

Science: Chemistry and Wonder

What is there were moments of wonder in chemistry?

Josh taught high school science and wanted his class to appreciate the beauty of chemical structures, not just learn them for an test. He wanted them to see the beauty in the ordinary as well as in the extraordinary. He often heard the phrase “So what?” in the corridor, and it saddened him that students were not more amazed by the world around them. He wanted them to experience some wonder at what God had made.

“I started the lesson on salts with a slide show of images of salt ranging from crystals to salt lakes. Underneath every amazing photograph I put the heading ‘Just Salt.’ I talked briefly about how amazing salt is. I wanted to start with a ‘wow’ and stimulate the students to see the beauty in chemistry; too often it is seen as dry formulas.

“I didn’t change much of the rest of the lesson, but I did change the worksheets the students used. I put in a global heading, ‘Just Salt?,’ to one side to remind the students that ‘Just Salt’ was an incredible substance. I checked the displays and made sure I had good images of salt displayed; they also had the heading, ‘Just Salt?’”

What's going on here?

Josh saw chemistry as something that evoked awe and wonder at God’s world and a sense of reverence. He encouraged attentiveness to creation.

He engaged students by providing an experience of dissonance (between image and label) and encouraging a response of wonder and reflection.

He reshaped his practice by changing the way he introduced and framed the class, selecting images and captions to evoke wonder, and following through this emphasis on the display and worksheets.

What does this have to do with faith, hope, and love?

Josh's faith meant he saw an everyday substance, salt, as an object of wonder. Faith changes the way in which Christians see the world: for Christians, it is God's world bearing the marks of a wise and good creator, even though the world is not now as God intended. A "So what?" attitude refuses to be impressed by the splendor and complexity of creation and can't rise above the mundane and experience wonder.

What difference does it make?


By setting up dissonance using the title "Just Salt" followed by amazing images, Josh was challenging the "So what?" attitude that he saw among his students. The images he used offered students a different way of experiencing the lesson content.

Where do we go from here?

The poet Francis Thompson talks of us being estranged from the world and missing the "many-splendored thing." Teachers can create moments of wonder in any subject so that students can experience the "many-splendored thing." That means there is potential for a spiritual experience in any subject.

Digging deeper

The "So what?" attitude can lead to a carelessness toward both the planet and its people. In contrast, an attitude of respect and wonder can lead to praise of God and care for what he has made. The psalmist (Psalm 19:1) sees the heavens, and for him the stars speak of the glory of God. They are not "just stars." The poet Elizabeth Barrett Browning talks of the earth being "crammed" with heaven for those with eyes to see. For those who look with the eye of faith, God is in the ordinary and the extraordinary; God's fingerprints are all over the world. Such looking can lead to reverence.



*Earth's crammed with heaven,
And every common bush afire with God,
But only he who sees takes of his shoes,*

*The rest sit round it and pluck blackberries.
From "Aurora Leigh," by Elizabeth Barrett Browning*

Mention spirituality and most people think in terms of something vague and other-worldly. In contrast, the spirituality of the Bible is a very grounded one. Matter — the stuff of this world — was given the thumbs-up by God at creation when he declared the world "very good" (Genesis 1:31). A relationship with God is expressed through the body and its senses, through thoughts, through people, and through the things of this world. Experience of God often comes the same way. For Moses it was a burning bush that he could have ignored, but he chose to turn aside and investigate it (Exodus 3:2-3). Francis Thompson and William Wordsworth both expressed the idea that "heaven lies about us."

*The angels keep their ancient places; —
Turn but a stone, and start a wing!
'Tis ye, 'tis your estrangèd faces,
That miss the many-splendored thing.
from "The Kingdom of God," by Francis Thompson*



Previous: Patterns and Wonder
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Next: Meeting Parents
What id meetings with parents fost...

