work through all the current means that people may learn of issues that involve environmentalism and why they typically do not work, at least not for the majority.

Another tool that has greatly helped and grown these types of non-governmental organizations (NGOs) is the use of the internet. They can communicate and organize all over the world and it has created some more interest from a broader spectrum of people who want to contribute but can not commit as much as people fully involved in the organizations. The online sector of such environmental groups has allowed everyday people to sign petitions and research and spread the word about the world's environmental problems.

The internet is likely the greatest tool for informing people and making them aware of such problems but it still does not reach everyone to achieve the full potential and have the impact that some issues really need. The green fatigue problem can still continue to the online world and spread there as well. In addition there is always still the issues that were discussed earlier including people's lack of time or concern for such things. Most attempts at educating people like this will not work because there is simply nothing that will interest them if you give them something that is dry and applies too much pressure towards them.

The Issue: Anthropogenic Actions are Causing Environmental Problems to Increase and Intensify

(RD) As we enter the year 2012, the world continues to possess many problems that exist throughout numerous societies. Issues ranging from economic meltdowns to world hunger plague the entire earth and continue to worsen. However, no issue comes close to any environmental issue we face. Think about it like this- a problem with the economy can eventually be solved eventually solved through the collaborative efforts of policy makers and the government. But let’s look at an environmental issue such as global warming, or better phrased, global climate change. If we continue to deplete our earth’s natural resources uncontrollably and continue to pollute the atmosphere with no concern for the future condition of our planet, there is no solution. There is no solution because the one earth we have will be destroyed and gone forever. Can we as a society let this happen?

Before addressing the many environmental issues we face, we must learn why humans are allowing the earth to degrade right in front of their eyes. Also, we cannot attempt to educate the public without first understanding their minds and knowledge about the environment.
Ignorant actions from people of all ages are essentially the reason why lack the proper concern for our environment. No matter how well information is transferred to them, they choose to disbelieve the fragility of our earth. A big part of this lies in the fact that noticeable changes will be seen in the distant future, therefore limiting one’s concern in the present. One-on-one education is clearly not working. Effort needs to be focused on creating a way to change the American mindset on the environment. A different, yet unique method needs to be sought out in order to achieve and solve the overall problem. One must first learn of the environmental issues that they are contributing to the most and adapt an overall awareness of each topic:

1. Global Climate Change

Over the past few decades, the issue of global warming, or as most scientists call it, global climate change, has caused great controversy over its severity, reality, and intensity. It comes as no surprise that as our population continues to grow, our reliance on fossil fuels such as coal and oil will also increase. Consequently, more emissions are being pumped into the atmosphere at an unseen rate for the history of our earth. Greenhouse gases function by allowing shortwave radiation from the sun to pass through, but prevent longwave radiation from the earth from escaping into the upper atmosphere. This is why the excess amount of greenhouse gases can be attributed to heating up our earth, mainly due to more radiation being reflected back to the earth. This is where the uncertainty arises- are human outputs the main reason for this warming or is it some natural process the earth is experiencing? Meteorologists as well as environmental scientists possess scientific facts, through extensive research and experiment, and conclude that humans are undoubtedly the ones to blame and how action must be taken immediately to remain sustainable for future generations. But skeptics are still not convinced; they claim the earth is naturally going through a warming stage which could be followed by a cooler one and that the effects won’t be seen for quite some time so we don’t need to worry.

The main misconception about climate change is the phrasing, “global warming”. After experiencing a harsh winter with above average snowfall or a summer with unseasonably cool temperatures, one will question the validity of an actual “warming”. However, the idea of a warming is very big misconception. The earth itself will go through periods of above and below average periods. The big picture is focusing on long-term averages of these periods, rather than individual events. So overall, the planet is warming and is continuing to warm.

Humans have a general sense of how they are contributing to the warming, but that’s about it. A typical mindset revolves around the idea of “I drive my car and the emissions cause greenhouse gases, which are causing warmer temperatures”. While this may be true, it is very incomplete. Warmer temperatures are proving to have a tremendous impact on the climate. Warmer temperatures are melting sea ice, causing higher sea-level rise as well as a freshwater intrusion in the salty oceans. This combination of fresh and salt waters have a direct impact on oceanic circulations which coincide with atmospheric circulations and our weather. Numerous studies have shown that warmer temperatures are leading to more frequent severe storms.
(thunderstorms, tornados, winter storms, etc.), as well as their intensities. This also includes tropical cyclones (i.e. hurricanes). As one can see, a warmer planet has a more significant impact than one initially thinks. In essence, their carbon footprint just grew a few more sizes.

One of the major perceptions of the reality of global climate change lies within the impacts felt in the present or future. In today’s society, we are heavily present-oriented for which we are only concerned with what is currently happening and completely disregard the potential impacts in the future. The basic assumption in the context of global climate change merely states that if our earth and its inhabitants are not presently undergoing dramatic changes then why should we believe that global warming is a serious issue.

Perceptions on the reality of global warming create the possible linkage of human activity to global climate change. One who disproves the existence of global warming usually backs up their case by arguing that the earth is going through a heating phase, which could easily be followed by a cooling off phase (historically, the earth underwent a mini ice age about two decades ago). These people argue that human outputs of greenhouse gases have no relevance on the changing climate because they claim it is a natural process. However, scientists have concluded that the earth has never experienced this large rate of warming in history. We see how the perceptions of natural scientists greatly differ from the public at large who believe that global warming is a false problem.

But can we really blame the public’s ignorance? Environmental education barely reaches individuals who usually seek out the media for answers that are not much help either; media tends to bypass stories that last a long period of time, global warming being a perfect example. Additionally, scientists will clearly state the current changes in the climate, as well as numerous statistics, but they fail to address how we humans can help cease the problem. Individuals are distracted by their preconceived notions centering around their present-oriented beliefs, rather than the future which we should consider on a daily basis. To improve our interaction with our environment, we must bridge this communication gap between natural scientists and the public by addressing all problems to avoid unwanted or unintended consequences. Bridging this gap would make the public more aware of how their daily actions are causing the planet to warm as a whole.

2. Energy Consumption

As our population continues to grow, the amount of resources we have decreases. This is something that a majority of people do not consider when doing everyday tasks. Selfishness accompanies people’s ignorance as they continue to deplete our fragile supply of resources. Just like their mindset on climate change, they too are only concerned with the present; so if they have enough resources for themselves in the present, they are content. They too lack any idea of the impact their actions will have on our future supply of resources. What goes through our mind when we think about energy? Clearly, not what we should be thinking about.
Thoughts like “I wonder how energy I would save if I turned my light off when going out” or “I wonder how much gas I would save by walking to class instead of driving my car” do not cross enough the minds of enough people, even though it should be instinctual at this point in history. Since we do not see any harm in obliterating our resources such as the burning of fossil fuels by transportation uses in the present, we choose not to be concerned with the availability of future resources for other generations. What will make individuals more aware of our fragile supply of natural resources?

The world as a whole has made significant progress in making more alternative energy options for the public to take advantage of. However, most of these options deem to be either unpopular and on the costly side. For example, an electric car is both “unattractive” to the average motorist; not to mention is carries a big price tag, something not everyone can actually buy. Renewable energy resources such as solar panels have spread rapidly, but the costs/installation of them turn away potential customers. Just like the issue of global climate change, we need to change people’s view of the environment into a future-oriented lifestyle.

3. Pollution

If we are not wasting resources, then we are damaging them; which is just as bad. Whether it be in the air or even in our waters, pollution exists due to a lack of knowledge about the effect we have on our environment. We burn fossil fuels every day when driving as gasoline is being burned; as long as we get to where we have to be, there are no other concerns. The ignorant public fails to realize the amount of harmful and toxic pollutants, such as carbon monoxide and nitrous oxide, that are being emitted into our atmosphere- the same atmosphere that we breathe in air from. We are just as irresponsible for our actions when it comes to water pollution. Companies dump their wastes wherever they please, yet are oblivious to the fact that they can be polluting waters where drinking water is obtained or where vast marine life exists.

Unlike climate change and energy consumption, the effects of pollution occur much sooner. Essentially, the effects are seen shortly after the present moment. Even when the effects are oriented in the near future, we still have no concern regarding environmental quality from the actions we participate in. This shows that humans are not only present-oriented, but they show no care for the environment in which they live in.

It is evident that the current ways of transcribing environmental issues into the minds of the public are not working. The ignorant and selfish public do not wish to be concerned with these issues. An entirely new way of communicating with the public about environmental problems needs to be adapted and it needs to be adapted before it is too late. A unique and interactive approach, as opposed to a one-on-one technique, should be utilized in an effort to change the mindset of people against the environment.

Our Solution

The improvements in technology over the past decade have had a tremendous impact on
the way in which we communicate ideas and knowledge. Physical teaching, such as the use of books and a one-dimension teaching approach simply cannot compete with the digitalized techniques of modern teaching. Nowadays, a student can learn all the planets or their times tables while engaging in a fun and entertaining method; the student is learning without even realizing it. This modern approach of teaching has to be implemented not only immediately, but on issues affecting the one thing the entire world shares- the environment.

The hardest part to this solution is generating a technique that not only provides accurate information, but doing so while maintaining the interest of the learner. This triggered us to come up with a concept for a game that would capture one’s interest by placing themselves in the game itself. Our game would place the gamer in real-life scenarios regarding actual environmental issues. In a sense, the individual would be in their own reality game and be exposed to current issues that are affecting them and the entire planet. What better way to teach oneself about environmental issues than to be places inside an actual situation?

Overall, the main goal of the game is to increase scientific literacy among those who are currently ignorant to the cold, hard facts about our environment. This will first promote the understanding of fundamental concepts about the environment, such as defining a greenhouse gas or learning about where our energy comes from. Once having a basic understanding of key concepts, the individual will then learn about current solutions and/or techniques that are currently being practiced to mitigate the negative effects on the environment. After this, the individual will essentially place themselves inside the game as they will be given a current environmental scenario for which they must make knowledgeable decisions that contribute to a healthier environment. Choosing the right decisions will make the individual more likely to replicate those decisions in real-world situations. Incorrect choices will be immediately countered by statements explaining why that choice was incorrect and harmful to the environment. The gamer would not be able to advance in the game until they make the correct choice. Both choices will stick in the minds of the individual and it will trigger them to make those choices in real life.

We also decided that instead of having one, uniform game with a bunch of different scenarios, that we would have a number of “mini-games” that would present many unique approaches. For example, we will have a blend of games involving decision-making, as well as games involving more of one’s reflexes on the basis of a touch-screen interface. The main reason we decided to do this was because people frequently get bored of the same games, especially if they are of little interest; having many different types of games would help sustain the interest level of the gamer. We would also have many updates within the overall game itself, which would continually release new games that users could easily download and enjoy playing. The updates would consist of new games based off of arising environmental issues. Examples of some of the games will be discussed in the next passage.

Mode of Transportation Game

Whether one chooses to believe this or not, global warming is greatly influenced by anthropogenic (human-induced) actions. In fact, about 99% of scientists believe that this warming we are currently experiencing is *unnatural* and is due to human impacts. A big part of
this unnatural warming is due to the burning of fossil fuels, especially transportation. The problem that arises is the ignorant choices we make regarding daily modes of transportation. We frequently choose the vehicle that will get us to our destination the fastest with little concern of how much waste is being deposited into the atmosphere.

The transportation game will present the game with various modes of transportation (i.e. car, bus, bike, walking, etc.) and a destination of various lengths. The individual would then be asked to choose the mode of transportation they would like to take to arrive at their destination. However, the right choice lies in the answer that produces the least amount of emissions into the atmosphere. If they choose the right answer, they will be presented with a statistic which would explain how much fewer emissions are being put into the air, as well as other benefits to the environment. A wrong choice will be supported with facts stating how said mode of transportation would have a negative impact on the environment. Information relating emissions and greenhouse gases will be tied into how the atmosphere warms as a result. We were thinking of including some sort of animation of this process, immediately after their responses. As most games include advertisements between levels/moves (especially phone games), we would replace these with valuable information regarding the environmental issue and/or show a visual aide. This would have a big impact because the gamer will still be focused as they are in the middle of playing their game.

**Air Pollution and Electrostatic Precipitator Game**

(JM) This mini game is based directly off of how a real electrostatic precipitator (ESP) works. An ESP is a machine that is designed to clean solid particulate matter from the air at high efficiencies. They are often used in coal-burning power plants to remove soot and smoke particles from the air after combustion.

How the Game Works:

The basic premise of the game is that the player will have to “charge” the particles that are coming through the ESP on the screen so that they can be captured to clean the air. Below is a simplified diagram of how an ESP works.

![Fig. 1: Top view of an ESP. (http://web.njit.edu/~avs9/Procedure%20Draft%20Final.htm)](http://web.njit.edu/~avs9/Procedure%20Draft%20Final.htm)

The game's dynamics is designed for a touch screen. The view of the game would be an
overhead view like the image above but would be a closer view showing only two discharge electrodes. In a real ESP, the discharge electrodes create an electric field that can transfer negative charges to particles suspended in the air. The walls of the ESP are positively charged or grounded so once there is a strong enough negative charge on a particle the opposite charges attract and the particle sticks and collects on the walls. The object of the game would be to collect the particles by applying charges to them to get points and try to let as few particles through the ESP as possible. There are two alternative game rules that can be tested to see which design results in the most entertaining game and flows the best.

**Concept 1:**

In the game, as particles move onto the screen, the player would have to touch the screen and drag their finger around and over the particles to place the negative charge on them. The player can swipe over multiple particles at the same time without lifting their finger. The more particles the player swipes, the higher the score will be (works as a multiplier). The challenge is that there is a limited amount of time that is allowed to connect the same finger swipe between particles. This is to create a more strategic element to the game so that the player cannot just keep their finger on the screen the entire time. The particles that you swipe across are not considered charged until you lift your finger from the screen. If you begin to “connect” multiple particles in a swipe, and one of the particles passes off the screen and disappears, then the entire connection is lost and lifting your finger will not charge any of the particles. The player would have to start over to create new connections. The game is played in timed rounds so that they keep playing until the timer runs out and then there is a score and the percentage of particles captured shown the player. There are multiple rounds and each round gets progressively more challenging by either changing the speed of some of the particles and/or the number of particles that come onto screen at any given time. At the end of all rounds a final score is calculated.

**Concept 2:**

This version works on the same structure as the first, except for how the player applies charges to the particles in their ESP. Instead of swiping over multiple particles to get more points, the player taps the particles and there is a small countdown timer in which they try to tap as many particles as possible to build up a point combo multiplier. As before the particles are all charged at the same time but instead of the charges being applied by lifting the finger, there has to be a new way to activate the charging manually by the player. Since the game does not know if the player wants to try and tap and add more particles to the combo, the player must tap the discharge electrode in the middle of the screen (which will operate as a button) before the charging timer runs out. If the player fails to press the electrode button the combo will be lost and the player must continue and start a new combination timer. This version will still work on the basis of playing multiple timed rounds.

**Renewable Energy – Solar Farm Game**

This idea of this mini game is to demonstrate the concept of getting electricity from the sun using solar panels. The basic idea of the game is that the player will have a number of solar
farms to try and keep open to direct sunlight as much as possible, to keep people whom are getting the power as happy as possible.

How the Game Works:

This game, like the others will be based on being used on a touch screen. The view for the game will be a directly overhead bird's-eye view of a given area of land, somewhat like looking down at a satellite image. On the screen their will be multiple solar panel stations that can be seen on the ground. The premise of the game is to keep a certain level of electrical power production from the solar power stations during a given round of game play. Each approximately 2 minute timed round will represent a single day of time in the game and at the end of each round or day the player will be scored on their performance.

The challenge that the player faces is cloud cover blocking sunlight from reaching their solar power stations. The player has control of calling in aircraft that when directed will fly on screen and disperse the clouds in a given area to let more sunlight through to the ground. Although this is not currently possible in real life today, there is some science going on in weather modification going on but it still currently has a lot of controversial problems associated with it. In between rounds of the game, we will be able to provide pop-up facts reality and what sort of problems their currently are. The concept of cloud cover affecting solar power plants is a very real thing so the game alone will at least make people aware of the fact that weather in a given area is an important factor when considering using solar.

The clouds in the game will vary in thickness (the amount of light they let through), so it will add some strategic elements to the game for the player to decide if it is worth trying to clear the cloud. The clouds will move on screen and pass over the map view of the players area throughout the game. If the player decides to clear a cloud that is moving towards one of their solar stations, they will first place their finger on the screen at the location where the cloud will be removed and then drag their finger in any direction. By dragging their finger the game will create a straight line trajectory for the airplane that they are calling in. Once they like the flight path they created they can send the airplane in and it will follow the path and when it reaches the location it will “spray” a cloud clearing agent in that area. The airplanes can only be called in at certain intervals so the player has to decide if the cloud is worth clearing. The player also will have to use some timing in order to get the airplane to reach the cloud clearing “spray” area when the particular cloud arrives to that location they chose. The area that the airplane can clear of clouds is also designed to be a more oval shape, so the flight path that the player chooses will effect the orientation of that oval shape. Once an area of a cloud is cleared, the affected area will flow with the wind at the same speed of the clouds.

The game will progress and become slightly more challenging as player plays more rounds. In real atmosphere clouds at different altitudes can move in different directions, so this can be incorporated into the game to make certain days more difficult. The player can also be able to buy upgrades from money they make during the game play. The upgrades can give the player less time between airplanes and increase the cloud clearing area of the airplanes. The score is based on how much energy from sunlight the player gathers every round.
Progress

We plan to submit our proposal to the Rutgers Energy Institute’s Energy Contest, a contest that is looking for a project that would turn Rutgers into a more eco-friendly environment. We also plan to submit our completed proposal to the Rutgers Mobile Application Development team (RuMAD), a group that tries to create a new mobile application each month. Their most recent application was a study aid called “RUstudying” which is an application that creates mobile flashcards for studying purposes. We also look to submit our proposal to other computer programmers within the area, targeting those who have experience with making games. Our ultimate goal is to make a successful connection with a programmer who could develop and design our game from our proposal.
References

National Oceanic and Atmospheric Administration (NOAA)

Rutgers Energy Institute (REI)

www.realclimate.org
Letters to the Editor:

Reverse Global Warming
The Daily Targum: Letters To Editor
By: Robert D’Arienzo | Posted: Monday, April 9, 2012 12:00 am

The unseasonably warm winter New Jersey experienced this season elevates the debate of global climate change. However, the fact that New Jersey had its fourth warmest winter has done little to prove to students here at the University the reality that our planet is undergoing an unnatural warming. Unfortunately, climate change is but one of many environmental issues that students (and the population as a whole) are ignorant about.

Various forms of social media either misinform or do not inform at all on important environmental issues that affect everyone on a daily basis. Some of these crucial issues include climate change, air pollution and energy use. To get inside the minds of people and their thoughts regarding environmental problems is like trying to solve a puzzle with an infinite amount of pieces.

The current generation “Me” possesses a present-oriented mindset. “Why should I care about the environment if everything is OK now?” Our ecological footprints are becoming so big that even if we changed our mindset now and began to repair our planet, it might in fact be too late to fix. A different, interactive approach needs to be developed in order to change the way we think about global climate change, for the better of our planet. The earth does not have a “rewind” button, as much as we think it does.

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Published in The Daily Targum:
http://www.dailytargum.com/opinion/letters_to_editor/reverse-global-warming/article_a39f6dae-
Dear Editor,

I still find it difficult to see some people's lack of concern for our natural world, however I have to remind myself that this disregard is probably often brought about by a lack of being fully informed of environmental issues. Education of such issues to the public seems to be quite difficult to accomplish because people are simply not interested enough to research on their own and then take action towards reducing their impact. There has been the phenomenon of “green fatigue” for some which describes the tendency of people to become tired of hearing about and being environmentally friendly.

As a part of a class at Rutgers University, a fellow student and I have been trying to come up with a new way to keep scientific literacy and educate people about environmental problems. We decided to design a smartphone application game that needed to be both entertaining and informative at the same time. If it does not accomplish these two goals then we believe it is not really any better than what has already been done. We are still working on all the game dynamics currently but we will hopefully be able to get it to someone who can take our vision and make it real in the near future.

The natural world's balance I think is more precarious right now than most people realize and I hope that we as human's can find a better way to live before it is too late.

Sincerely,
Jeffrey Mart

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