



TRANSFORMING Innovations into REALITY in SCIENCE (TIRS)

INSTALLMENT I Transformation

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Welcome back to another school year. I wish you a year filled with many successes. I hope you will be empowered by our sense of community and will support and contribute to STANYS throughout the year.

With this edition of our Newsletter, I will begin a series of ten installments over the course of the next two years around the idea Transforming Innovations into Reality in Science (TIRS). In this first installment, I will share my perspective of the TIRS idea and the role of STANYS in making it real. The TIRS idea is based upon membership feedback from questionnaires, program evaluations, and personal communications received while serving for four years as your DAL-Professional Development.

Transforming Innovations into Reality in Science (TIRS)

To share my idea of TIRS, I will begin with (1) a definition of each term from Meriam Webster, (2) my interpretation of each term, and (3) why it matters to STANYS.

Transform means to change in composition, structure, or character. Transformation in science education is revolutionary because it represents new ways of thinking about teaching and learning. For example, the emphasis on finding causality of phenomena represents a revolution in

how we teach science. Transformation is needed to support this revolution specific to the New York State Science Learning Standards and the Next Generation Science Standards.

Innovation is an introduction of a new idea, method, or device. Innovation is a primary tool of excellence, and promoting excellence in science education is the cornerstone of our STANYS mission. In the business world, great companies delight in leading change. As professional science teachers, we also continuously reinvent ourselves and look for opportunities to grow while maintaining our core. We are successful because we are never satisfied.

Reality is a true situation that exists. The reality is that unless we as teachers move beyond the status quo in teaching, transformation will be short lived and eventually fail. While one has to view our science standards from a revolutionary perspective, in reality, improvements ultimately center on teachers and teaching and what happens in the classroom each day with students.

Science is a system of knowledge concerned with the physical world and its phenomena. It is both a mental and social endeavor. Science represents current understanding of natural systems and a process where the body of knowledge is continuously being revised as new evidence emerges. In learning science, one must progress in both the knowledge and the process of science. As science teachers, the challenge for us is to weave knowledge and process together so they reinforce each other and prepare students for citizenship.

The acronym for Transforming Innovations into Reality in Science is TIRS – it's where the rubber hits the road in our science classrooms. Students engage in the process of three dimensional performances and the product is three dimensional learning. Based on the idea of TIRS, I will address our role as science teachers and leaders in the state and why it matters to STANYS as an association.

Our Role as Science Teachers and Leaders in New York State

A Framework for K-12 Science Education (National Research Council, 2012) states, "Ultimately, the interactions between teachers and students in individual classrooms are the determining factor in whether students learn science successfully. Thus teachers are the linchpin in any effort to change K-12 science education" (p. 255). Any effective transformation of science teaching rests with the teacher and the interactions with his or her students.

As teacher leaders, we continue to move forward.

We volunteer on committees at the building, district, and state level to ensure implementation is consistent with the new vision for science education from the Framework. Transformation requires leadership of individuals who serve as models for all of us. These individuals are not going the easy way; they are going the right way.

The Role of STANYS

Internally, as an association, we must refocus on our existing STANYS goal of maintaining collaborative relationships with other professional and community organizations. This is a positive approach to help others understand the intent of our new standards. Socrates wrote, "The secret of change is to focus your energy not on fighting the old, but building on the new." It will take the members of our association to bring about needed transformation. What joins us together in TIRS is our commitment to students and preparing them with abilities they need to be successful in an ever changing world. Administrators, parents, and policy makers are also part of the transformation process. Teachers cannot accomplish the transformations alone, and there must be reform in other parts of the system.

Science education stakeholders in our state including NYSED and BOCES continue to be thoughtful and deliberate as together we Transform Innovations into Reality in Science by raising awareness and building capacity. As we move forward, we must trust in the positive intentions of all stakeholders and respect each group's contributions, protocols, and timelines. With new science standards, we have already begun transformation in the system; we must also maintain stability in the system.

Transformation requires a change in practice while respecting members' commitment, dedication, and openness for change. I ask you to join me around the TIRS idea because as you are willing to change, it will be an exciting new opportunity for professional growth. In future installments, I will elaborate on the implementation plan of TIRS. I will seek you out for insights and feedback, and welcome your questions and advice.

In Williamsville, my students need me to stay dedicated to enhancing the science education profession and improving my teaching practice. I expect this is the same for you, whatever your role may be in Transforming Innovations into Reality in Science. This means staying abreast of innovations and helping others do the same. Hope rests in each STANYS member as you are a key decision maker and leader in the transformation process.