

PATT 15: A RETROSPECTIVE LOOK AT WHAT WAS ESSENTIAL DURING THE PAST 20 YEARS

by

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In our closets back in our homes, our youth hangs in between old winter coats and forlorn ties, waiting for the new, maybe revised, or just different “us” to emerge. For as human beings, we know that we will progress in some fashion, good or bad, and make adjustments to what we wear, do, and how we think about things. What was essential before may not be essential now or in the future. All that we can predict is that change will happen. We do know that we will look different physically, think different mentally, and change in what is important to us.

Focusing on “what was essential” rather than “what changed” during the past years causes us to ground our speculation in hope. What is essential to us is the same as what gives meaning to our lives, work, and world community.

Factors in society cause changes in what we consider essential. Political decisions are made. Natural and technological events happen that shake the world. It has been said that life is 10% what happens to you and 90% what you do about it. The natural human reaction is to make adjustments and move forward to the best of our ability.

A retrospective look at PATT events and the many events that have occurred either intentionally or as a result of a series of events is a humbling task. Few worldwide efforts in our field have exceeded the amount of research and collaboration that have come from 20 years of PATT Conferences.

World leaders in technology, innovation, design, and engineering (TIDE) education have found this effort to be beneficial in advancing thought and practice. Leaders from many countries have been influenced by this effort. The number and names of those leaders are too numerous to count or identify. However, I would be remiss if I did not note the pioneering work of Dr. Jan Raat as a central figure who made a difference to many who followed him. He was a true gentleman, outstanding educator, and leader in our profession. Without his influence and enthusiasm, PATT would not have happened.

Historians tell us that it is important to look to our past so that we will not make the same mistakes in the future. We have so much to learn if we properly identify that which was important or essential to take forward in our work and lives. One would think that looking back 20 years would be easy for everything is unchangeable. However, we cannot look back without also looking to the present or future. We need a sense of continuity or perspective about the period in time.

We know that what was essential in the past may be of little importance in the future. In the end, the particulars of what people think about what happened in the last 20 years and what might be essential in the next 20 will matter less than the exercise of pondering the

question. Still, it is comforting from time to time to work backward, from the anxieties and ambiguous portents of daily life to the basics.

The following are questions to ponder when thinking about PATT after two decades of constant work.

- What was essential to our field in the last 20 years?
- Just as important, what was done about it?
- Are we proud of what we did?
- What led us to think in the direction(s) that we took?
- How did the events fit into the longer continuum of time relating to before and after the last 20 years?
- Did we make a difference?

We know that even 15 years ago, most of us did not have the use of desktop or portable computers as a part of our daily work routine. Laptops and portable phones were rare and unwieldy luxuries or were considered non-essential. We saw the Cold War come to an end. Four years later, the post war was shattered by acts of terrorism. Today, the language of the future has a dark edge.

The following selected events happened around the world since 1985 and the beginning of PATT Conferences.

Around the World Timeline 1985-2005

1985 New Zealand is declared a nuclear free zone
1985 Discovery of virus that causes AIDS is announced
1986 Partial meltdown at Soviet nuclear power plant (Chernobyl in Ukraine)
1986 U.S. space shuttle Challenger explodes after launch
1988 Pan American 747 explodes from terrorist bomb over Scotland
1989 Tanker Valdez spills 11 million gallons of crude oil into Alaskan Sound
1989 After 28 years, Berlin Wall opens to the West
1990 Hubble Space Telescope is boosted into orbit
1991 World Wide Web starts
1994 English Channel Tunnel between England & France is formally opened
1995 DVD Digital Video Disc becomes a consumer product
1997 Mars Pathfinder lands
2001 World Trade Center in New York City is leveled by terrorist
2004 Taipei 101, World's Tallest building opens in Taiwan
2005 Tsunami devastates India Ocean region causing destruction unparalleled in history (Boorstin, 1977)

It would be easy for each of us to add another 15 events to this list that relate to our home country. During this same time, the number of inventions and discoveries related to science and technology has been enormous. For example, the advent of the Internet and all of the inventions related to its use has considerably changed the financial, educational,

political, and religious institutions in our society. Other advances relate to artificial intelligence, genetics, biotechnologies, nano-technologies and more. We have been a busy world of creators, inventors, designers, and innovators - reflecting what has become a very highly sophisticated, technological society with no end in sight.

Have we been able to keep up as a profession that professes to have content and methodology reflecting such an innovative society? What have we done during this same time? The following listing outlines what we have accomplished over the last 20 years.

TIDE Progress- 1985-2005

TIDE educators have-

- Adjusted their respective national curriculum thrusts to stay in the mainstream of efforts to advance education.
- Addressed changes relating to narrowing curriculum, enhancing achievement, and increased testing.
- Concentrated on student achievement at all levels (low-to-high ability levels).
- Adjusted definitions (i.e.-technology) as events in society have caused changes in their meaning.
- Created standards or similar criteria to be used in determining what students should know, be able to do, or value.
- Produced assessments in the quest to measure student performance.
- Advanced the technical content of the subject area to reflect the changes evolving from new technological disciplines.
- Advanced research on teaching and learning, professional and curriculum development, and teacher education and training.
- Explored new delivery methods as electronic advances have created new opportunities.

A closer examination of this list reveals that the items are timeless and essential for any subject area or discipline to advance during a given period of time. However, they are even more important to a subject area that changes as technology changes.

TIDE educators have also-

- Continued advocacy with policy makers, decision makers, and stakeholders to better position the field.
- Advanced new ideas on ways of thinking about TIDE.
- Built relationships with new communities, coalitions, and other subject areas to better position themselves within the education community.
- Fought for creditability such as the thrust in selected countries to become one of the basic or core school subjects.
- Shared successes and opportunities with colleagues from around the world.
- Closely examined the place in the school curriculum that the subject should be offered.

- Fought traditional thinking that placed the subject in training or skills curriculum rather than general education curriculum.
- Worked to position technology (TIDE) as a parallel subject in the curriculum with its mathematics and science partners.
- Looked at new borders for the subject area to include science/technology, engineering/technology, or science/technology/engineering/mathematics (STEM) resulting from technological advances and the latest curriculum thrusts.
- Served as the primary advocates from and for the educational community seeking to gain the proper role for this subject in an innovation oriented society.

As educators, we have been very busy. We have not been big in number when compared to our mathematics and science colleagues in our schools. However, we have carved an important position for our subject based on simple logic or reasoning. In short, what we teach is essential for a country to thrive in a world of challenge and change. The needs of a country to be innovative are as follows.

Educate next-generation innovators
Deepen science and engineering skills
Explore knowledge intersections
Equip workers for change
Support collaborative creativity
Energize entrepreneurship
Reward long-term strategy
Build world-class infrastructure
Invest in frontier research
Attract global talent
Create high-wage jobs
(Council on Competitiveness, 2004)

These characteristics require the expertise of the economic, political, corporate, and educational institutions of a country all working together to achieve success. They require school subjects that allow experiences with technology, design, invention, and engineering.

Educators in our field have made adjustments, as fast as their resources would allow. One goal has been to create societal members who are in tune with technological innovations. We know that innovation improves the quality of lives in countless ways. Therefore, we have been and will continue to strive to-

- Enable achievement of dramatically higher levels of health.
- Develop product options for the aging population
- Find plentiful, affordable, environmentally friendly sources of energy
- Improve products and services by making them more affordable
- Expand access to knowledge
- Offer new forms of convenience, customization, and entertainment
- Solve the great challenges facing society

With these thoughts, we know that we will have an educational role in the years ahead. The intersection of invention and insight that creates innovation begins with strong and meaningful experiences related to technology, design, and engineering.

Asking the question- What was essential?, started this presentation. We have attempted to put meaning into our lives and the lives of our students through PATT-related activities designed to improve our profession. This work has been accomplished with optimism so fundamental to life that we hardly notice its presence, an optimism of essentials.

It is easy to answer this kind of question, which demands equal parts contemplation and speculation. And, the question itself- What is essential?- is ultimately an elegant rephrasing of the most basic question- What is the meaning of our lives? But, we ask it now because we are at a point in history filled with anxiety and nothing allays fear like getting back to the basics.

We hoard and plan as we muddle on regardless of a world that gives us little reassurance about our future! We have entered a time not just of known unknowns, but also of unknown unknowns! We are mortal beings, which struggle in the world to raise families, stay healthy, satisfy curiosity, amuse ourselves, and leave behind a record of who and what we were doing during our allotted time on the planet.

We did make a difference! You all are to be congratulated on your efforts during the past 20 years for doing your part to further discussion and advance ideas that made a difference. We changed the clothes in our professional closets and continued wearing those that were of importance. We advanced learning during our time to promote the ideals of our profession. In the end, the prime essential for our field will be to raise successful children with just values to be positive contributors to the complex, demanding, and fulfilling future that we anticipate with optimism.

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