

## From Scientific to Literary: A Viable Juxtaposition

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### INTRODUCTION

Carbon dioxide (CO<sub>2</sub>) lies at the heart of Earth's thermostat, which is a complex and delicate mechanism. It has a most important role in the maintenance of the temperature balance necessary to sustain life on this planet. As a waste product of fossil fuels which are used for heat, transportation, and other things that require energy, it is generated by almost every person on Earth. We create CO<sub>2</sub> every time we [exhale], use a motorized vehicle, cook, or switch on a light, and it stays around in our atmosphere for about a century. The amount of it in the air we breathe is on the rise at an ever increasing pace. (Flannery 5)

Global warming, one of the most controversial issues of the 21<sup>st</sup> century, challenges the very structure of our global society and is most concerned with the presence and increase of CO<sub>2</sub>. Most scientists temporize that this greenhouse gas, at the very least, significantly impacts the planet's climate. Unfortunately, this is not just a scientific issue. It encompasses economics, sociology, politics, and each individual's choice of lifestyle (Maslin 1). As Kenneth Cohen, Exxon's Vice President of Public Affairs, says, "Climate is changing. It's a serious issue." In fact, "Exxon Mobil has dropped any pretense of questioning whether global warming is real [and is] seeking to position itself as an active player in efforts to lower greenhouse gases" (Hays). This is a tack that critics feel more American corporations should adopt.

"Climate change is difficult for people to evaluate dispassionately because it entails deep political and industrial implications, and because it arises from the core processes of our civilization's success. This means that, as we seek to address this problem, winners and losers will be created. The stakes are high, and this has led to a proliferation of misleading stories as special interest groups argue their case" (Flannery 4). Corporate America is one of the major stakeholders, having a vested interest in this matter that cannot be ignored. Addressing it will have a huge effect on the way they do business and will impact their bottom line significantly. Is it any wonder that they hem, haw, and hedge when confronted with this growing concern? And, though we understand their position, can we afford to wait on them to accept the inevitable?

The environmental gurus of today have begun to imply that our time to effect a beneficial change in this matter is running out; therefore, we must consider if those with significant financial interests herein are really the ones who should determine if and when we act. There is more than economics at stake here. The environment of our planet may be the very thing now threatened. Surely that is a higher priority than economics? Our environment supports life on this planet. Conserving and protecting it is of the utmost importance. Is it at all inconceivable that the topic of global warming is one of the most vital concerns of humanity today? Those who warn of the dire effects of global warming contend that it is the single most important charge with which man is faced. With the promise of steadily rising temperatures throughout the remainder of this century, scientists are telling us that we cannot maintain "business as usual."

The results of rising temperatures are likely to affect many aspects of our existence. "By late 2004 ... The world's leading science journals were full of reports that glaciers were melting faster

than previously thought, that atmospheric greenhouse gases had reached levels not seen for millions of years, and that species were vanishing as a result of climate change. There were also reports of extreme weather events, long-term droughts, and rising sea levels” (Flannery 6). And, though these events have been lumped under the umbrella of global warming, many of us have no idea what the term really means. Most of us also do not have a clear idea of its possible ramifications. For this reason, I want to treat this scientific concern as a literary subject that will enlighten the average layperson. I would like to use the education and subsequent writings of my students to both highlight the potential economic, sociologic, and geopolitical impact of global warming on the current and future inhabitants of Mother Earth and to suggest possible remedies. These are most pertinent issues and are deserving of education’s focus. However, before we rush willy-nilly onto the battlefield, we must first agree on the answer to a primary question. Exactly what is global warming?

Global warming is caused by the massive increase of greenhouse gases, such as carbon dioxide, in the atmosphere resulting from the burning of fossil fuels and deforestation (Maslin 1). It “is the expected slow, gradual warming of the lower layers of ... Earth’s ... atmosphere by the slowly increasing concentrations of man-made greenhouse gases ... [which] trap infrared radiation...the heat radiation.” (“What Is Global Warming?”)

After defining the term, we must consider the effects of the same. “The world’s leading climate scientists said global warming has begun, is ‘very likely’ caused by man and will be unstoppable for centuries” (Borenstein). Statements like this have prompted much debate, yet the various sides cannot seem to reach an agreement on how serious the effects of the problem will be. This has led to America’s current estrangement from the international community on the issue. Also, there has been a serious parting of ways among many in the scientific community, though this gap appears to be lessening as all admit and agree that the question needs to be considered because there is, indeed, a problem.

## **OBJECTIVES**

It is my belief that what makes understanding this issue so difficult is that we focus on it at too late an age. I would like to propose a remedy for this. If we can get students (mine are a high school population, ages 13 through 19 and grade levels 9 through 12, that crosses all socioeconomic and ethnic lines in an urban setting) to think about the facts surrounding this topic, the consequences predicted, and the solutions proposed, then we can get them to accept that this is a serious topic, one which should be researched and the results of that research disseminated.

Using the topic, “Creative Writing in Real World Issues: Global Warming,” I intend to both raise my students’ interest and increase their knowledge base. After that I want them to pass on the information they have gained to their families and friends in their writings. They can use their poetry, their articles, their essays and short stories, their plays, and their novellas to provide the facts they have acquired and the conclusions they have drawn in varied, interesting ways. They can use, in their works, the language that they use on a daily basis. It is their voices that I want to have heard. To achieve this end, rigorous attention to the facts and the means by which they are disseminated will have to be paid.

The basic Houston I.S.D. Project Clear Writing objectives are more than sufficient to meet this challenge. They begin with the student developing the foundations of writing, then move on to the student writing for a variety of purposes and in a variety of forms. After that, the students’ ability to use the conventions of written language to communicate clearly and effectively in writing and his/her application of standard grammar and usage to communicate clearly and effectively in writing is taken into consideration. The student must then select and use recursive writing processes for self-initiated and assigned writing, as well as demonstrate competence in evaluating his/her own writing and the writing of others. Lastly, the student will interact with

writers inside and outside of the classroom in ways that reflect the practical uses of writing and he/she will use writing as a tool for learning and research. Each of these objectives lends itself well to the study and dissemination of information gained while the students familiarize themselves with real world issues like global warming in order to write more effectively and to impact the lives of their readers.

These H.I.S.D. objectives also align with those of the Texas Essential Knowledge and Skills (T.E.K.S.), which say that the student will write for a variety of audiences and purposes to develop versatility as a writer (ELA.110.52.b.1.A-G) and select and use recursive writing processes for self-initiated and assigned writing (ELA.110.52.B.2.A-I). Further, the T.E.K.S. state that the student will apply the conventions of usage and mechanics of written English to communicate clearly and effectively (ELA.110.52.B.3.A -D), and will evaluate his/her own writing and the writing of others (ELA.110.52.B.4.A-C).

## **RATIONALE**

Climate change and global warming are well up on the current political agenda. There are urgent questions everyone is asking: Are human activities altering the climate? Is global warming a reality? How big are the changes likely to be? Will there be more serious disasters, will they be more frequent? Can we adapt to climate change or can we change the way we do things so that we can slow down the change or even prevent it occurring? (Houghton xxiii)

If scientists and world leaders are considering the issue, why shouldn't our students? The major impact of any type of significant climate change will be on them, their lives, and their future. "The best evidence indicates that we need to reduce our CO<sub>2</sub> emissions by 70 percent by 2050 ... 70 percent of all people alive today will be alive in 2050, so climate change affects almost every family on this planet" (Flannery 6-7). Our students and their offspring will make up the majority of the surviving populace. They are the ones who will have to "deal" with the issue. Accordingly, it stands to reason that they should seriously consider this subject which could have a major effect on them. Unlike the now-empowered adults who have an economic reason to kick against the prick, these stakeholders should be able to consider the subject rationally, solely on its merit or lack thereof and the implications it holds for their futures.

We are given a hint as to how salient the issue of climate change is by the number of television movies that have been made on the subject. The writers and producers of these films have depicted the likely effects of global warming, and they have done so, seemingly, with a vested interest to not only raise public awareness but to also raise money. In typical Hollywood fashion, the films are rife with dire consequences, such as millions of people dying in the streets, the total destruction of buildings and residences, and unimaginable horrors wreaked by mega-storms, powerful earthquakes and nature -- as a whole -- gone mad. These movies have raised the consciousness of the general populace but because they are, after all, "motion pictures," they have also contributed to public skepticism. "Surely these are just horror films?" is a frequent assessment of the validity of the films' premise. "I think not" is just not a strong enough answer. Our students, armed with stores of facts and rational opinions based on them, can add reason's fuel to the fire that is now being lit in the battle against human-induced global warming and its possible consequences. Their most telling argument should be knowledge, not fear-induced panic. It is in this effort that a study of a real world issue like global warming during the course of a creative writing class can be most effective.

## **UNIT BACKGROUND**

Few topics have aroused as much public debate and dispute over the past quarter century as global warming. It has become more than an argument over information such as

temperature readings and evidence such as melting mountain glaciers and thinning polar ice. The global-warming issue pits scientists against politicians, environmentalists against energy-company representatives. The public is bombarded with dire warnings ... It is risky for scientists to express even the slightest doubt that all of the past 30 years' global environmental change is due to humanity's pollution of the atmosphere. Global warming has become a moral as well as a scientific arena. (De Blij 52)

“Climate is, and always has been a profound catalyst in human history, a pebble cast in a pond whose ripples triggered all manner of economic, political and social changes” (Fagan, *Summer* xiv).”

For fifteen years the U.S. government has struggled with developing appropriate policy responses to the hazards of global climate change. Industrial and agricultural activities, such as burning fossil fuels and clearing forests for crops, raise the volume of carbon dioxide (CO<sub>2</sub>) and other ‘greenhouse gases’ [in the atmosphere]. As these gases accumulate ..., they ... trap heat and alter the climate, which [given time] will probably raise sea levels and may increase the number and severity of extreme weather events such as heat waves, droughts, and floods. Although often called ‘global warming,’ the expected changes in climate are likely to be more complex than a simple rise in global average temperature [and] ... the effects of climate change could unfold more rapidly than the capacity of humanity and [Earth’s] ecosystems to adjust. (Victor 1)

This is a most telling testament; we humans appear to be the potential authors of our own doom.

Since “most scientists are certain that anthropogenic global warming is a reality ... that the past 150 years of global warming, longer than any such period over the past thousand years, have unfolded in part because of our own actions,” we need to take a step back to see what changes we can make to lessen or remedy the effects of our actions (Calvin 6-9). “Promiscuous land clearance, industrial-scale agriculture, and use of coal, oil, and other fossil fuels have raised greenhouse gas levels in the atmosphere to record highs and [have] contributed to the warming” (Fagan, *Summer*, xii). And, in the face of this, time is not necessarily on our side.

Many climate changes are not gradual affairs ... A gradual greenhouse warming over several centuries is not how things usually happen ... When “climate change” is referred to in the press, it normally means greenhouse warming, which, it is predicted, will cause flooding, severe windstorms, and killer heat waves. But warming could also lead, paradoxically, to abrupt and drastic cooling – a catastrophe that could threaten the end of civilization. ... For a quarter century global-warming theorists have predicted that climate creep was going to occur and that we needed to prevent greenhouse gases from warming things up, thereby raising the sea level, destroying habitats, intensifying storms, and forcing agricultural rearrangements. Now we know that the most catastrophic result of global warming could be an abrupt cooling and drying. (Calvin 6-9)

“One of the most shocking scientific realizations of all time has slowly been dawning on us: the earth’s climate does great flip-flops every few thousand years, and with breathtaking speed ... Our ancestors lived through hundreds of such episodes ... We are the improbable descendants of those who survived – and later thrived” (Calvin 3). Now it is our turn to ensure that our progeny and theirs will also be survivors. Now it is our turn to ensure that our planet thrives. Now it is our turn to do that which we can to lessen, if not eliminate, those anthropogenic factors which contribute to global warming. The flood of history shows us the dangers we face. The works of our students can, possibly, turn the tide. They are our immortality. For them we have to raise awareness. Through them, we will live on – if we don’t destroy the planet before they have a chance to inherit it. So, let’s allow them to lift their voices in its defense. Let’s allow them to

speak to the issue of global warming in terms that we must understand, in terms steeped in their desperate desire for survival. In works they create and disseminate, taking lessons learned from the past to ensure that we, as a global community, will never forget that we are the caretakers of this planet, the ones who have been given dominion over it and its inhabitants. We are the ones who have a responsibility and a duty to do all that we can in our quest to be the best possible stewards of this, our one and only world, our legacy to them.

## **Global History**

“The heyday of the Norse ... was not only a byproduct of such social factors as technology, overpopulation, and opportunism. Their great conquests and explorations took place during a period of unusually mild and stable weather in northern Europe called the Medieval Warm Period.” Most of Europe and parts of North America were affected by these warmer conditions which were, in their historical consequences, momentous, and led to the survival of a colony in Iceland. Because of them, the settlers even planted barley until the twelfth century. After that, until the early 1990s, barley could not be grown in Iceland. For the next five centuries, Europe enjoyed warm, stable weather. “Summer after summer passed with long, dreamy days, golden sunlight, and bountiful harvests. Compared with what was to follow, these centuries were a climatic golden age .... Nothing prepared them for the catastrophe ahead. As they labored through the warm summers of the thirteenth century, temperatures were already cooling on the outer frontiers of the medieval world” (Fagan, *Little Ice Age* 8-11). The Little Ice Age, heralded by the Great Famine, was about to begin.

Mortality rates had soared by the beginning of the fifteenth century. They were caused by famine, plague, and war, and they led to as many as 3,000 villages across France alone being abandoned. “In Scandinavia, sodden fields prevented farmers from planting.” The early 1400s saw exceptionally harsh winters, prolonged frost, and severe storms. In 1453 the first sign of France’s recovery came. It was a time of milder oceanic conditions that lasted until the early sixteenth century when a “spike of sudden cold weather in 1527 brought immediate threats of social unrest” (Fagan, *Little Ice Age* 83-84).

Throughout Europe, the years from 1560 to 1600 were cooler and stormier, with late wine harvests and considerably stronger winds than those of the twentieth century. Climate change became a highly significant factor in fluctuating food prices [and, as] climatic conditions deteriorated ..., crops failed and cattle perished by diseases caused by abnormal weather. Famine followed famine bringing epidemics in their train; bread riots and general disorder brought fear and distrust. Witchcraft accusations soared, as people accused their neighbors of fabricating bad weather. Lutheran orthodoxy called the cold and deep snowfall in Leipzig in 1562 a sign of God’s wrath at human sin, but the church’s bulwark against accusations of witchcraft began to crumble when climatic shifts caused poor harvests, food dearth, and cattle diseases. (Fagan, *Little Ice Age* 90-91)

The severe weather in 1587 and 1588 brought with it the greatest number of witchcraft allegations in European history. “Almost invariably, a frenzy of prosecutions coincided with the coldest and most difficult years of the Little Ice Age [because people] demanded the eradication of the witches they held responsible for their misfortunes” (Fagan, *Little Ice Age* 90-91). However, as scientists sought rational and natural explanations for the causes of the unbearable climatic conditions, the ‘hue and cry’ against witchcraft slowly died. “Only God or nature [was] responsible for the climate, and the former could be aroused to great wrath at human sins. Today, our ecological sins seem to have overtaken [and exceeded] our spiritual transgressions as the cause of climatic change” (Fagan, *Little Ice Age* 90-91). It is this issue that I would ask my students to address in their works.

## **IMPLEMENTATION**

The first thing that will have to be done to start this movement is to make the students aware of the basic vocabulary of global warming. Many of the terms have been bandied about enough that the students have probably heard them; however, most of them – and us – don't know their meanings. This is a problem that must be remedied; therefore, the students will be given a crash course in the terminology associated with global warming so that they can better understand the ensuing lessons on weather and climatology and their relationship to global warming. When defining the words, they will be asked to provide a visual which helps them retain both the words and their definitions. To add another layer of reinforcement, the students will also be assigned to teams that will face off in a competition which resembles a Quiz Bowl competition and is designed to showcase their knowledge and provide the benefits inherent in the collaboration of peers.

### **Vocabulary**

The word bank associated with weather and climatology will have to include such terms as climate, weather, radiation, infrared radiation, ozone, greenhouse gases, atmosphere, troposphere, stratosphere, mesosphere, thermosphere, energy balance, fossil fuels, conduction, convection, evaporation, condensation, and precipitation, as well as the terminology that goes along with global warming like anthropogenic, greenhouse effect, methane, and carbon dioxide. Upon defining these terms and gaining an understanding of the differences between weather and climate, the students will be taught how the terminology applies to the study of the topic at hand, global warming. During this portion of the semester-long project, the students will write various types of poems which highlight either the definitions of the words, their properties, or both, as they research the material needed to write an informative paper on this subject. It is this paper and the materials used to develop it, which will supply the necessary ingredients for the students' final project – a novella or script which highlights the possible impact global warming can/will have on their world.

### **Sources of Problems**

After the students have demonstrated a working knowledge of the terms and the climatic conditions associated with global warming, they will be asked to review the various things that make our atmosphere change. Though they will be provided information that shows how nature impacts our atmosphere, the primary focus will be on those things which humanity does that harm the world in which we live. They will look at how these practices can be proven to negatively impact our atmosphere and, possibly, fuel global warming. They will study the anthropogenic factors, the human-created catalysts. It is in this portion of the lesson cycle that the students will gain the most knowledge of what is happening in and to their world. To document their findings, they will be assigned the task of writing a series of newspaper or magazine articles, fictionalized but rooted in fact, which speak to these issues and add material fodder for their research papers.

The first articles should deal with greenhouse gases and infrared radiation. The differences between a "natural" greenhouse effect and a "man-made" greenhouse effect will be emphasized. The fact that natural greenhouse gases from water vapor, carbon dioxide, methane, and other gases keep the Earth's climate warm and habitable whereas man-made greenhouse gases from the burning of fossil fuels and rain forests lead to what appears to be a significant increase in the temperature (thus changing climates and possibly adversely affecting weather) should be pointed out. To emphasize the seriousness of this, recent weather changes that occurred during the last bout with "the Christmas Child," the 1997-1998 El Nino, and led to "hundred-year rains in Peru, [and] floods that swept away entire streets ... [in] Trujillo" should be relayed and related to the effects of global warming. The articles will stress that though damage was less severe than it could have been because the world's populace had been informed of the impending storms by the

media, worldwide over \$10 billion in damage was caused “and a strong El Nino (the Christmas Child) now sweeps away bridges, houses and roads and kills hundreds of people, leaving hunger in its wake” (Fagan, *Floods* xii-xiii).

In the course of writing these articles, students should provide the inescapable truth that greenhouse gases, like a blanket, trap some of the infrared radiation that escapes from the Earth, making the planet warmer. They should also offer proof that the concentrations of these gases, including carbon dioxide and methane, are increasing. This is what “is believed by many scientists to be responsible for the global warming of the last 150 years” (“What Is the Greenhouse Effect?”). Therefore, another question the students must answer at the beginning of this undertaking is “What is infrared radiation?”

To answer this question and gain a working knowledge of the same, the students will be asked to write narrative essays on the effect of infrared radiation (IR) on the Earth and its inhabitants, using the personification of the gases and the radiation to tell “their stories.” They will begin by defining the terms, which now become the major characters in their stories, and then use comparison and contrast details to reinforce these meanings. The stories will tell how IR helps to keep the earth habitable when it is trapped by greenhouse gases and will be centered on a conflict between the gases and the IR, who is trying to aid in the escape to Outer Space of some of its kin before the fact that there are too many of them becomes detrimental to Earth and its inhabitants.

### **Possible Solutions**

After the students’ understanding of the problems indicates a proficient or masterful grasp of the knowledge which shows the danger with which our planet is faced, they will be given the opportunity to look at and propose possible solutions to the many problems uncovered through their course of study. It is in this portion of the semester that the students will write their scripts for stage or screen or their novellas that will highlight both the problems and the proposed solutions to the issue of global warming.

### **LESSON PLANS**

Both the problems and solutions will be provided through library research and classroom teacher-facilitated discussions and activities. These issues can be raised in a variety of original text types beginning with a children’s book which combines fact and fiction. As previously stated, the information for this book will come from a series of lessons which begins with a basic vocabulary acquisition lesson.

#### **Lesson Plan I**

##### ***Focus***

When the students enter the room they will see a series of slides which contain images ranging from shots of a thriving rainforest and snowcapped mountains to receding glaciers and burnt grasslands which result from deforestation. These slides will not be accompanied by audio as the primary objective for using them is to “let the students see with their own eyes” the changes that are occurring in their world. After the slides have run their course, the students will be given a list of vocabulary words which they will be asked to not only define but also illustrate in some manner designed to make the words more vivid for them and their classmates. This lesson, they will be told, is to be done, primarily, as an out-of-class assignment. So, after they have been given the words and the instructions on what to do with them, we will move on – to the viewing of the first half of the documentary, *An Inconvenient Truth*.

### ***Objectives***

The student will be able to write for a variety of audiences and purposes to develop versatility as a writer (ELA.110.52.b.1.AS-G) and will apply the conventions of usage and mechanics of written English to communicate clearly and effectively (ELA.110.52.B.3-A-D). The student will also demonstrate proficiency in evaluating his/ her own writing as well as the writings of others (ELA.110.52.B.4.A-C).

### ***Materials/Resources***

Students will generate definitions of the terms relevant to the study of global warming from a lexical reference. They will use any materials necessary to “decorate/illustrate” these terms so they can be used as visual references. Also, the students will use the stories they have written in which characters representing the personified terms relevant to the weather, climatology and global warming. Lastly, Al Gore’s text and video entitled *An Inconvenient Truth* will serve as a reference source.

### ***Procedures/Activities***

A review of the elements of characterization and plot will be given by the teacher, along with the necessary parts to be included in a well-written play. These will be discussed with the students who will later be arranged in groups of four to five and instructed to discuss the short stories they wrote in which the terms commonly used to discuss weather, climate, and global warming were personified and used as the characters. They will be asked to select the characters they find most interesting and to then use these characters in a group-created skit which they will present before the class.

### ***Assessment***

Each play will be assessed according to whether or not the students’ skits truly speak to the issue of global warming (either negatively or positively), if their characters are believable and provide a glimpse of both what global warming is said to be and why it is believed to be occurring, and if they present viable options of what can be done to ameliorate the problem if there is one or to stop the doomsayers from frightening the populace with a “bunch of scientific hooey!”

## **Lesson Plan II**

### ***Focus***

As the students enter the room, they will be given a maze to ponder and solve. They will be asked to “run” the maze first with a pencil, then to ink in the route they’ve chosen. After this has been done, we will assess the mazes and grade accordingly. Hopefully, all of the students will score a 100 as they simply have to start at the beginning and move to the end without crossing boundaries represented by lines. Once this is done, the students will be asked to keep the mazes for a future assignment to be completed after they have watched a 2007 documentary on global warming which features Tom Brokaw.

### ***Objectives***

The student will be able to write for a variety of audiences and purposes to develop versatility as a writer (ELA.110.52.b.1.AS-G) and will apply the conventions of usage and mechanics of written English to communicate clearly and effectively (ELA.110.52.B. 3-A-D). The student will also demonstrate proficiency in evaluating his/ her own writing as well as the writings of others (ELA.110.52.B.4.A-C) as well as to select and use recursive writing processes for self-initiated and assigned writing (ELA.110.52.B.2.A-I).



### ***Materials/Resources***

Students will use the mazes previously completed, as well as the notes taken while watching Tom Brokaw's 2007 documentary on the facts as they relate to global warming. They will also use data they have gathered through research of primary and electronic resources.

### ***Procedures/Activities***

First the students will work in groups to come up with a list of the various problems associated with global warming. They will use this list to serve as the barriers that will be encountered in a maze and through which a maze-walker will have to travel. In the ensuing work, the students will write a children's pop-up book which begins with a written view of a Museum Maze of man-made environmental hazards associated with global warming, which has been created from their previously-generated list. Then, the reader will be introduced to a young child walking through the maze asking, "Why," determinedly demanding answers. In the course of the story, the inquiring child will be given the history behind each problem, as well as any explanations or reasons for the same which have been provided to the public by corporations and politicians. This information will be provided by a "Caretaker" whose job it is to answer the queries of the young ones who visit the museum. In a very natural progression through the maze, the reasoning provided by the Caretaker will lead the young inquirer to ask how these issues can be "fixed." These questions will then be answered using proposed solutions offered by environmentalists and other individuals who have been vocal in their assertions that there is indeed a problem, a need to work to fix it, and remedies to be developed or at hand to do the necessary repair. The student author will allow this process to continue until both the hazards and the solutions are fully given in terms a young child – and the rest of us – can understand. The "informing" will not stop here.

### ***Assessment***

A rubric will be created which considers the detail in the book. Students will be graded on the amount and accuracy of information presented in the book, the aesthetics inherent in the presentation of this information, and the literary style, devices, and techniques used to make the same interesting and appealing to a young reader.

### **Lesson Plan III**

Following this lesson, it is only natural for the students to look at the spread of humanity across the planet and what impact it has had on our environment and why. In this section, research will definitely be required.

### ***Focus***

An overhead projector will be used to highlight various quotes from historical figures in Brian Fagan's *The Little Ice Age* which depict humanity's response to drastically changing climatic conditions in our global past. As the students enter into the classroom they will be asked to read the quotes and to respond by writing down the feelings they experience as they read each item.

### ***Objectives***

The student will be able to write for a variety of audiences and purposes to develop versatility as a writer (ELA.110.52.b.1.AS-G) and will apply the conventions of usage and mechanics of written English to communicate clearly and effectively (ELA.110.52.B. 3-A-D). The student will also demonstrate proficiency in evaluating his/ her own writing as well as the writings of others (ELA.110.52.B.4.A-C) as well as to select and use recursive writing processes for self-initiated and assigned writing (ELA.110.52.B.2.A-I).

### ***Materials/Resources***

The student will need to use the library and the Internet to find facts and figures which show the effects of humanity's population growth on our world. To do this, they will be given a list of studies of ice core samples and fossils which show the amounts of the various greenhouse gases over time and how man's presence has had an effect on these. They will also be asked to look at particular times in human history and to document the population levels of particular places and the technologies present at those times to draw conclusions about man's possible impact on the climate through his impact on the environment in which he lived.

### ***Procedures/Activities***

A timeline will be created which shows the population levels, the tools and technologies used by the populace, and the levels of the greenhouse gases at various times. This timeline will be used to serve as a reference for diaries, ballads, odes, sonnets, letters, articles, and epitaphs, along with other written traces of humanity based on an imaginary population which could have lived then and there but which is really the result of the imaginations of a group of students who have become, through their efforts, creators.

### ***Assessment***

Bearing in mind that this is a Creative Writing class, the teacher will look for accuracy of information as the use of poetic devices and strictures imposed by particular forms/genres are set out as the parameters of the lessons.

### **Lesson Plan IV**

In this class, I would like to stress that horror films are not the only way to get across a message to the public at large. I want them to know that comedy can also be used. With this in mind, the students will be asked to work in this area creating farces, stand-up comedy routines, limericks and the like which are centered on the topic of global warming.

### ***Focus***

Snippets of comedic routines and scenes related to global warming will be shown to the student. They will be asked to discuss the same with a partner and then with the class.

### ***Objectives***

The student will be able to write for a variety of audiences and purposes to develop versatility as a writer (ELA.110.52.b.1.AS-G) and will apply the conventions of usage and mechanics of written English to communicate clearly and effectively (ELA.110.52.B. 3-A-D). The student will also demonstrate proficiency in evaluating his/ her own writing as well as the writings of others (ELA.110.52.B.4.A-C) as well as to select and use recursive writing processes for self-initiated and assigned writing (ELA.110.52.B.2.A-I).

### ***Materials/Resources***

For this lesson, along with pen and paper, the students will simply need to bring a sense of humor and their notes to the table.

### ***Procedures/Activities***

The students will be asked first to write individual limericks and then, in groups, to write a stand-up comedy routine to be presented by someone in the group. Following this they will be asked to write and present a skit in which all group members are part of the cast in a work which speaks to the issue of global warming in a humorous manner. They can perform these in class or onstage with their families and friends as their audience. Both the players and the audience should recognize that though the material is humorous, it is still insightful and relevant.

### ***Assessment***

To assess the effect of the assignment and its results, critiquing discussions will be held in an inside/outside group format. The writers and performers will be the first inside group and discuss what they have learned, what they feel they have taught, and what they believe could have been done better. They will then exchange places with the outside group, and the same discussion will be held but from a viewer's perspective. No one in an outside group will be allowed to speak in the paneled discussions. However, the class will later, as a whole, discuss each of the presentations.

Done well, this forum will raise consciousness, and the viewers and the players will begin to question why our world has been put in such a position. In a natural progression they will, then, as individuals and groups ask what can be done about it. This is the point where the entertainment offered through their writing becomes relevant and the assignments take on true, real life, meaning.

### **Lesson Plan V**

Lastly, the students will be expected to write either a short "chapter" story of approximately 15 typewritten, double-spaced pages or a one-act play with three (3) scenes, each scene being at least three pages in length. Each section of the short story or the play will be directed, i.e. the choice of scenarios will be provided by the teacher and based on the aspect of global warming the students are being asked to highlight. In order to successfully complete either of these works, the student will have to have gained sufficient knowledge of both the subject and the medium through which they wish to express their views. If they can do this, then learning will have occurred. And not just any kind of learning but learning relevant and, more than likely, beneficial to them and their world.

### **CONCLUSION**

This is, I feel, our primary purpose as educators – preparing our students to be better citizens and contributors to their world. We want to affect a transfer of knowledge, and we must remember to use the knowledge that when youth won't hear us, it will hear its peers. Also, though parents may sometimes ignore the high flown rhetoric of educators and scientists, they tend to listen to their children and to respect those things that they find they have learned. So, I do not doubt that the students will be heard. I believe their peers will, then, spread the word, saying "Have you heard ...? Read ...?" And those to whom they speak will consume what has been proffered, as will the families of our writers and their friends. In this way the word will spread and, from this, we will be able to draw support for what should not be insupportable in the least – addressing the problem of global warming and its potential effects with immediacy.

If this happens, as teachers, we will have made a difference. As participants in the process, our students will have a true impact on their world. And as lifelong learners banding together and addressing the issue together, we will entertain and inform even as we are entertained and informed.

As we juxtapose science and literature, what more can we ask?

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