

# Using Emerson Circles to Model Personal Growth of Students in Science and Technology

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“We have it in our power to begin the world over again.” Thomas Paine, *Common Sense*,  
1776

## Introduction

Industry demands a diversity competent employee. ABET requires students be culturally competent and be prepared to deal with globalization. Based on Emerson’s work we have developed the model for personal growth of a student imbedded in science and technology. Through this model we describe the process with which students attain real world skills (in this case, diversity skills).

For several years we have been concerned with understanding diversity, teaching diversity and developing and assessing diversity skills<sup>1</sup>. Even those who understand the great benefits of diversity and passionately promote it will accede to the difficulty of moving forward with diversity issues. The complexities of diversity become apparent through the differences among people.

An individual’s growth is linked to the growth of the society to which she or he belongs. If you were born and educated in America, there is no doubt that you will have spent some time reading Ralph Waldo Emerson. In remembering and recently reading some of Emerson’s works, we were struck with the idea that Emerson’s words and philosophy could be effective in helping our students understand diversity and the value diversity skills will play in their lives.

## Emerson

Ralph Waldo Emerson was born over 200 year ago on May 25, 1803. Emerson ranks as one of the most studied individuals in American history. He continues to be the subject of new scholarship<sup>2</sup>. Many different “Emersons” circulate through the humanities. He has been studied as a philosopher, an essayist, naturalist, poetry, economic thinker, and founding father of transcendentalism. Anita Haya Patterson’s book, “From Emerson to

King: Democracy, race and the politics of protest,” contends Emerson was also a political theorist whose engagement with issues such as the Cherokee removals, women’s rights, abolition, race, representation and rights provides interest for American thinkers and writers<sup>3</sup>.

Although Emerson spent most of his life around Concord and Boston, Massachusetts, he did travel to Europe and Egypt. In his journal he reveals his frustration at his lack of basic knowledge of language, the Arab people and their culture. He also makes comment about the difficulty of cultural assimilation. His interest in Arab thought and culture stems from his desire to create a united world culture. By reading his journals, the reader can also see that Emerson anticipated the globalization we are experiencing today. He knew cultural clashes could be painful and felt the only way to avoid such occurrences was through education<sup>2</sup>.

Emerson is an author who can be enjoyed not just for his mastery of the language and engaging tales, but comprehension of human nature<sup>4</sup>. In 1840, Emerson wrote an essay called “Circles<sup>5</sup>.” In the essay, Emerson creates an image for the way growth takes place in people. He uses circles as an image of both expansion and confinement. “The life of man,” he writes, “is a self-evolving circle, which forms a ring imperceptibly small, rushes on all sides outwards to new and larger circles and that without end<sup>6</sup>.” His idea is a picture of life long human expansion in relationships with people of different gender, age, culture and religions.

A circle has several definitions. An engineer’s working definition would probably be “a plane figure bounded by a single curved line, every point of which is equally distant from the point at the center of the figure<sup>7</sup>.” But a circle can be defined as “a group of people bound together by common interests<sup>7</sup>.”

Emerson said “People see only what they are prepared to see<sup>8</sup>.” As educators, we are responsible for helping students see and be open to new concepts. This paper uses Emerson’s envisioned circles to prepare our students for the brave new world.

### Model of Growth

Based on the discussion regarding Emerson’s circles of growth, we can conceive of a model of concentric circles (Fig. 1) that lead an individual from her innermost world to the real world. This model is easily understood by studying an example of the progress of a university student as she moves to become a productive member of a community that is increasingly global. In this model, her inner world consists of all her life experiences up to the present time. This world is dynamic and forever changing. She is imbedded in an academic setting that includes an ensemble of scholars, teachers and other students. This world is considered her professional world at this point. Making a leap from her academic environment to the real world will require a great deal of effort and preparation on her part as well as the campus community. If our student is seeking to join the global technological sector she will need the skills and competencies shown in Fig. 2. The listed

diversity competencies have been derived from ABET student learning outcomes and the Kansas State University's list of diversity competencies (Tilford Competencies<sup>9</sup>). Our model of growth can be used to explain to technical educators and students alike, the need for some additional non-technical training to prepare students to succeed in the global community.

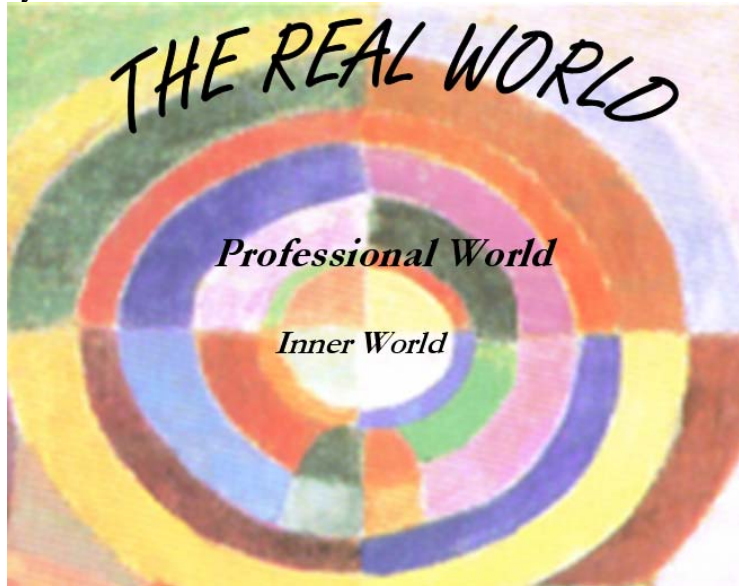


Fig. 1. Model for Growth (Background from Electric Prisms, 1914, Sonia Delaunay)



Fig. 2. Skills and Competencies for a Global Environment

### An example of using Emerson Circles

Traditionally, students majoring in technical subjects have learned about human diversity from courses in the humanities and social sciences. While perspectives gained in these courses are valuable, it is necessary for technology educators themselves to address why knowledge of contemporary societal and global issues is relevant to the professional development and future success of technology students. Faculty members at K-State at Salina have begun to manifest their commitment to diversity by sponsoring and participating in events such as multicultural movies, panel discussions and external speakers<sup>10</sup>. But we need to go beyond the raising of awareness, and begin to help students develop a sense of identity as “technologist” or “scientist” that encompasses the principles of diversity and multiculturalism. Sherra Kearns, a former ASEE president, has referred to the technology professional who has gained such a sense of identity as a “socially effective whole brained global engineer<sup>11</sup>.”

Although the process of identity formation may seem imprecise and esoteric, it is our contention that Emerson Circles can be used as a graphical aid to help students understand their evolving identity by showing how seemingly disconnected elements in and out of the curriculum fit together to prepare them to meet future societal obligations and leadership responsibilities. It will help the students find answers the age old question, “why do I need to know this?”

Fig. 3 shows an Emerson Circle diagram of a classroom activity that connects the technical to the non-technical. The presentation linking diversity and innovation using Joel Barker’s *Wealth Innovation and Diversity* Video<sup>12</sup> was made to freshmen students in the Electronic and Computer Engineering Technology Seminar Course. The video illustrates the importance of diversity in biology, in socioeconomic thinking and in manufacturing technology. Students were then asked to write a few sentences on what they had seen. Turns out that majority of the responses had noted a positive connection between technology and diversity.

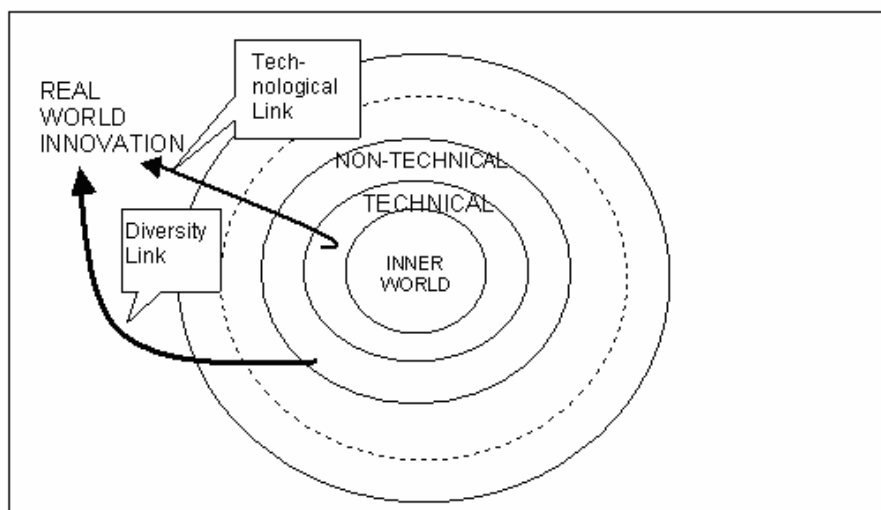


Fig.3. An Emerson Circle perspective of Joel Barker’s *Wealth, Innovation and Diversity* video presentation.

## Summary

In summary, we have talked about how Emerson Circles can be used as a tool for student and faculty personal growth. While our focus has been on diversity issues related to globalization, we have little doubt that the Emerson Circles can benefit other areas. It can be used as a motivational instrument to develop student interest in areas that do not have a direct connection to science and technology. It can also be used to enhance their understanding of their emerging roles in the global marketplace. Diversity education needs to be cross-curricular. Faculty members are role models who can help students form cross-curricular circles.

## References

1. Khan, S. "Teaching diversity at the College of Technology & Aviation," Conference proceedings of the 33<sup>rd</sup> ASEE/IEEE Frontiers in Education Conference, November 5 – 8, 2003, Boulder, CO., pp F3D-24 – F3D-28
2. Wilson, F. "Emerson" Review of two books, "Emerson" by Lawrence Buell & "Emerson" by Kenneth S. Sacks, July 8, 2003. Retrieved April 15, 2005 from <http://galenet.galegroup.com>
3. Castronovo, R. "From Emerson to King: Democracy, race, and the politics of protest." *Modern Language Quarterly* v60n1, March 1999. Retrieved August 13, 2005 from <http://newfirstsearch.oclc.org/> second paragraph.
4. Carey, W. B. "Emerson-the importance of adaptability." *Journal of Developmental & Behavioral Pediatrics*. V25i5p382(1), October 2004. Retrieved August 13, 2005 from <http://web6.infotrac.galegroup.com/> fourth paragraph
5. Delbanco, A. "The renewal of literature: Emersonian reflections", *The New Republic*, Review of book, "Renewal of literature: Emersonian reflections" by Poirier, Richard, 1987, Retrieved April 15, 2005 from <http://galenet.galegroup.com>
6. Edmundson, M. "Why read?" Bloomsburg, 2004, pp 5 and 29
7. Webster's New World College Dictionary, 4<sup>th</sup>. Edition, 1999, p 266
8. Ultimate Success Quotations Library, 1997. Retrieved April 15, 2005 from <http://creativequotations.com>
9. McGown, J. Multicultural competency development: preparing students to live and work in a diverse world, 2002. Retrieved May 08 2003 <http://www.ksu.edu/cat/tilford/Competencies.htm>.
10. Kissick, B. and Khan, S. "Expectations, Leadership, Dialogue and a continuing commitment to Diversity Promotion," *Conference Proceedings ASEE 2004 Annual Conference*, Salt Lake City UT, June 2004, 9 pages
11. Kearns, S. ASEE President's Speech at Plenary Session, 2005 ASEE Annual Conference, July 11-15, 2005, Portland, OR from <http://www.asee.org/about/events/conferences/annual/2005/highlights.cfm>
12. Barker, J. Video Presentation, Wealth, Innovation and Diversity, *Star Thrower Publication*, 2000

BEVERLEE KISSICK earned three degrees from Kansas State University at Manhattan, Kansas: a B.S. in Sociology, MS in Curriculum and Instruction, and a Ph.D. in Educational Technology Library/Media. Beverlee is a Professor and Director of Libraries at Kansas State University at Salina where she has taught sociology. Beverlee taught at Virginia Commonwealth University, Richmond, Virginia, Fort Hays State University, Hays, Kansas, and in Kansas public schools. Kissick chaired the diversity committee at KSU at Salina for three years and has served on the President's Council on Multicultural Affairs and the Tilford Group at Kansas State University at Manhattan. Beverlee is known for her presentations on Practical Humanities.

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