

## Teacher/Viewing Guide

### Arab American Stories – Episode 105

Amir Abo-Shaer

Director, Dos Pueblos Engineering Academy

**Grade Level** 9-12

#### **Episode Overview:**

In this episode, Amir Abo-Shaer shares his passion for applied learning as Director of Dos Pueblos Engineering Academy. Mr. Shaer explains how the traditional education model of learning content without practical application of that knowledge leads to graduates who are unprepared to enter the workforce. His unique model of applied learning allows students to not only learn physics and engineering, but also apply those skills in a school-based machine shop where they build working robots and other projects. He also talks about the importance of encouraging more girls to study science and engineering and how he worked to ensure that girls would be equally represented at the school.

Amir Abo-Shaer's students also talk about their experience at the school, where students of all backgrounds and genders come together to learn not only physics, but also teamwork, project management and negotiating skills. Mr. Shaer, whose father is from Iraq, also explains how America allows for "the freedom to think for oneself" and to pursue personally interesting and satisfying careers.

#### **Previewing Questions:**

1. What is the purpose of school? What do you expect to learn and be able to do by the time you graduate from high school?
2. What are vocational courses? Are they as important or as difficult as courses such as math, science and English?
3. Even though more women than men currently attend college, there are more men than women in science, engineering, technology and math degree programs. Why do you suppose that is?

#### **Vocabulary:**

1. Gender Identity: your identity as it is experienced with regard to your individuality as male or female.
2. Myopic: Lack of discernment or long-range perspective in thinking or planning.
3. Soft Skills: Personal attributes that enhance an individual's interactions, job performance and career prospects such as team building and communication skills.
4. Pneumatic: Containing or operated by air or gas under pressure.

**Lesson Overview/Review:** After viewing the segment on the Dos Pueblos Engineering Academy, students should be prepared to discuss the concept of applied/project-based learning as well as discuss career education and goals.

**Post-viewing Class discussion:** After viewing the segment, consider the following questions:

1. Mr. Abo-Shaer speaks about the traditional education model where the purpose is to learn content, but never apply the learning. Do you agree with Mr. Abo-Shaer? Why or why not?
2. The Dos Pueblos school is purposely designed to be 50% boys and 50% girls. Do you think that our school needs to encourage more girls to take higher level science and math courses? How many girls in the class are interested in science, engineering, technology and math? How many boys?
3. Some people consider machine shop courses vocational and not "college prep," but Mr. Abo-Shaer argues that AP Physics alone was only teaching content but not how to use physics to actually design and engineer. How do you feel about the idea of project-based learning? Can you think of ways that your current courses could incorporate projects?



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4. Mr. Abo-Shaeer states that he sees a situation where students are completing 16 years of education (k-12 plus college) and still “not able to start performing on the job.” Do you agree? Do you feel ready to enter the world of work?

**Journal option:** Have students take a moment to write a journal based on the following writing prompt: In what ways is what you learned in school this week connected to the world, your interests, and a future career? How can you take something you learned this week and apply it to solving a practical problem in the real world?

**Activity:** Show What You Know With Thinkquest! According to ThinkQuest, “Projects provide a flexible framework for engaging students in exploring curricular topics and developing important 21st century skills, such as communication, teamwork, and technology skills.” In this activity, students will take on a challenge and solve a problem. Students should work as a team to identify an issue or problem that they are interested in. Have students go to <http://www.thinkquest.org/en/>. Here they will have a chance to brainstorm ideas, explore projects that other students have developed and build-out their ideas on a website. They will Enroll on Thinkquest, Create a Project (Choose a topic and specify the goals and target age range), Add Members (Assign students from your class or collaborate with other members around the world) and then Start Creating web pages (fill them with text, lists, pictures, multimedia, interactive discussions, votes, and more). There are also communication tools to help students work as a team, manage their project and set goals.

You can incorporate ThinkQuest into lessons from any curricular area through online projects, assignments, peer review, and more. View the Get Started section for ideas on how to introduce ThinkQuest into your classroom. Students will work across multiple disciplines but all projects will provide students to research and develop writing in 21<sup>st</sup> Century platforms.

**Explore online:** Use the following resources to allow your students to further explore the topic.

1. <http://www.edutopia.org/shop-classes-vocational-education-technology>
2. <http://www.edutopia.org/project-based-learning>
3. <http://www.youtube.com/watch?v=hL2e1rlrbGs>

**Interdisciplinary Options** Math, Science, Technology, and Career Education

### Common Core Alignment

- W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- W8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
- SL5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.