

# **Arguing to Learn**

by Dr. Jay L. Wile and Diana Waring

## **In Science Education, which is the best learning activity?**

1. An experiment
2. A group project that produces a report
3. A group discussion in which different views on the subject are debated

Group discussions in which different views are debated consistently produce the most learning gains.

This is true even when one of the views is known to be incorrect!

“Research has demonstrated that teaching students to reason, argue, and think critically will enhance students’ conceptual learning. This will only happen, however, if students are provided structured opportunities to engage in deliberative exploration of ideas, evidence, and argument...”

[Jonathan Osborne, "Arguing to Learn in Science: The Role of Collaborative, Critical Discourse," *Science* 328:463-466, 2010]

## **Why do homeschool graduates do so well in college?**

Grade Point Averages:

- Boston University: 3.3 compared to 2.9
- University of St. Thomas: 3.46 compared to 3.16
- Baylor University: 3.36 compared to 3.04
- York Technical College: GPAs of 2.99 compared to 2.67

At least one reason is that they tend to engage in argumentation because they regularly go against the mainstream view.

The ETS Proficiency Profile is a test given on 261 college campuses nationwide. It covers several subjects, from the humanities to the natural sciences. There is only one college whose students have earned a #1 ranking in every subject in a single year. That year was 2011, and that college was Patrick Henry College. Once again, PHC tends to argue with the mainstream a lot!

## **This Has a Spiritual Dimension**

Dr. Kara Powell (Fuller Theological Seminary) headed up a study of 500 youth-group graduates during their first three years in college. One of the main findings was that students who felt free to express doubts about their faith in youth group are more likely to be strongly active in their faith than those who did not.

[<http://www.christianitytoday.com/women/2012/september/steve-jobs-back-to-school-and-why-doubt-belongs-in-your.html>]

A study of almost 2,500 young people started when they were 13-17 years old and followed them over a period of 6 years. Those who expressed no doubt about their religious faith during

the first series of interviews were only 28% likely to still be strongly active in their faith after 6 years.

[Christian Smith, *Souls in Transition: The Religious and Spiritual Lives of Emerging Adults*, Oxford University Press 2009, p. 212]

Doubting causes you to “argue with yourself,” which makes you think more deeply about and learn more about your faith.

“He whose Faith never Doubted, may justly doubt of his Faith.”  
-Robert Boyle (the father of modern chemistry)

### **Red Sea Crossing?**

In the Biblical text, Exodus 13:18 is translated:

“So God led the people around by the desert road toward the Red Sea.”

NIV Study Bible text note: Or the Sea of Reeds. Various locations of the crossing have been proposed along the line of the modern Suez Canal and including the northern end of the Gulf of Suez.

Others, primarily non-academics, have proposed alternatives.

Ron Wyatt: Discovered—Noah’s Ark

Larry Williams: The Mountain of Moses

Bob Cornuke: In Search of the Mountain of God

Howard Blum: The Gold of Exodus

Sea of Reeds? Red Sea: Gulf of Suez? Gulf of Aquaba? The Sinai Peninsula?

### **Practical tips for doing this at home.**

Read theologies that are different from your own.

Are you a Calvinist? Read an Arminianist. Are you an Arminianist? Read a Calvinist.

What if it changes your mind?

Read and ask questions. Don’t be afraid!

“Do not quench the Spirit; do not despise prophetic utterances.

But examine everything carefully; hold fast to that which is good.”

-1 Thessalonians 5:19-21

We don’t want to burden you! Don’t make a new course for this. Just have your students examine controversies that they run into in the courses they are studying now.

### **Examples**

In history, if you plan to do a study on Thanksgiving, choose a book like

*The First Thanksgiving* by Dr. Tracy McKenzie

instead of the same old textbook. It gives a synopsis of what we actually know about the first Thanksgiving, which is surprisingly little!

Look for science curriculum that covers controversial subjects:

- Creation/evolution
- Global warming
- Vaccinations
- Ozone depletion
- Chemtrails
- Geocentrism

One thing to remember is that academic controversies are not knock-down slug outs.

Some are even fun! How about the Oxford Comma controversy?

I would like to thank my parents, Jesus, and Reverend Johnson.

Without the Oxford comma:

I would like to thank my parents, Jesus and Reverend Johnson.

### **Here's the Model**

Dr. Wile received a note from a student several years ago. It read in part:

“I switched my major from music and nutrition to a double major in biology and chemistry...I graduated from Winthrop University summa cum laude this past May and this fall I will begin graduate school at Harvard University in the Biological and Biomedical Sciences PhD program.”

Here's what he really liked, however:

“I am not sure exactly where I stand on the whole creation/evolution debate, ***but I know that the more I study God's Word and His creation, the closer I will come to the truth.***”

This reminded me a lot of a famous quote by Lord William Thompson Kelvin:

"Do not be afraid of being free thinkers. If you think strongly enough you will be forced by science to the belief in God, which is the foundation of all Religion. You will find science not antagonistic, but helpful to Religion."