Combating Misconceptions About Nuclear Power

Jason Beliveau, Mike Blaess, John Jenkins, Ben Mininberg
Advisor: Professor David Spanagel (Humanities and Arts Department)

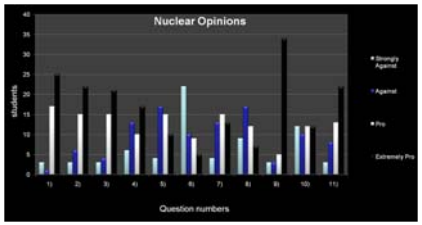
Against Common Knowledge

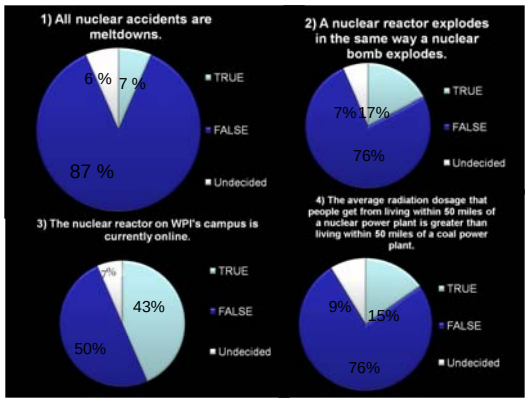
People and animals that live close to nuclear power plants do not receive the amounts of radiation that leads to mutations or death

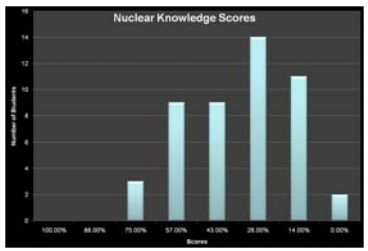
Coal mines can produce more radiation than nuclear waste by bringing uranium to the surface

Nuclear power plants are not an easy target for terrorists. They have multiple security measures and run safety tests frequently

Survey Analysis







Abstract

The long-developing energy crisis is now upon us, and we need cleaner and more sustainable energy sources. Nuclear power is one such possible power source, but it has faltered in the United States. Since the Three Mile Island accident in 1979, no new nuclear power-plants have been built in the U.S. We believe the lack of support for nuclear power in the U.S. stems from an overall fear of the technology based on a lack of knowledge about the technology. We realized that nuclear power could not become a widespread power source in the U.S. without educating people about it and combating many common misconceptions people have about it. We designed a knowledge and opinion based survey to quiz WPI students on their nuclear awareness. Using data we gathered from students' quiz answers, we were able to identify some of the most common misconceptions about the nature and perceived danger of nuclear power. With our data we were able to create an outline for an educational course on nuclear power including all the sources needed to create a robust and informative one- or two-hour course. The proposed course would combat commonly held misconceptions about nuclear power in an effort to increase nuclear awareness and favorably change opinions towards nuclear technology as a feasible power source.

Format for a Source on the Syllabus of Suggested Course Materials

Title of *(Book)*

Source

<Citation of source using MLA format>
Link to Webpage for reference to Article in electronic database.

Abstract:

The Abstract is a brief summary of the main points of the article. It is designed for the Professor to quickly determine the information in the article.

Learning Objectives

Learning Objectives are brief statements about the central focus of the discussion session.

Discussion Question

These questions are designed to broaden the students' knowledge of nuclear power while combating misconceptions.

Goals/Methodology

Goals

1. Combat misconceptions about nuclear power.
2. Understand the opinions and knowledge at WPI.
3. Create a type of informational program from which professors can extract information and develop lesson plans.

Methodology

1. Conduct a survey and a test to better understand the opinions and knowledge of Nuclear Power at WPI.
2. Develop a syllabus of suggested course materials and format in a way that a professor can create lessons from.

Preliminary Conclusion

The results of the opinion-based part of our survey show that the majority of the polled WPI students are comfortable with the idea of having a nuclear reactor on campus or near their home. We also found that the majority of those polled felt they were reasonably educated about nuclear power, and the majority also supported nuclear power use within the United States. Information gathered from the knowledge-based portion of the survey shows that the majority of the people surveyed did not have good grasp of the historical and practical information about nuclear power. Surveyed students struggled to get four or more of the seven questions correct. Our entire project posits that good strong knowledge in a subject is crucial to forming an opinion on it, and our quiz shows that there is a lack of knowledge on fundamental aspects of nuclear power.

The Next Step

The final product of our project is the syllabus itself. The next step would be to have our course implemented. We could start by having the course presented by a WPI professor in a classroom setting, allowing us to get feedback on the course. The ultimate goal would be to develop a highly refined course that could be distributed to teachers across the country to teach as a either a standalone session, or integrated into a further course. By making the course widespread, we would hope to greatly educate college and high-school age students about the realities of nuclear power so they could form much more informed and educated opinions about the technology.