

**Eight International Conference on Inquiry
Based Education in Elementary Schools
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**International Partnerships for
Improving Science Education**

***How can positive change be
accelerated?***



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It has already been established that ...

- STI talent development is an important factor in economic development and global trade.
- IBSE and STEM education are effective means to address this need.
- Sharing of Best Practices can initiate and accelerate positive change.
- Strategic partnerships are powerful drivers.
- Conduits for communication and exchange between education leaders are well established and effective.

First, a word of CAUTION:

**As we use STEM in the international setting,
We must agree on what the term means:**

**It is not only a re-organization of schools
to teach S, T, E and M as inter-connected
subjects.**

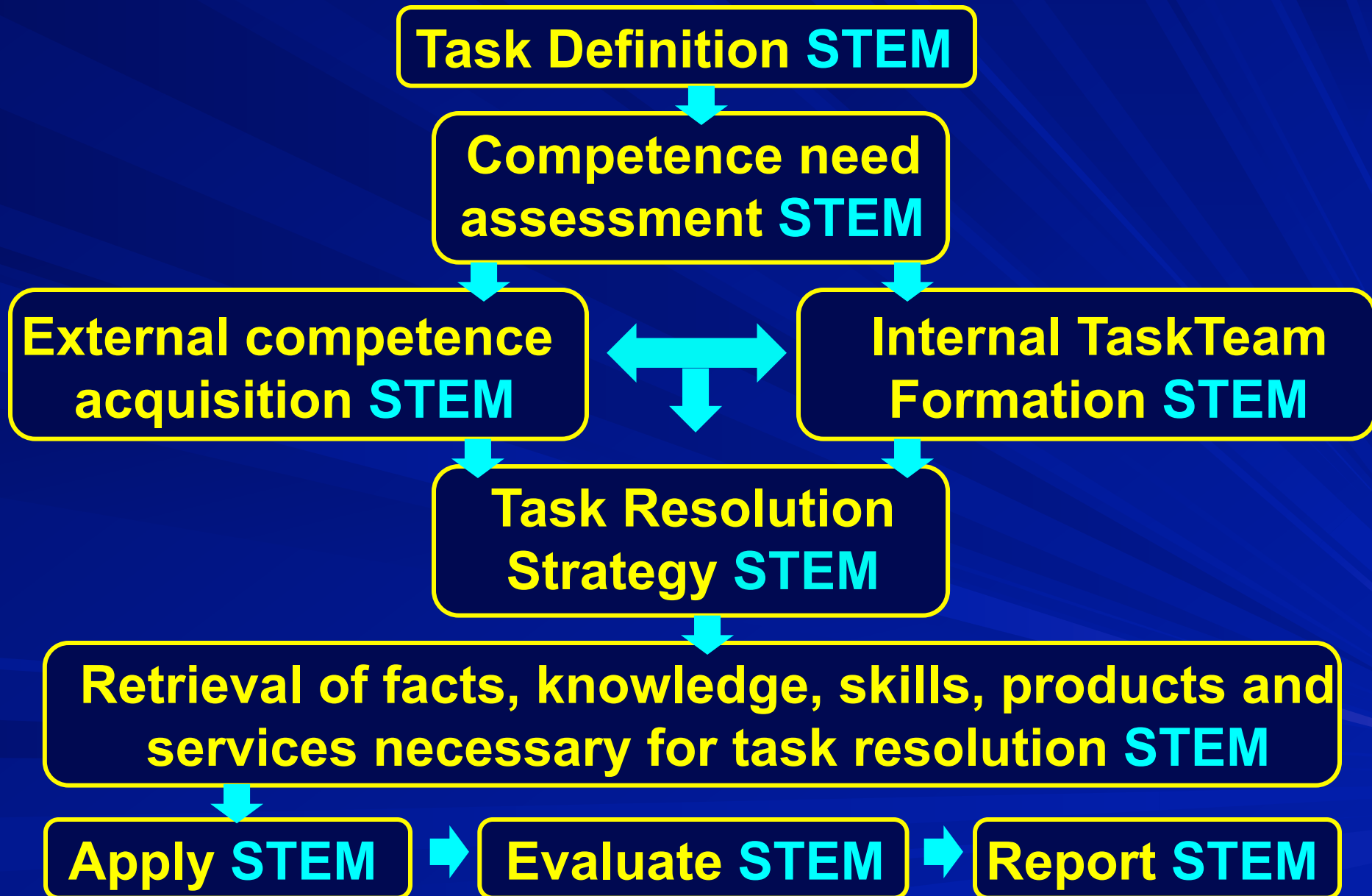
**It is a learned behavior to approach all tasks
by applying state-of-the art knowledge and
skills in all four disciplines.**

**Motivated by innovation and fueled by
creativity, STEM is a powerful tool for
both individuals and organizations to succeed.**

The STEM Paradox

- 1. The term was coined by an educator (Judith Ramally, then at NSF) as a strategic vision for the educator community.**
- 2. Since its introduction >10 years ago, it has:**
 - Generated a multi-million dollar funding stream of government and private foundation money
 - Inspired formation of innumerable new non-profit and for-profit STEM business enterprises
 - Sown confusion about the meaning of STEM
- 3. Unbeknownst to educators, the workplace sector has practiced STEM for the past 50 years – without ever giving it a name.**
- 4. With obvious reasons to collaborate in STEM, Educator-Workplace collaboration are still rare.**

How is STEM practiced in the modern workplace?



What can we do to strengthen the outcomes of international exchange between education leaders?

1. Invest in the leadership capacity of the teachers. They...

- are the best translators of workplace applications in STEM to the reality of the classroom.
- lay down the foundation for students' preparation to become global citizens.
- can inspire peers to engage in international teacher-to-teacher learning through exchange.



2. Re-energize and expand the IBSE/STEM Global Partnership

a. Engage the end-customer of education:

Multi-national corporations ...

- have a big stake in the STEM talent pipeline and can provide authentic models for STEM in schools
- make education a corporate social responsibility
- have extensive cross-border networks that can be conduits for education exchange



b. Engage Engineering Academies

- Many members are corporate leaders with a stake in effective STEM education



3. Establish an International STEM Teacher Exchange Program

a. Objectives:

- Build teacher capacity to develop students with globally competitive STEM skills
- Develop international network of STEM Lead teachers

b. Administration: Engineering Acad. network

- Coordination with IAP Sci. Edu. Prog.
- Program design: Corp. 2-2 int'l STEM teacher
3 month exchange + Evaluation + Report

c. Funding: Leveraged private/public

Not a trivial undertaking, we must consider:

a. Potential Hurdles

- Language barriers – Coordinate regions of English, French, Spanish speakers in pilot
- Primary initial need for intra-national exchange – Prioritize lead regions

b. Clarity of Objectives

- What do we expect International Exchange Lead Teachers to accomplish?
- Build and lead communities of peer learners
- Become resource specialists for policy makers and education strategists

To Summarize:

STEM is here to stay – We must include it into our strategic considerations for how to build on IBSE!

A wide range of global issues demand urgent attention – We must consider all opportunities to globalize science and STEM education!

Education is a continuum – We must include every level, pK-12 in every aspect of a global STEM Education agenda!

We must achieve this in our life time!



Thank You!