

Teaching Creativity and Higher Order Thinking to Middle Schoolers

An Interdisciplinary Approach

by Ariana L. Wohl

The most incomprehensible thing about the world is that it is at all comprehensible.

—Albert Einstein

The test information booklet said it all. I had ambitions of teaching secondary history or social studies, and the Massachusetts MTEL licensing exam in political science/political philosophy was the final hoop. Nearly done with my pre-service training and eager to begin teaching, I slid open the test preparation materials to map out a review plan. I quickly discovered, however, that my review study would be cursory at best, a shot in the dark at worst. As a candidate for licensure, I was expected to show proficiency in political philosophy, U.S. government and civics, comparative government, international relations, history, geography, and economics. That evidently meant knowing something about everything from social contract theory to McCarthyism, the Sino-Soviet split to the influence of mass media on electoral politics, and, most broadly, “major developments in the arts, literature, philosophy, religion, science, and technology” across the globe and over all of time.

In short, as a new social studies teacher, it felt as though I was supposed to have an understanding of the whole world through almost every social lens possible. If that is what teaching social studies encompassed, I wondered how I would narrow it down as a new practitioner. This concern inserted itself like a pea under my mattress as I worried about meeting standards, motivating students, making the curriculum relevant, and trying to get a good night’s sleep. As I interviewed for jobs, I discovered a school in Rhode Island that offered an unexpected solution to

my anxiety over content.

The Paul Cuffee School grounds the questions of society in the natural world by integrating the social and natural sciences into one course and by creating opportunities for other interdisciplinary learning experiences. This approach to teaching middle school social studies provides a framework for inquiry and problem-solving that makes the breadth of the content somehow seem less daunting and more relevant.

Why combine these disciplines into one course? The premise is that the social and natural sciences both allow students to learn and practice the scientific method and experimental design, read nonfiction text for comprehension and analysis, and strengthen oral and written communication skills with an emphasis on supporting their claims with strong evidence. We call the course Integrated Sciences Exploration,

or I.S.E., a great acronym that lends itself to countless corny jokes related to temperature and refrigeration (as well as the name “Ms. ISE,” which more than one student has called me by mistake, making me feel like I should wear baggy pants and have a microphone in my hand while I conduct class).

Our middle school curriculum is framed around grade-level essential questions rooted in big-picture environmental and social dilemmas. For example, sixth grade tackles, “How do living things adapt to their environments?” Seventh grade students ask, “What makes a sustainable community?” We also make use of current events, pull the threads of science, social studies and language arts together, teach students media literacy skills, and help our pupils develop a critical eye towards sources and the construction of stories and knowledge. Students are en-

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A guest instructor (l.) and seventh grade student (r) in Ariana Wohl’s Integrated Sciences Exploration class at a research site

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couraged to form questions for experimental design and non-experimental research, including live interviews.

The most important vehicles for learning are the interdisciplinary projects enhanced by local field experiences. While studying the adaptation mechanisms of living organisms, sixth grade I.S.E. students explore the human angle by answering the question, “How did European colonists and North American indigenous groups adapt to the new circumstances of cultural contact?” They go on to discover the anatomy and physiology of a cod fish and connect its natural history and evolution to ocean currents and the triangular trades of the eighteenth and nineteenth centuries.

The notion of sustainability comes alive for seventh graders who must integrate their year’s learning in a culminating assessment project at the end of the year that we adapted from the Charlton Middle School in Charlton, Massachusetts. In small groups, they design a utopia informed by their study of alternative energy sources, government systems, and classic utopian/dystopian literature, such as *Lord of the Flies*, *The Giver*, *Animal Farm*, and, for lower-level readers, *The Girl Who Owned A City*.

This year, I heard Dr. Mel Levine, acclaimed pediatrician and co-founder of All Kinds of Minds, remind an auditorium full of educators that two of the ten “interlocking” parts of higher-order thinking are creativity and brainstorming, scientific essentials. He said, “I think kids should have to come up with their own countries in social studies.” The utopia design project very much pushes young middle school students to stretch their creativity and vision while grounding their choices in concrete data and reasoning across the disciplines. In

a formal oral presentation and various written and visual pieces, they make a case for sustainable energy plans and connect the content of their original constitutions to the literature. They defend the symbolism displayed in their national flags and anthems, and they use math to formulate budgets and graphs.

During the execution of the utopia design project, a palpable current of energy hums in the seventh grade hall. The field trips we have taken throughout the year, the biology and physics labs we have conducted, and the books we have read collide in a synthesis of learning. There is vast room for differentiation, as learners of different readiness and those who favor different modalities all have a chance to show what they know and wrap their minds around the essential question.

The final products reflect the classroom curriculum and also their personal experience as adolescents. One team presented a society named Some Other Land, a place partly inspired by Roger Williams, where outsiders can find acceptance and a safe haven regardless of their background. Another team envisioned a highly religious Christian society called New Eden. Students have presented societies focused on sustainable agriculture, where everyone is vegetarian. In response to reading *Lord of the Flies*, a certain group put women in charge. Others built cases for benevolent dictatorships. Most related wind energy or solar energy to their geographic locations. All groups grapple with the notion of citizenship, drawing on the current immigration debate and even our school’s culture around community membership.

The utopia project is one tool in the integrated sciences approach to curriculum design that allows students to construct meaning for themselves.

Combining multiple courses of study is not without a price. The greatest drawback is time. With essentially more standards to address in the same time blocks as other classes, we must be even more deliberate and selective; the result is that some concepts and skills receive more attention than others. The program relies on flexibility, experimentation, and regular evaluation.

Ultimately, I am educating my students to see themselves as stewards of the earth and as active global citizens. Students who can connect social studies to science, language arts, math and other disciplines are forming the habits to think logically, creatively, and, ideally, exercise more informed decision-making. Something is working when students are studying the physics of nuclear energy, reporting on Iranian-U.S. relations, and as a result asking monumental questions – their own essential questions – like, “Who decides which countries get nuclear weapons?” “How do you know who the good countries are?” Something is working when students study the Bill of Rights, read Orwell, and debate whether or not their utopian societies should have militaries and then ask, befuddled, “I don’t understand... why is it illegal to kill people normally in society, but it is ok to kill people when you are at war?”

Perhaps the MTEL writers have it right. To answer these kinds of questions does, in fact, require an engagement with many different disciplines and a broad interest and understanding of the whole world, or at least the logical reasoning skills and imagination to confront it.

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