

Service Learning Scenario #4 Environmental Quality Investigation

Set up – Your students conducted the Environmental Quality Investigation for Middle and High Schools. In the Transportation section, they found that the school buses usually idled ten minutes or longer while parked outside the school, thus emitting noxious diesel fumes and particulate emissions (black smoke) while the students loaded onto the buses. During their environmental audit students also noted that many students complained about being sleepy or tired in certain classrooms no matter what time of day they had to attend a class in those specific rooms. Could there be an environmental reason or cause of their drowsiness? They also found all the cleaning products contain toxic substances which would cause harm if used improperly or during disposal. Are there “greener” cleaning products that may be used instead that are just as effective?

And finally, students noted that several classrooms were very drafty and wondered if new windows or storm windows would help eliminate drafty areas?

Question – What types of service learning projects can be designed using these findings?

Finding #1 – Research the possibilities for reducing emissions from the busses. Can a work practice be changed to reduce the noxious emissions? Investigate the fuel efficiency of the busses, the amount of fuel consumed during the idling and the overall cost of those practices to the district (fuel cost). Are there grant funds available to help clean up diesel emissions? Is the school willing to help reduce diesel emissions in areas where students congregate? What would it take to get a “cleaner burning” bus – compressed natural gas, and are there grant funds available to fund a new bus? Are there benefits that are hard to quantify (maybe quality of life issues or shorter wait lines for car riders who normally have to wait behind the busses)?

Finding #2 – Survey the students and teachers and identify the worst classrooms for falling asleep. Next step is to set up air quality monitoring. Are classroom oxygen levels high enough, or is the air circulation so bad that classroom CO2 levels are putting students to sleep. What have other schools done to increase air circulation, and “freshen” or oxygenate classroom air? See if the students can link drowsiness to poor air circulation and elevated levels of CO2 in the classrooms.

Finding #3 – Research alternative cleaning products. See if there is any information available on results of switching to more environmentally friendly cleaning products, and were they as effective at cleaning or disinfecting? Visit with janitorial staff to see how they are using the products, and educate the staff as to the downside environmentally of using the toxic cleaners versus using more environmentally friendly cleaners. Contact a company that produces the less toxic cleaning agents and see if that company will help the students make the change to more environmentally friendly products?

Finding #4 – Students can seal the windows to determine if that will affect the drafty areas possibly solving the air seepage problems. Perform a cost/benefit analysis to see if replacing the windows with more energy efficient windows not only could solve the draft problems, but could the cost of replacing the windows be covered with the energy savings generated from making the areas “tighter”?