

## **Mathematics Connections to Current Events**

Esther M. Pearson, M.S., Ed.D.  
Assistant Professor, Mathematics  
Lasell College  
1844 Commonwealth Avenue  
Newton, Massachusetts 02466  
Phone: 617-243-2455 office; 978-257-5725 cell  
Email: epearson@lasell.edu

### **Abstract**

The “Mathematics Connections to Current Events” provides pedagogy for introducing current events into Mathematics courses thus providing humanistic mathematics examples and discussions in an instructional environment. The outcome is instructional approaches that result in student’s gaining not only an understanding of mathematical concepts but how to apply the concepts to current events thus engaging students in and beyond the classroom. This allows students to apply their knowledge to new mathematical situations providing a sense of empowerment and active participation in social environments with mathematics as their basis of putting current events into proper perspective.

### **Introduction**

Mathematics is occurring all around us. It is veiled under the covering of everyday life and current events. Reaching students with mathematics occurs by lifting that veil to uncover mathematics as a humanistic endeavor. Mathematics curriculum must be broadened in its connections to relevant global societal events. This is accomplished using global events that occur in selected subject areas of society. Mathematics is presented as a relevant and useful tool that is used to identify and assist in resolving global problems, concerns, and crises.

Mathematics in proper perspective is mathematics in personification. It is put into perspective as a tool for viewing our daily environment and making decisions that personal lives and society in general. A paradigm shift occurs as mathematics is portrayed in a humanistic view, rather than as depersonalized, asocial, and without much human context or relevance.<sup>1</sup> Mathematics is learned and performed within the context of human purpose and meaningful human enterprise.

Richard Felder, North Carolina State University and Rebecca Brent, EDI - Education Designs Inc. developed a list of pedagogical mistakes that are made in the presentation of Mathematics. Mistake #5 on the list is the failure to establish relevance.<sup>2</sup> Establishing relevance takes into consideration both the student and the mathematics curriculum content. The curriculum is built around the student not the student molded and shaped around the curriculum.

Students learn best when they clearly perceive the relevance of course content to their lives. Connecting theory and practice must be achieved by bringing classroom instruction to bear on real world events. To foster motivation you must begin the course by describing how the content

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<sup>1</sup> Brown, S. I., “Towards Humanistic Mathematics Education”, Mathematics Ulterior Motives, <http://mumnet.easyquestion.net/sibrown/sib003.htm>

<sup>2</sup> Felder, R.M., and R. Brent, “The 10 Worst Teaching Mistakes. Mistakes 5–10,” *Chem. Engr. Education*, 42(4) 201 (2008) <<http://www.ncsu.edu/felder-public/Columns/BadIdeas1.pdf>>

relates to important societal events to include whatever you know of the students' experience, interests, and career goals.<sup>3</sup>

To find current events related to mathematics there are several techniques that can be used. These techniques locate the events but do not provide the mathematical context for them in a curricular format. It is up to the professor, teacher, instructor to place the current event into a humanistic context in which mathematics can be drawn out. The steps of doing this include:

- Determine categories of Mathematics of Interest
- Provide search categories for Media outlets
- Develop Unique search criteria

The humanistic categories upon which the current events can be placed are taken from mathematics topics to include:

- Mathematics of Social Choice
- Mathematics of Finance and Economics
- Mathematics of Shape and Form
- Mathematics of Change and Growth

This is not an all inclusive list of categories. Others may be added based on curriculum and context of instruction.

Descriptions of each of these topics are as follows:

Mathematics of Social Choice – mathematics represented in government, voting, sharing, and apportionment

Mathematics of Finance and Economics – mathematics represented in money and commerce

Mathematics of Symmetry – mathematics represented in nature, art, human body, and architecture to include fractals

Mathematics of Change – mathematics of growth and measurement

These categories link current events with the recognitions of mathematics in daily life. Mathematics is involved in governance, finance, nature, art, music, growth, data collection and interpretations. Each of these daily recognitions interacts with our lives and enriches them with awareness of humanity.

To find current events the common and advanced Internet search engines can be used. The search engines containing “Alert” systems which provide notification when a topical subject of your interest is posted to a public database of information and accumulated knowledge are used. The alerts are triggered by “Key Words” based on meta-tags. So, the choice of key words is critical in notification of the alerted current events, as well as, syntactical limiters. The

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<sup>3</sup> Dewar J., Loyola Marymount University, CA. –AWM Newsletter Nov- Dec 2009

syntactical limiters include braces, brackets, wildcards, quotes, and excluders. Each of these narrows the focus of the search.

Along with search engines, there are software applications known as “web crawlers” that locate and make available current events based on selection criteria. These software applications require more programming expertise and are not without cost and thus upgrades, and revisions. These applications are utilities that extract URL, meta-tags, plain text, page size, last modified date value from Web sites, Web directories, search results and lists of URLs from file. Thus, they are heavily dependent upon the depositor of the information’s creativity in labeling or timeliness in depositing information.

Each of the humanistic categories must be matched with current events. In other words, the current events that are found using Internet searches and/or web crawler applications are matched with the humanistic categories. Three current examples are as follows:

**HUMANISTIC MATHEMATICS CATEGORY:** Mathematics of Finance and Economics  
**CURRENT EVENT:** Anthropogenic Oil Spill in the Gulf of Mexico  
**MATHEMATICS EDUCATION:** Algebra  
**CONCLUSION:** Students discover costs of real life anthropogenic societal events

**HUMANISTIC MATHEMATICS CATEGORY:** Mathematics of Change (and Growth)  
**CURRENT EVENT:** Haiti Earthquake  
**MATHEMATICS EDUCATION:** Pre-calculus  
**CONCLUSION:** Students discover the devastation of an earthquake in relationship to seismic releases of energy/power.

**HUMANISTIC MATHEMATICS CATEGORY:** Mathematics of Symmetry (Shape and Form)  
**CURRENT EVENT:** State of Glaciers in High Asia  
**MATHEMATICS EDUCATION:** Geometry as Fractals  
**CONCLUSION:** Students discover mathematics relationship to nature.

These three societal events are examples of how mathematics can be taught humanistically. Thus, the curricular and pedagogical environment is alive with events that have both affect, influences on emotion and culture and effect as it demonstrates changes that occur in human situations and circumstances that are of global importance. Thus, students become engaged in and aware of mathematics’ relevance, its humanity, and its global ability to make current events a mathematics classroom common experience.