
AP[®] Seminar

Performance Task 2

Sample Student Responses and Scoring Commentary

Inside:

Individual Written Argument

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AP[®] SEMINAR — PERFORMANCE TASK 2

2019 SCORING GUIDELINES

Individual Written Argument

| Row/Proficiency | Score 0 if... | Points earned for... | | MAX Points |
|---|--|---|--|------------|
| 1 UNDERSTAND AND ANALYZE CONTEXT | <p>The response does not incorporate any of the stimulus material, or, at most, it is mentioned in only one sentence.</p> <p style="text-align: center;">OR</p> <p>The response includes a discussion of at least one of the stimulus materials however it does not contribute to the argument.</p> <p style="text-align: center;">0 Pts</p> | <p>The response demonstrates the relevance of at least one of the stimulus materials to the argument by integrating it as part of the response. (For example, as providing relevant context for the research question, or as evidence to support relevant claims.)</p> <p style="text-align: center;">5 Pts</p> | | 5 |
| 2 UNDERSTAND AND ANALYZE CONTEXT | <p>The response either provides no context.</p> <p style="text-align: center;">OR</p> <p>The response makes simplistic references to or general statements about the context of the research question.</p> <p style="text-align: center;">0 Pts</p> | <p>The response explains the significance or importance of the research question by situating it within a larger context.</p> <p style="text-align: center;">5 Pts</p> | | 5 |
| 3 UNDERSTAND AND ANALYZE PERSPECTIVE | <p>The response provides only a single perspective.</p> <p style="text-align: center;">OR</p> <p>The response identifies and offers opinions or unsubstantiated statements about different perspectives that may be overly simplified.</p> <p style="text-align: center;">0 Pts</p> | <p>The response describes multiple perspectives and identifies some relevant similarities or differences between them.</p> <p style="text-align: center;">6 Pts</p> | <p>The response evaluates multiple perspectives (and synthesizes them) by drawing relevant connections between them, considering objections, implications, and limitations.</p> <p style="text-align: center;">9 Pts</p> | 9 |

AP[®] SEMINAR — PERFORMANCE TASK 2

2019 SCORING GUIDELINES

Individual Written Argument (continued)

| Row/Proficiency | Score 0 if... | Points earned for... | | MAX Points |
|--|--|--|---|------------|
| 4 ESTABLISH ARGUMENT | <p>The response provides only unsubstantiated opinions or claims.</p> <p style="text-align: center;">OR</p> <p>The response summarizes information (no argument). The response employs inadequate reasoning due to minimal connections between claims and evidence.</p> <p style="text-align: center;">0 Pts</p> | <p>The argument presents a claim with some flaws in reasoning.</p> <p>The response is logically organized, but the reasoning may be faulty or underdeveloped</p> <p>OR</p> <p>The response may be well-reasoned but illogical in its organization. The conclusion may be only partially related to the research question or thesis.</p> <p style="text-align: center;">8 Pts</p> | <p>The response is a clear and convincing argument.</p> <p>The response is logically organized and well-reasoned by connecting claims and evidence, leading to a plausible, well-aligned conclusion.</p> <p style="text-align: center;">12 Pts</p> | 12 |
| 5 SELECT AND USE EVIDENCE | <p>Any evidence presented in the response is predominantly irrelevant and/or lacks credibility.</p> <p style="text-align: center;">0 Pts</p> | <p>The response includes mostly relevant and credible evidence.</p> <p style="text-align: center;">6 Pts</p> | <p>The response includes relevant, credible and sufficient evidence to support its argument.</p> <p style="text-align: center;">9 Pts</p> | 9 |
| 6 APPLY CONVENTIONS (CITATION) | <p>The response is missing a bibliography/works cited OR the response is largely missing in-text citations/ footnotes.</p> <p style="text-align: center;">0 Pts</p> | <p>The response attributes or cites sources used through the use of in-text citations or footnotes, but not always accurately.</p> <p>The bibliography or works cited references sources using a generally consistent style with some errors.</p> <p style="text-align: center;">3 Pts</p> | <p>The response attributes, accurately cites and integrates the sources used through the use of in-text citations or footnotes. The bibliography or works cited accurately references sources using a consistent style.</p> <p style="text-align: center;">5 Pts</p> | 5 |
| 7 APPLY CONVENTIONS (GRAMMAR AND STYLE) | <p>The response has many grammatical flaws, is difficult to understand, or is written in a style inappropriate for an academic audience.</p> <p style="text-align: center;">0 Pts</p> | <p>The response is mostly clear but may contain some flaws in grammar or a few instances of a style inappropriate for an academic audience.</p> <p style="text-align: center;">2 Pts</p> | <p>The response creates variety, emphasis, and interest to the reader through the use of effective sentences and precision of word choice. The written style is consistently appropriate for an academic audience, although the response may have a few errors in grammar and style.</p> <p style="text-align: center;">3 Pts</p> | 3 |

Utilizing Data Science to Establish Sustainable Agricultural Production System in China

AP Seminar

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Word Count: 2087

The 21st century can as well be described as the Asian century (Mahbubani, 2008), with China emerging as a global economic and political powerhouse that is contested only by the United States (Wolf, 2018). Accompanying its growth is the expansion of its agriculture industry, which employs more than 300 million farmers and tops the worldwide farm output ranking (National Bureau of Statistics of China, 2008). Food security has always been one of the top priorities of China due to its rapid population growth. The Chinese population grew from 600 million to over 1.3 billion in the past 50 years (National Bureau of Statistics of China, 2013), which exerted “steady pressure on China to keep expanding its agricultural production” (Yu & Wu, 2018). To meet the increasing demand for food, the Chinese agricultural sector adopted the ideology of “pollute first, and then clean up” (Liu, 2010). As a result, the agricultural industry of China became robust, feeding 22% of the world population (Liu, Zhang & Herbert, 2010). However, this simultaneously engendered “serious environmental pollution” (Yu & Wu, 2018), partly due to heavy reliance on chemical fertilizers (Norse & Ju, 2015). In fact, in 2013, the Chinese agricultural sector used 59.11 million tons of fertilizers—35.5% of the world’s total usage (Zhang, Dou & et al, 2013). The number will only increase if the Chinese government fails to introduce effective means of sustainable, pollution-free production, which would degrade the available arable soil, eventually hurting the Chinese agricultural industry and cutting the global food supply to a significant extent. Therefore, it is crucial that the Chinese government invest in altering its farming practices and achieve sustainable production in an effective manner. This paper will examine which method the Chinese government should apply in order to facilitate sustainable agriculture.

Fortunately, the need for sustainable agriculture has gained much attention since the late 20th century, and various researchers have put forward technology as a solution to such an urgent trend of excessive use of chemical fertilizers. This is unsurprising given that technology has increasingly been a key tool to facilitate scientific understanding of complex problems ranging from global climate change¹ (Thatcher, 1989) to urban transformation² (Montgomery, 2008), which helps people to better react to them. In their article published in *Scientific American*, Plucknett and Winkelmann, two leading researchers in agricultural science, suggest the use of biotechnology to modify the crops so that the crops would become more “efficient in converting nutrients [from soil] into food and fiber products” (Plucknett & Winkelmann, 1995). This could minimize the need for chemical fertilizers since the crops would self-sustain sufficient amount of nutrients for their growth without the artificial input. In essence, biological modification facilitates the growth of the crops just like chemical fertilizers do, but without causing any environmental harms to the soil.

China has acknowledged such an advantage and has spent billions of yuan—equivalent of hundreds of millions of the U.S. dollars—for its own biotechnological development in the early 21st century. It witnessed a rapid progress, as the Chinese government “approved two pest-resistant varieties of rice and a biotech corn for commercialization” (Patton, 2014) in 2009. Moreover, in September 2014, the Chinese government launched a media campaign to alter the negative public perception about genetically modified organisms (GMO) by initiating public

¹ In her speech to the United Nations, Thatcher asserted that people should employ scientific research with advanced technology to get the clearer picture of global warming and to come up with precise solutions (Thatcher, 1989).

² In his article published in *Science*, Montgomery explains how advanced use of data can help demographic researchers to forecast the trend of urban transformation, thereby addressing the urbanization issue more accurately (Montgomery, 2008).

education on GMO “via TV, newspapers and the Internet” (Patton, 2014). Recently, such a sustainability-oriented effort reached beyond the domestic scope when the Chinese Academy of Agricultural Sciences, a renowned science educational institution in China, hosted the Australia-China Sustainable Agricultural Technology Forum in partnership with an equally renowned Australian academic institution called University of Tasmania (Tasmanian Institute of Agriculture, 2018). The forum encouraged an in-depth discussion on various topics including GMO, enabling potential partnerships and investments on the relevant technology.

While the heavy emphasis on GMO development certainly contributes to facilitating sustainable agriculture, it is crucial to examine whether or not China is opting for the best method when it directs its sustainability effort to the development of biotechnology (Ellis, 2018). The genetic modification of crops enables the crops to absorb nutrients in an efficient manner. However, the quality of harvest does not solely rely on the crops’ ability to absorb nutrients, for it is also affected by soil condition, weather, type of crops and the farmers’ efficient use of resources (Stern, 2015; Dai, Welham & et al, 2016). Therefore, the improvement on the crops’ ability to absorb nutrients would not necessarily lead to the optimal outcome. It is worthy to look into another type of technology that would account for a variety of the aforementioned factors and help the farmers to manage their farming practices in the most efficient manner, thereby strengthening the sustainable agriculture of China.

Luckily, such a technology exists thanks to the Fourth Industrial Revolution³ that entailed the rapid development of an unprecedented field of computing technology: Data science. Data science utilizes computer science and statistics to obtain key information and insights from a

³ A technological revolution facilitated by advanced computing and information technology that “will fundamentally alter the way we live, work, and relate to one another” (Schwab, 2016).

mass amount of data (Dhar, 2013). A key information technology, it helps people to analyze the available data of any kind and predict the relevant trend. Such a predictive capacity of data science is utilized to optimize outcomes in various fields ranging from business to sports. For instance, the e-commerce company Amazon collects a variety of data about its users such as the reviews they leave, the amount of time they spend browsing certain page, and what users with similar shopping habit purchase (Marr, 2018; Blakhi, 2019), which are then used to “predict what [they] want to buy” and to “streamline the process of persuading [them] to buy it” (Marr, 2018). This enables Amazon to recommend suitable products to its customers and increase the total sales⁴. Similarly, data science is used to predict the performance of potential athletes to enable the “efficient acquisition of player talent” (Schuckers, 2016). A set of data including potential athletes’ heights and weights, pre-draft performance, and rankings can be used to estimate their future performance, which helps the scout managers of professional teams to make right decisions.

Business and sports are by no means the only fields where the predictive capacity of data science is employed, as it is also used to tackle sustainability-related problems.

Sustainability-related problems are the issues that warrant people to sustain a certain system by making most of limited resources. Such a restrictive nature of the issue makes data science a very useful tool as it generates reliable predictions about certain systems or phenomena, which allows people to allocate the available resources in the most efficient manner and prepare for the future. A relevant example comes from an article called “The Urban Transformation of the Developing World” published in *Science*. The article puts forward the issue of urbanization that

⁴ In 2017, Amazon generated \$178 billion in annual revenue—the highest value ever—and in September 2018, its market value reached \$1 trillion (Streitfeld, 2018).

influences the problems of “urban poverty [and] the urban implications of global climate change” (Montgomery, 2008), the two of which are officially set by the United Nations as components of “the 17 Sustainable Development Goals” (United Nations, 2015). The article suggests that the demographic community is dedicating its efforts to forecasting the city growth. During the process, data is heavily used, with the United Nations Population Division leading the effort by relying on the algorithmic city forecasting model (Montgomery, 2008). There are some inaccuracies to the system, but the researchers are endeavoring to minimize them and to bolster the current data science system.

The ability to forecast the trend of urban transformation is highly valued because it helps the municipal governments to effectively monitor their population and build mechanisms to react to the aforementioned sustainability-related issues that normally emerge from urban settings (Montgomery, 2008). Indeed, with reliable data for population prediction, the politicians will be able to decide how to distribute resources and where to build new infrastructure (Simpson, 2016), making the cities more sustainable and less susceptible to issues such as urban poverty and climate change.

This is analogous to the case of agriculture in China given that the accurate forecast of the quality of harvest can facilitate the selection of optimal farming practices. When farmers are able to predict the results of certain farming practices, they will be able to compare a variety of practices and choose the best one that would optimize their yield. This could lead to successful harvests without the support of chemical fertilizers (University of California, Davis, Agricultural Sustainability Institute, 2019), which will contribute in establishing a sustainable agricultural production system in the nation.

Given that the positive impact of the forecasting is noted, it is crucial to discuss a certain type of data science that would suit the particular need of the agricultural industry. A research paper called “Machine Learning in Agriculture: A Review”⁵ expounds how data science can be used to benefit the agricultural production system by facilitating “crop management [that includes] yield prediction and soil management” (Liakos, Busato & et al, 2018). This paper suggests the application of Machine Learning, which is a branch of data science that “gives machines the ability to learn without being strictly programmed” (Liakos, Busato & et al, 2018). In essence, the computer can learn to interpret complicated data and provide with accurate predictions based on the input of past data.

Yield prediction is crucial in a sense that it enables the farmers to grow crops in the most efficient manner. Machine Learning allows this process thanks to the high-performance computing technology. For instance, when a group of researchers at National University of Columbia attempted to predict the yield of coffee fruits, they designed a program that would take the type and weight of a crop, the region of its harvest, and the water input into account and automatically predict the quantity and quality of coffee fruits depending on the regions (Ramos, Prieto & et al, 2017). Another group of researchers came up with the method to use satellite images to observe the arable land, which would be input to the computer along with the characteristics of certain crops. The data about soil and crops would then be synthesized to predict the yield (Pantazi, Moshou & et al, 2016). This allows the farmers to simulate various methods of farming on computer and choose the one that is likely to produce the best yield.

⁵ Published in 2018 in a STEM-focused journal called *Sensors*.

Soil management constitutes an equally important part of sustainable agriculture since the yield heavily depends on the quality of soil. It is crucial for the farmers to manage their soil effectively by watering it properly. Data science plays a crucial role once again as it could estimate “soil drying, condition, temperature, and moisture content” (Pantazi, Moshou & et al, 2016). For instance, in the American city of Urbana, the evaluation of the soil drying was tested. The computer predicted the soil drying with the input of “evapotranspiration and precipitation data” (Coopersmith, Minsker & et al, 2014) and aided the soil management process by informing the farmers about when and how much water to put.

When applied to the Chinese agricultural industry, data science can transform the production method from the “pollute first, and then clean up” (Liu, 2010) approach to a more sustainable approach. The farmers will no longer have to rely on the chemical fertilizer as they will be able to adopt efficient farming practices that would help them to achieve the highest possible yield in a given environment. Currently, data science is being overshadowed by biotechnology as the Chinese government is giving special attention to the biotechnology industry, predicting that the biotechnology sector would exceed 4% of GDP by 2020 (Ellis, 2018), which is a significant number given that only a single technology is in charge of the share. However, in order to truly establish the system of sustainable agriculture and secure food, it is warranted that the government give equal attention to data science.

An objection may be raised due to potential inaccuracies of data science, as was the case for the urban population prediction; the inability to draw the accurate boundary around Beijing had caused a considerable inaccuracy in population prediction (Montgomery, 2008). Since the operation of data science heavily relies on the input of past data, its prediction would not be

accurate if inaccurate data are input in the first place. However, such a shortcoming can be covered in the agricultural sector as most of the data are quantifiable. The quantitative nature of the data such as weight of crop, maturation percentage of crop, and precipitation rate would minimize any subjectivity or inaccuracy. Thus, while the Chinese government should put extra care in guaranteeing the accuracy of the initial data, the possibility of inaccuracy should not hinder the governmental investment for agricultural data science.

While data science covers parts of farming that cannot be accounted by biotechnology, it does not undermine the effectiveness of biotechnology. Data science provides the farmers with yield prediction and the soil quality, which helps them to adjust their farming practices accordingly. Yet, biotechnology modifies the crop itself and makes it take the most possible nutrients from the available resources. In essence, data science and biotechnology lead to the optimal result when they complement each other since the farmers would then be able to harvest biologically-advanced crops with the efficient farming practices. Therefore, the Chinese government should invest equally in biotechnology and data science in order to develop the means for sustainable agriculture, ensuring the food security not just for China but for the world as well.

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What can we do about climate change?

Introduction:

Climate change is an issue that is gaining more and more attention as we start to see the changes on our Earth. In the stimulus material “Looking for The Gulf Motel” Richard Blanco touches on the fact that the land that used to be there is gone. He describes how he wishes nothing was lost from this urban development and that the mangroves were still there and not in the golf course. Not only are memories lost, but even lives can be lost as a result of bigger and much more spread out cities. This is just one cause of climate change that plays a big role in the extinction of many species. According to News scientist, “IF WE don’t stop climate change, half the animals and plants in the world’s wildlife havens will be gone by 2100. That’s according to a study gauging what will happen to 80,000 species in 35 of the most wildlife-rich areas, including the Amazon rainforest and the Galapagos Islands.” (Coghlan). Limiting global temperature rise to about 2 degrees Celsius would protect wildlife and limit species extinction of plants, mammals, birds, reptiles and amphibians.

The effects are dangerous now and will only increase in their magnitude if we do nothing to stop the warming of our planet. “Climatic changes already are estimated to cause over 150,000 deaths annually,” (Climate Change) which is equivalent to the population of Tallahassee, the capital city of Florida. Besides causing deaths, some effects include: shifts in precipitation, changing risk of certain types of severe weather events and changes to other features of the climate system. “In fact, an additional half a degree of warming from 1.5° C to 2 °C may cause 10 million more people to be at risk from sea level rise, several hundred million more people to be susceptible to poverty, and a 50-percent increase in the population exposed to water stress. It may double the population exposed to severe heat and cause an additional annual loss of 1.5 million tonnes of global fisheries catch.” (Ocko). Clearly, this is affecting the whole earth so it is a concern for all of us. If allowing another half a degree of warming will make several hundred million more people, which is about the size of the United States, susceptible to poverty then we have to stop overlooking this issue and work to prevent increased climate change.

Environmental Perspective:

Unfortunately, since this issue is still prevalent, we are seeing the effects. “Wildfires are increasing and wildfire season is getting longer in the Western U.S. as temperatures rise. Higher spring and summer temperatures and earlier spring snow-melt result in forests that are hotter and drier for longer periods of time, priming conditions for wildfires to ignite and spread.” (Global Warming Impacts) As a result of increased temperatures our environment is being directly impacted. These effects on forests, which cause wildfires, feed into a feedback loop. “Wildfires emit carbon dioxide and other greenhouse gases that will continue to warm the planet well into the future. They damage forests that would otherwise remove CO₂ from the air. And they inject soot and other aerosols into the atmosphere, with complex effects on warming and cooling.” (Berwyn) The only way to slow this down is to find out the major causes of this vicious cycle and work to reverse the effects of climate change across the planet.

Economic Perspective:

Americans are starting to see the effects of climate change and the public opinion is starting to change from the trends in the past. “Some 73 percent of Americans polled late last year said that global warming was happening, the report found, a jump of 10 percentage points from 2015 and three points since last March.” (Schwartz) While many agree that we should do something to counter climate change, we are limited in our immediate actions because the US oil and gas industries provide many jobs. “The US oil and gas industry’s total employment impact to the national economy in 2015, combining operational and capital investment impacts, amounted to 10.3 million full-time and part-time jobs and accounted for 5.6% of total US employment, according to a study commissioned by the American Petroleum Institute and conducted by PwC LLP.” (Editors) To counter the decrease in jobs if the use of oil was decreased, we could increase employment for renewable energy companies. “...climate solutions like renewable energy are fueling our economy and creating good, well-paying jobs. In 2016, renewable energy employed nearly 10 million people around the globe.” (Wait) Supporting companies that are striving to develop new renewable-energy sources will lead to more jobs and an increased economy surrounding this business. According to its website, Chevron “believes that encouraging practical, cost-effective actions to address climate change risks while promoting economic growth is the right thing to do.” (Chevron Policy) This is why the company is exploring renewable-energy sources such as solar, wind, geothermal, biofuels and renewable diesel to meet energy demand and use energy efficiently.

Climate change is a global issue that will never be fully controlled unless the whole world works together to put a stop to this. This should be tackled with multiple steps and actions as there is not a simple solution to reduce climate change. First, we could significantly limit the amount of trees that we are cutting down. “Every year, 33 million acres of forests are cut down. Timber harvesting in the tropics alone contributes 1.5 billion metric tons of carbon to the atmosphere. That represents 20 percent of human-made greenhouse gas emissions and a source that could be avoided relatively easily.” (Biello) Ending tropical deforestation would be an effective first step against climate change. Unfortunately, this process to stop deforestation is not plausible. According to Earth Day Network, the world’s largest recruiter to the environmental movement who works with partners in 192 countries, “The livelihoods of 1.6 billion people depend on forests. Forests provide US\$ 75–100 billion per year in goods and services.” (Deforestation) This is also hard to stop because there are national and sub-national governments as well as local communities and private companies that would have to be monitored and controlled.

Although it would not be effective, we could place a limit of one or two children per couple to reduce the number of humans that the earth has to sustain. “There are at least 6.6 billion people living today, a number that is predicted by the United Nations to grow to at least nine billion by mid-century. The U.N. Environmental Program estimates that it requires 54 acres to sustain an average human being today—food, clothing and other resources extracted from the planet. Continuing such population growth seems unsustainable.” (Biello) If a limit were to be placed, less resources would be demanded to provide for the needs of that human. As a result, less resources like oil, food, wood and land would be used to support them. Unfortunately, this limit would have negative effects over time as a result of the aging workforce. The number of those who are the most capable of work (ages 15-59) will decrease decades from now. After this, there may not be enough capable people to take care of this who can not work.

Scientists' Perspective:

In general, scientists agree that humans are the main cause of climate change whether it is through electricity and heat production, industry emissions, agriculture and forestry emissions, transportation or emissions from buildings. According to Margaret Thatcher in her Speech to the United Nations General Assembly as referenced in the stimulus material, “Put in its bluntest form: the main

threat to our environment is more and more people, and their activities: The land they cultivate ever more intensively; The forests they cut down and burn; The mountain sides they lay bare; The fossil fuels they burn; The rivers and the seas they pollute.” (Thatcher, Margaret) This source in the stimulus material helps open our eyes to the effects of something that most people seem to overlook. Many efforts to halt climate change is focused on stopping actions that we already do like burning fossil fuels. Margaret Thatcher brings up the fact that if we continue to rapidly increase the population then it will be even harder to stop these harmful actions. As the population grows we are cutting down more trees which sacrifices their long-term benefits for our short-term gain. These are practices that, in the end, will result in an irreversible effect on environments around the globe.

Carbon dioxide is a greenhouse gas that absorbs heat in the atmosphere. Concentrations of this gas are rising as more fossil fuels are burned because fossil fuels contain carbon that is being released into the atmosphere after plants pulled it out of the atmosphere. According to World Nuclear Association “Fossil fuel power plants burn carbon fuels such coal, oil or gas to generate steam that drives large turbines that produce electricity. These plants can generate electricity reliably over long periods of time. However, by burning carbon fuels they produce large amounts carbon dioxide, which causes climate change. They can also produce other pollutants, such as sulfurous oxides, which cause acid rain.” (Electricity Generation) These power plants also require large amounts of coal, oil or gas to function. On the contrary, nuclear power plants do not produce greenhouse gases and use less fuel to provide consistent and reliable supplies of energy. While they are expensive to build, they are cheap to run. Building more of these to keep up with our demands for energy would be a good step towards a healthier environment. The United States’ generates 63.5% of its power from fossil fuels and 19.3% from nuclear power plants. (U.S. Energy) In just a few decades these numbers could switch which would cut out a major section of our yearly carbon dioxide output. “In 2014, the top carbon dioxide (CO₂) emitters were China, the United States, the European Union, India, the Russian Federation, and Japan. These data include CO₂ emissions from fossil fuel combustion, as well as cement manufacturing and gas flaring. Together, these sources represent a large proportion of total global CO₂ emissions.” (global Greenhouse) These countries have an even greater responsibility to change their habits. With globe-wide participation reversing climate change would be an easier task.

Conclusion:

In the end, the goal of working to reduce the output of greenhouse gases is to protect global plant and animal habitats. Carbon dioxide is the main greenhouse gas that leads to climate change. The reason we need to do this is that weather patterns such as rainfall, tropical storms, heat waves and droughts will put others at risk of increased weather events. We should convert from fossil fuel-burning power plants to nuclear power plants to reduce the carbon dioxide that is being released through the current power plants. A limitation of this is that both types of plants provide a total of about a million jobs. Deforestation should also be reduced to a minimum because it releases tons of carbon into the atmosphere and billions of people depend on these forests. One solution that would not work is reducing the amount of children a couple can have to one or two to decrease the expected influx of humans the earth will have to sustain over time. This would lead to an aging population in which there may not be enough capable people to work and support the rest of the population who can't work. In general, if we continue to increase the greenhouse effect then it will be harder to change the path that we are headed on. We should put better practices in effect to stop increasing the effects of climate change. It is the responsibility of every country to address this issue and contribute to its solution as it will affect us all in the end as well as the upcoming generations with magnified effects.

Word count: 1,997

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Topic: Improvement

Research Question: Is it more beneficial to use resources on technological advancement that has the potential to save the environment now, or conserve the environment now, and reap the “ethical” reward of it later?

Argument: I believe that humans have the potential to improve the environment at a greater rate through the use of resources than conserving it now. We, humans have been trying to improve environment since the caveman roamed the Earth. When we planted our first seed of the future, we accidentally created a stronger environment by domesticating plants; We made fruit size bigger as a result created more seeds. In the past centuries especially the last century, we have created many ways to save the environment. We created laws and agencies use to protect and conserve the environment. We have created wildlife sanctuaries and educate students on possible effects of not caring for the environment. We care for the environment now, more than ever. Simply because, it might be the last chance for human survival.

The simplest solution is to reduce the population however we’re not going to reduce the population, just so we can save the environment. It’s considered unethical and that would be a lot of work to get a population sustainable for the environment . The scientist that have estimated the carry capacity for humans have been many times so there is no accurate carry limit, however my estimation is 5 billion. For this number, I did world population right now minus the people that are starving and estimated based on the sustainability of the environment. Back to the point, the reasons for me believing that the best way to save the environment now, is through the use of resources for ever-so advancing technology. Yes, I know it sound pretty counterproductive, but it is because of the following that could be improved, that could revolutionize how the environment can be saved. First, the transportation system, second, agriculture, and third, in my belief the strongest and last thing that can be improved is information. My idea is as ridiculous as the quote “You got to spend money to make money”. It is like our last-ditch effort/plan z, I suppose. The environment is going to give away one day, no matter if we try our hardest to conserve it or not, the human population is just too big for the environment to handle. So right now, the best thing to do is to take plausible action now, rather than conserving it; After all time is extremely valuable in saving the environment. The more time is lost the less likely we are going to save the environment

The invention of transport has brought upon many problems for the environment, A typical passenger vehicle emits about 4.6 metric tons of carbon dioxide per year. There are an estimated 1.2 billion cars in the world. That is an estimated 5.52 billion tons of carbon dioxide per year. Not to mention all the other sources of pollution. It is one of the leading causes of global warming to be more exact 30 percent in the U.S. Some people don’t think that global warming is a problem, because they won’t believe, what they can’t see, it affects things that you can’t see like acidic rain. Once our family took a trip to China.

One day, I said, it looks like it was about to rain, my uncle replied saying, it was just the smog from the factories. Me knowing how’s the weather up there, got it correct and it started to rain after several minutes. It felt like I was getting the hot and cold treatment. It stung like a million-ant bit me at once and I was standing in the rain for like 30 minutes

trying to go to our temporary home. So, personally it wasn't the most pleasant of experience but a beneficial experience that I didn't know would help me in the future.

Many people would say just switch to electric cars and we will save the environment that way. They are not wrong, but they are also not right. See, the problem with electric cars is that one the engine used in electric cars is made from an extremely rare metal. Simply because most metals that can be charged don't have the energy compacity compared to how effective lithium ion is. Not only that, it is also extremely dangerous for the environment because it uses surface mining, increasing runoff pollution. Second, the energy from the electric cars must come from a renewable energy source or it become as combat effective as a conventional combustibile car. And third, if everyone bought an electric car, we would waste more resources than how effective it is.

If we could find a way to effectively and sustainably convert one substance to another we can avoid this problem. We already can do using the particle accelerator, however the price of converting substances is way to pricey compared to its effectiveness in combatting CO₂ emissions. For a comparison for how pricey this process is, it was estimated by Glenn Seaborg, a scientist with a Nobel Prize that have researched synthesis in the 1950's, to be about 1 quadrillion dollars per ounce compared to the price of the time 560.

The second problem can be solved by increasing the effectivity of renewable energy machines. The most effective solar panel has an efficiency of 22.8%, while the average is 15-18%. The limit of efficiency a solar panel is 33.7% according to the Shockley-Queisser limit. According to World Energy Council the world produced 227 GWe of solar energy in 2015. If we could put all solar panel into maximum efficiency we could produce about 463 GWe of solar energy. A single gigawatt can power a Chevrolet Bolt, the most efficient electric vehicle, 3,571,428 miles, enough to go from the west coast to the east coast of the US about 1,275 times. 590,325 times, if we decide to use all the power.

The third problem can simply be solved by carpooling in the masses. Carpooling twice a week, would reduce 1,600 pounds of greenhouse from the air. If 100 people carpooled, we would save 1,320 pounds of carbon monoxide and 2,376,000 pounds of carbon dioxide from the air.

Agriculture has been causing the most water usage in America with the whooping 80% of the Nation's consumptive water use and over 90 percent in many Western States. With the water usage comes many problems with agriculture. Farms have been known to discharge large quantities of agrochemicals, organic matter, drug residues, and sediments causing a decrease in aquatic life, algal bloom, and nitrate oxide from lost mineral.

Poor countries in South America is vulnerable to slash and burn agriculture. It is the easiest way to create agricultural land. Many large companies have exploited poor countries, as they control a major influence in government, allowing them to use this type of farming and claim that the burning was an accident.

Simple alternatives to slash and burn agriculture is chinampas, you can create large chunks of land without the cons of habit destruction. We could use a material that could float on water anchored to land to reduce the use of material needed to create a chinampa.

There are many solutions to help minimize the problem agriculture have, Planting Field Buffers allows for less prevent nutrient loss from fields by absorbing or filtering out nutrients before they reach a water

body and protect crops from minor flooding and high winds. Aquaculture reduce the use of water and produce a low amount of runoff pollutions. Manage livestock's access to streams, help restore stream banks and prevent excess nutrients from entering the water. Improved vertical farming, the farming company Aerofarms have found a way to use 95% less water using root misting. AeroFarms' also uses reusable cloth medium made from recycled plastics to help benefit the environment.

The strongest and the closest way to protect the environment is information, everything started with the spread of information from the overthrowing of government to the gold rush of 1949. Ever since, the invention of the printing press, the people of Europe started to become more literate and gained the ultimate ability of self-thought. It has been the ultimate power plant that produce all everyday powers from smartphones to civil liberties. If we could harness the power of information, I believe that we can conquer and overcome major problem in many aspects of the environmental, political or scientific world. It connects individuals to the world of infinite possibility. From a single question stems several answers and even more questions. There was an average of 2,000,000 Google searches per minute in 2011 and that doesn't include all other search engine. If we can at least get 1/100 of the searches on an environmental level, we'll have about 20,000 people able to do something to save the future per minute. In a year, we can connect these individuals into a massive group capable of influencing politic and ideas around the globe.

There are 2 main cons to this form of improvement though. First, the upbringing of social media had led some people/groups to abuse and manipulate other people. A study conducted by the Crimes Against Children Research Center, shows that one in seven children aged 10 to 17 were victims of an online sexual solicitation of those victims 1 out of 3 of them are asked to be met personally. Not just people have exploited social media but also, government agencies and political parties have also tried to exploit social media platforms to spread false information and exercise censorship. The most relevant case is the censorship and manipulation of media in North Korea. Second, we are starting to rely on the internet to an extreme extent that we start to believe what social media tells us is true. A 2016 Pew poll found that nearly a quarter of Americans said they had shared a made-up news story. In his `experiments, MIT cognitive scientist David Rand has found that, on average, people are inclined to believe false news at least 20% of the time. If we could bring the world under a single organization, hopefully one that is as clear as glass, it could help lift media abuse, then the media has the potential to become the most powerful tool of saving the environment. It has been a difficult task to do, due to political reason but there is hope of it, after all many international representatives did meet for some time to converse on environmental problem such as the Paris agreement and the Kyoto protocol

I don't know what the technology of the future can bring us but currently at the rate we're going I believe that we can do many great things. Experimenting is the way to save the world, to sacrifice resources to gain knowledge. Experimenting has the ability to bring object to maximum efficiency. Experimentation could bring out these improvements and set the world into a better place.

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Performance Task 2

Individual Written Argument

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Overview

This task assessed the students' ability to:

- Review a packet of stimulus materials and determine a theme linking at least two of the sources
- Formulate a research question directly related to that theme;
- Conduct research and locate credible and scholarly materials relevant to answering the research question;
- Formulate a well-reasoned argument with a clear line of reasoning and a plausible conclusion;
- Evaluate counterarguments or other perspectives in the process of developing arguments; and
- Write a 2,000-word argument with claims that are logically organized and supported by credible, scholarly evidence.

Sample: A

1 Understand and Analyze Context Score: 5

2 Understand and Analyze Context Score: 5

3 Understand and Analyze Persp Score: 9

4 Establish Argument Score: 12

5 Select and Use Evidence Score: 9

6 Apply Conventions Citation Score: 5

7 Apply Conventions Grmr Style Score: 3

HIGH SAMPLE RESPONSE

The response is determined to be on-topic. The response is firmly situated in the theme of change and transformation, as it proposes implementing technological advancements to improve Chinese agricultural practices: “When applied to the Chinese agricultural industry, data science can transform the production method from the ‘pollute first, and then clean up’ (Liu, 2010) approach to a more sustainable approach.”

Row 1: Understand and Analyze Context — The response earned 5 points. The response uses Margaret Thatcher’s UN speech as an initiator into the conversation about agriculture; however, were this the only reference to the stimulus materials, it alone would not suffice. The additional implementation of the Montgomery source throughout the paper secures a higher score in this row. In particular the response stresses not only the importance of data analysis as a means to make important decisions regarding sustainability, but it also acknowledges (via Montgomery) that urbanization has and will continue to affect global climate, demanding “algorithmic forecasting model[s]” to support the current science. The response continues by explaining the benefit of having “reliable data for population prediction” in that “politicians will be able to decide how to distribute resources and where to build new infrastructure.” The response then further expands its discussion by linking the source to agriculture in China by explaining that “[w]hen farmers are able to predict the results of certain farming practices, they will be able to compare a variety of practices and choose the best one that would optimize their yield,” which not only serves as evidence within its argument but also contextualizes the pertinence of its discussion of data science.

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Performance Task 2

Individual Written Argument

Row 2: Understand and Analyze Context — The response earned 5 points. The response establishes a clear location, time, and concern (i.e., China, 21st century, and sustainability). By presenting this problem in a specific place and time, a result of the “past 50 years” and providing the scope of 1.3 billion people and feeding 22 percent of the world population, the response successfully communicates the question’s relevance as an important topic. Furthermore, the response details the historical approach the Chinese government has taken in becoming a global economic power and the effects those decisions have had on their own citizenship and landscape.

Row 3: Understand and Analyze Perspective — The response earned 9 points. The response not only includes multiple perspectives — Chinese farmers, the Chinese government, benefits of biotechnology, benefits of data science — but also brings those perspectives into thoughtful dialogue. For example, the response discusses the growth of the agricultural industry in China and uses the implications (i.e., “pollution”) to introduce the government’s need to address such environmental degradation.

Further, the response overcomes the limitations of data science by first acknowledging them and then explaining how the nature of agriculture mitigates the accuracy problems: “Since the operation of data science heavily relies on the input of past data, its prediction would not be accurate if inaccurate data are input in the first place. However, such a shortcoming can be covered in the agricultural sector as most of the data are quantifiable. The quantitative nature of the data such as weight of crop, maturation percentage of crop, and precipitation rate would minimize any subjectivity or inaccuracy. Thus, while the Chinese government should put extra care in guaranteeing the accuracy of the initial data, the possibility of inaccuracy should not hinder the governmental investment for agricultural data science.” The conclusion of the response acknowledges that while it calls for the implementation of data analysis, big data remains imperfect and has at times been shown to be unreliable. Mentioning this limitation demonstrates the kind of appraisal and calculation of various ideas that a high score in this row requires.

Row 4: Establish Argument — The response earned 12 points. Although the response’s organization is not signposted with explicit section titles, the paper’s organizational structure supports a logical line of reasoning. Moving from the context provided in the introduction, the paper examines the technological considerations before moving into a conversation about data science. Using the information about sports and business to perform predictive analytics at first seems irrelevant, but the response uses these as ways to understand the “predictive capacity of data science” and then moves into a conversation of applying this method to sustainability and urbanization. Specifically, it examines how these pertain to agricultural practices. The response then includes a conversation about a potential objection before concluding.

Within the individual paragraphs, the response’s line of reasoning is primarily sustained through the commentary. Sentences, such as “[t]herefore, the improvement on the crops’ ability to absorb nutrients would not necessarily lead to the optimal outcome” from page 4, demonstrate effective engagement because the response evaluates the many factors that go into improving crop yields to determine that the use of biotechnology to maximize nutrient absorption is not sufficient to achieve sustainable agricultural practices.

The response arrives at a conclusion that satisfies the question about how China should utilize data science to establish sustainable agricultural production systems. The entirety of the response aims to evaluate the efficacy of data science in an agricultural context; thus, its conclusion is supported by ample evidence and commentary.

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Performance Task 2

Individual Written Argument

Row 5: Select and Use Evidence — The response earned 9 points. The response draws from a multitude of academic sources including scientific journals and government agencies and provides commentary for sources that are not immediately relevant. For example, while it uses sources about Amazon and athletes to introduce the use of data science, it explains that “[b]usiness and sports are by no means the only fields where the predictive capacity of data science is employed, as it is also used to tackle sustainability-related problems.” Further, the response ties together the works of various sources in a deliberate and clear conversation about the issue as in the discussion about yield prediction citing Ramos’s work in Colombia predicting coffee fruit yields and the availability of Pantazi’s experiments with satellite imagery to observe farmland for production predictions. The response also provides the credibility of sources in the narrative, including references to the Chinese Academy of Agricultural Sciences and researchers from the National University of Columbia [sic].

Row 6: Apply Conventions (Citation) — The response earned 5 points. The reference sheet is complete and consistent. Although minor formatting flaws, such as the line breaks in the entries for Ellis, the National Bureau of Statistics of China, and Patton, are present, the response demonstrates a high level of understanding of citation conventions. The format and essential elements of the in-text citations are consistent throughout, and every work cited has a corresponding entry on the reference page, thereby illustrating consistent evidence of linking. While the response misspells “Columbia” in the National University of Colombia citation, the minor mistake does not interfere with the functionality of the attribution.

Row 7: Apply Conventions (Grammar and Style) — The response earned 3 points. The response makes use of various resources of the language in order to communicate academically. The precision of word choice paired with appropriate terminology for the topic reflect a strong facility with the language. Sentences are effectively written throughout with the consistent use of transitional phrases to move into new paragraphs and strong transitional words to move from one idea to another within paragraphs. Additionally, longer sentences or those with many stylistic choices that often become unwieldy in mid-range responses, here demonstrate a clear command of conventions and convey the sentiment without impediment. Take, for example, the sentences that comprise the first paragraph on page 7. This sophisticated use of language contributes to the overall strong style of the response.

Sample: B

1 Understand and Analyze Context Score: 0

2 Understand and Analyze Context Score: 5

3 Understand and Analyze Persp Score: 6

4 Establish Argument Score: 8

5 Select and Use Evidence Score: 6

6 Apply Conventions Citation Score: 3

7 Apply Conventions Grmr Style Score: 2

MEDIUM SAMPLE RESPONSE

The response is determined to be on-topic. The response centers itself around a discussion of changing current practices “to reduce the output of greenhouse gases ... to protect global plant and animal habitats,” which is firmly situated in the stimulus packet’s overarching theme of transformation and change.

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Performance Task 2

Individual Written Argument

Row 1: Understand and Analyze Context — The response earned 0 points. While the response does include both the Blanco poem and the Thatcher speech, it does not meaningfully integrate either into its argument. For example, the response begins by discussing the Blanco poem, but it pivots away from the poem into its own topic by saying that “[n]ot only are memories lost, but even lives can be lost as a result of bigger and much more spread out cities.” Thus the inclusion of the poem only serves as a tenuous jumping-off point for the response’s discussion of climate change.

Later, the response includes a quote from Thatcher but just repeats what Thatcher says in the quote. Moreover, it situates the quote in the “Scientists’ Perspective” section, indicating that the student does not understand the context from which the Thatcher speech came. Also, the response uses Thatcher’s ideas from 1989 to discuss the status of climate change as it stands in the present.

Row 2: Understand and Analyze Context — The response earned 5 points. The response provides sufficient detail to establish the significance of the research question by including statistics about the urgency of climate change; for example, it notes “IF WE don’t stop climate change ... 80,000 species in 35 of the most wildlife-rich areas, including the Amazon rainforest and the Galapagos Islands” will become extinct by 2100. It also articulates the specific need for “[l]imiting global temperature rise to about 2 degrees Celsius [which] would protect wildlife and limit species extinction of plants, mammals, birds, reptiles and amphibians.” Finally, the response discusses the effect on humans who can experience further loss than the “150,000 deaths annually” that already occur.

Row 3: Understand and Analyze Perspective — The response earned 6 points. While the response includes different lenses and perspectives, it only acknowledges basic agreement and disagreement among them. For example, on page 2, the response includes, “While many agree that we should do something to counter climate change, we are limited in our immediate actions because the US oil and gas industries provide many jobs.” Similarly, on page 4, the response cites basic agreement and disagreement: “These power plants also require large amounts of coal, oil or gas to function. On the contrary, nuclear power plants do not produce greenhouse gases and use less fuel to provide consistent and reliable supplies of energy.”

While the response does sometimes acknowledge limitations with particular efforts to respond to climate change, such as when it states that a limit on the number of children per couple “would not be effective,” it neither expands on why that limitation exists, nor does it attempt to integrate that limitation into its argument.

Row 4: Establish Argument — The response earned 8 points. Although the response attempts to demonstrate a logical organization by use of the section titles, it does not elaborate on the relationship between one topic and the next. Further, it includes some faulty reasoning in the body. For example, without more context, the information contained in the “Environmental Perspective” section is illogical in its line of reasoning. The response claims that “since this issue is still prevalent, we are seeing the effects” without presenting scientific evidence which validates the notion that wildfires are a result of human-induced climate change. Still, the paper moves forward its argument by providing evidence to support the notion that “we have to stop overlooking this issue and work to prevent increased climate change.” Including the environmental, economic, and scientific considerations demonstrates a sound approach to examining the issue since they cover the scope of relevant topics. Including evidence, such as that cited from Electricity Generation and Global Greenhouse on page 4, drives the response’s position forward.

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Performance Task 2

Individual Written Argument

Additionally, the solution provided does not include sufficient detail for a reader to assess its plausibility. Though a clear attempt at providing such details is present, such as the limitations of “reducing the amount of children a couple can have to one or two to decrease the expected influx of humans the earth will have to sustain over time,” the context for which this potential solution would serve as reasonable is absent. The other solutions are presented as requiring minimal effort without any specificity of how to implement them, thereby only partially addressing the paper’s thesis.

Row 5: Select and Use Evidence — The response earned 6 points. Many of the sources are relevant and some, the World Health Organization and the EPA, are considered credible. The remaining sources, although less academic, do demonstrate an understanding of choosing relevant sources which engage with the topic. While the response does use a variety of evidence, it is dominated by sources that are not scholarly. The response includes information from publications that are not obviously credible but does not provide commentary to clarify why the sources are appropriate or relevant. For example, the inclusion of the Chevron would require commentary to clarify its inclusion to earn a high score. Moreover, the sources that have questionable credibility are not outweighed by a preponderance of scholarly sources.

Beyond the choice of sources, the use of the sources is also problematic. While the response does engage with evidence, it often uses large quotes that are not integrated into the response’s argument so that the quoted material actually supports that argument. For example, the second paragraph on page 4 is comprised almost entirely of evidence with only minimal commentary. Similarly, the entire environmental perspective on page 2 is comprised primarily of quotes without enough commentary to show how those sources are important.

Row 6: Apply Conventions (Citation) — The response earned 3 points. Although the student did implement a style, it is not always applied consistently: For example, while most of the parenthetical citations use the author’s last name or the first words appearing in the bibliographic entry, the reference to Margaret Thatcher appears as Thatcher, Margaret. Also, the reference to Global Greenhouse is not capitalized in the same manner as such a rule is applied elsewhere. On page 1 the parenthetical citation appears in the middle of a sentence and some, such as the Ocko reference, are both preceded and followed by a period. In the bibliography, however, there is consistency in applying format decisions.

Row 7: Apply Conventions (Grammar and Style) — The response earned 2 points. While the response is understandable, it sometimes lapses into a tone inappropriate for an academic context. For example, the repeated use of “we” in the conclusion reads as more conversational than academic. The writing is also clumsy at times: “To counter the decrease in jobs if the use of oil was decreased, we could increase employment for renewable energy companies. ‘...climate solutions like renewable energy are fueling our economy and creating good, well-paying jobs. In 2016, renewable energy employed nearly 10 million people around the globe.’ (Wait).” The introductory clause, with an infinitive phrase followed by a dependent clause, becomes unwieldy and difficult to follow; moreover, this excerpt demonstrates an attempt to move away from one sentence that should introduce the content of the next, but does so in an inelegant way.

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Performance Task 2

Individual Written Argument

Sample: C

1 Understand and Analyze Context Score: 0

2 Understand and Analyze Context Score: 0

3 Understand and Analyze Persp Score: 0

4 Establish Argument Score: 0

5 Select and Use Evidence Score: 0

6 Apply Conventions Citation Score: 0

7 Apply Conventions Grmr Style Score: 0

LOW SAMPLE RESPONSE

This response is determined to be on-topic. Although the integration of the source material is unsuccessful, the response is broadly related to the theme of change and transformation, especially through the use of technology. For example, the response talks about changing transportation by “switch[ing] to electric cars” and “carpooling in the masses.”

Row 1: Understand and Analyze Context — The response earned 0 points. The response neglects the requirement to incorporate any of the stimulus material, even though the Kessler piece is listed as a reference. The slight hint toward the Kessler article might be inferred when the response states that “the upbringing of social media had led some people/groups to abuse and manipulate other people” on page 3; however, the mere implication does not contribute to the argument being made. Further, the minimal engagement fails to suggest an accurate understanding of the source materials.

Row 2: Understand and Analyze Context — The response earned 0 points. The response makes many unsubstantiated assertions and broad, generalized statements (e.g., “We, humans have been trying to improve environment since the caveman roamed the Earth” and “The scientist that have estimated the carry capacity for humans have been many times so there is no accurate carry limit, however my estimation is 5 billion”) without explanations or evidence to authenticate the information and indicate the significance of the research question.

Row 3: Understand and Analyze Perspective — The response earned 0 points. Alternate perspectives, when presented, are done so as personal opinions (e.g., “The environment is going to give away one day, no matter if we try our hardest to conserve it or not, the human population is just too big for the environment to handle. So right now, the best thing to do is to take plausible action now, rather than conserving it”) or as assertions without supporting evidence (e.g., “the problem with electric cars is that one the engine used in electric cars is made from an extremely rare metal”).

Moreover, connections and actual identifications of “we” and “many people” are never made clear, thereby rendering the references overly simplified and vague. Further, no valid comparisons between these views are established to determine in what ways they are similar or different in relation to the research question.

Row 4: Establish Argument — The response earned 0 points. The response is filled with claims that are really no more than personal opinions. When the response claims that “[t]he simplest solution is to reduce the population however we’re not going to reduce the population, just so we can save the environment. It’s considered unethical and that would be a lot of work to get a population sustainable for the environment,” the response never provides a valid example or cites a source to validate the claim. Additionally, the response states, “My idea is as ridiculous as the quote ‘You got to spend money to make money’” without explaining what the response means by this idea.

AP[®] SEMINAR

2019 SCORING COMMENTARY

Performance Task 2

Individual Written Argument

The organization is not fluid, as the response jumps from one idea to another. While the response does use “first,” “second,” and “third” to delineate the problems suggested, it does not have a solid structure for the argument. Even in the discussions within paragraphs, there is a lack of cohesion; for example, the response moves from discussing vehicles estimating “about 4.6 metric tons of carbon dioxide per year” to “[s]ome people don’t think that global warming is a problem” to an anecdote regarding the weather. The response shares about “a trip to China” citing that “personally it wasn’t the most pleasant of experience” without explaining the relevance of the anecdote to vehicle emissions or global warming mentioned earlier in the paragraph.

The response’s conclusion, which is solely opinion, lacks relevance and makes overgeneralized summations. The response shares that “at the rate we’re going I believe that we can do many great things” and that “[e]xperimenting is the way to save the world, to sacrifice resources to gain knowledge.” These are neither substantiated nor supported in the body of the paper.

Row 5: Select and Use Evidence — The response earned 0 points. While the response does mention some different groups/people, it neither provides citations linking to a particular source nor expounds upon the information in order to relate to the claim. For example, the response notes that “A study conducted by the Crimes Against Children Research Center, shows that one in seven children aged 10 to 17 were victims of an online sexual solicitation of those victims 1 out of 3 of them are asked to be met personally,” yet the response never explains how this is relevant to the stated research question regarding the benefit of using technological resources to save the environment.

When looking at the selection of sources listed in the bibliography, there is a dearth of relevant sources. In fact, the response uses a Prezi created by other responses as one of the sources. Further, because the response uses no in-text or parenthetical citations, it is difficult to know if the sources were even used in the paper. While this seems under the purview of rubric row 6, the lack of citations renders it impossible to evaluate if the sources used are appropriate to support the claim.

Row 6: Apply Conventions (Citation) — The response earned 0 points. There is a lack of internal citations throughout the paper. While the response does mention some different groups/people, it does not provide citations linking to a particular source nor is the information expounded upon in order to relate to the claim. For example, the response notes that “A study conducted by the Crimes Against Children Research Center, shows that one in seven children aged 10 to 17 were victims of an online sexual solicitation of those victims 1 out of 3 of them are asked to be met personally,” yet it is not clear from which of the provided sources listed in the bibliography it comes.

Row 7: Apply Conventions (Grammar and Style) — The response earned 0 points. This response has many grammatical flaws making the reading difficult to understand at times. For example, the response is unclear when stating, “The environment is going to give away one day, no matter if we try our hardest to conserve it or not.” Further, the response’s syntactical construction is consistently lacking, as in the following sentence: “Some people don’t think that global warming is a problem, because they won’t believe, what they can’t see, it affects things that you can’t see like acidic rain.”

The tone of the piece is consistently inappropriate for an academic paper. For example, after explaining how the response came to the stated population totals, it states that “My idea is as ridiculous as the quote ‘You got to spend money to make money’. It is like our last-ditch effort/plan z, I suppose.” The conversational, colloquial language and use of second person are inappropriate for an academic paper.