

Revolt and Idealism

What are revolt and idealism?

Revolt and idealism are related tools during adolescence. Students both resist the adult world and shift to find a place within it, and they desire to see it as better than it is. Revolt implies an ideal, whose absence justifies the revolt.

In this dynamic we can see an important cognitive tool: the ability to imagine a world or particular circumstances that are superior in some way to the reality the students experience, to recognize those features of the adult world that prevent their ideal's being realized, and to revolt against them. And how can we use this cognitive tool in everyday teaching? Well, in nearly every topic we teach, math no less than in history, there will be examples of conventions or obstructions that prevent the achievement of some ideal, and there will also be someone or some idea prevailing against the conventions or obstructions.

How can we engage the revolt and idealism tools in teaching?

Topic: Sportsmanship

Subject Area: Physical Education

Cognitive Tool: Revolt and Idealism

It is fair to say that students learn little about the history of the activity or sport they are playing in most PE classes—rather, they just play. An introduction to the history of sport could be useful in various ways when one is concerned with students' imaginative engagement. Through a brief introduction of the history of sport, students' sense of revolt and idealism can be engaged in learning more about sportsmanship. Consider how sport was originally preparation and training for war. Javelin, for example, was a sport aimed at increasing a soldier's ability to launch a spear with strength and precision. In modern times, we don't engage in sports for these reasons, as much as for development of the body or pleasure. From ancient times, many rules have been introduced in sport to protect people. Despite the obvious benefits of rules as a means of protection and safety, there is a constant revolt in sport against the rules. Fighting, for example, has become an almost universally accepted part of hockey. We might frame a discussion on sportsmanship in terms of what kinds of behaviour demonstrate the "ideal" of sport? What kinds of behaviour "revolt" against this ideal? Why are some forms of revolt accepted in some contexts (e.g. fighting in hockey) and not in others (e.g. fighting in basketball).

Topic: Boyle's Law

Subject Area: Science

Cognitive Tool: Revolt and Idealism

This cognitive tool will invite us to expose students not simply to the law itself but to Robert Boyle's struggle against conventional ideas, and particularly against the prevailing belief

(argued by Descartes and Hobbes among others) that a vacuum could not exist. The great authorities claimed that ether pervaded space. Boyle's experiments couldn't locate this ether, so he dismissed it—and it has stayed dismissed! The students might also be reminded that since Aristotle's time, and before, it was believed that everything was made up from the four elements of earth, air, fire, and water. Instead, Boyle argued that matter was made up from different combinations of tiny primary particles, which is how we still conceive of matter. Just a small amount of background of this extraordinary Irishman, and a sense of his struggles against fixed beliefs and orthodoxies, can engage students' imaginations in his discoveries that transformed chemistry and changed our understanding of our world in important ways.

Topic: DNA

Subject Area: Science

Cognitive Tool: **Revolt and Idealism**

Watson, Wilkins, Crick and Franklin are the heroic scientists whose work led to the discovery of DNA and its properties. Four scientists—why only three Nobel Prizes? What happened? Many voices have argued that the Nobel Prize should also have been awarded to Rosalind Franklin, since her experimental data provided a very important piece of evidence leading to the solving of the DNA structure. Did Rosalind Franklin's gender have any influence on the decision to exclude her?) In a recent interview in the magazine *Scientific American*, Watson himself suggested that it might have been a good idea to give Wilkins and Franklin the Nobel Prize in Chemistry, and him and Crick the Nobel Prize in Physiology or Medicine – in that way all four would have been honored.

By the way, Rosalind Franklin died in 1958. As a rule only living persons can be nominated for the Nobel Prize, so the 1962 Nobel Prize was out of the question. The Nobel archives, at the Nobel Prize-awarding institutions, which, among other things, contains the nominations connected to the prizes, and these are held closed. But 50 years after a particular prize had been awarded, the archives concerning the nominees are released. Therefore, in 2008 it was possible to see whether Rosalind Franklin ever was a nominee for the Nobel Prize concerning the DNA helix. The answer is that no one ever nominated her – neither for the Nobel Prize in Physiology or Medicine nor in Chemistry.

Why do revolt and idealism engage our imaginations?

During their teen years, students are exploring the roles they will take in the adult world and simultaneously resisting those roles. The early years tend to be powerless; students are told what to wear, how to behave, what to believe, and so on. As they grow through puberty, the constraints that hem them in remain despite the increasing independence they feel, even if initially only in small ways.

The revolt or resentments that students commonly feel are also fueled by their sense of an ideal world or circumstances. It is the denial of their ideal that leads to the revolt against those who deny them. But this is also the time at which students begin to form not only simple ideals

about the kind of freedom that would allow them to color and shave their hair as they wish but also about the world at large. They would like the world to be peaceful, they would like people to stop polluting the environment, and so on. The adult world's continuing war and pollution stimulate more general and diffuse revolts.

In the imaginative classroom, students will learn about the human struggles associated with the topic. Teaching the arts in general, of course, provides an embarrassment of riches in seeing works of literature or other arts as having struggled, in the lives of their creators, against the barriers of convention and opposition of one kind or another. And much the same is dramatically true of the sciences as well. It is no great strain to provide some small background information to show what the artist or scientist was up against. Like all these tools, however, it won't be equally useful in all cases, and in some won't be of any use at all. But the imaginative teacher will be alert to the struggles people have undergone to bring into reality their ideals, usually in the face of opposition, abuse, and derision.