



Improving Practice Together

Resources for Embedding Argumentation into Elementary School Science Lessons

Evidence-based arguments are core to science. When children have the opportunity to learn and practice argumentation, they can develop the skills and confidence they need to grow as budding scientists. Engaging in argumentation also empowers children with important life skills such as problem solving, teamwork, and reflection.

To facilitate argumentation in their classrooms, teachers must be given the appropriate support and professional learning opportunities. Improving Practice Together (IPT) is a research-practice partnership between UC Berkeley's Lawrence Hall of Science, Stanford University's Graduate School of Education, and Santa Clara Unified School District. Over a six-year period, we set out to help teachers introduce argumentation into their elementary school science classes. Through this partnership, we have created a bank of resources aimed at:

- District administrators
- Professional learning providers
- Teacher leaders
- Researchers and evaluators

These resources are free to access. They not only focus on implementing argumentation in elementary school science classes, but can also be used for:

- 1) Improving professional learning for teachers;
- 2) Developing teacher leaders;
- 3) Supporting research and evaluation of professional learning, teaching practices, and research-practice partnerships.

Professional Learning

IPT's Professional Learning resources help teacher leaders or professional learning providers support elementary science teachers in facilitating classroom argumentation. The resources include 24 session plans, a sample program agenda, and tools that can be used to study or evaluate the professional learning experience. The session plans each have a clear, step-by-step leader guide. They are designed to be enacted across an 8-day professional learning program.



“Participating in IPT was one of the best professional learning experiences that I have ever participated in. Analyzing evidence and thinking of arguments for/against a claim are high-leverage skills that transfer over to math, social studies, and language arts. Because students were using these skills throughout the day and across the curriculum, those argumentation skills also improved overall, leading to more critical thinking and analysis.”

Ann Park
California Teacher of the Year 2016, Oakland Unified School District





Teacher Leadership

Supporting the development of teacher leadership is a key step towards integrating argumentation into all elementary science classes. IPT's Teacher Leadership resources help teacher leaders reflect on their leadership capabilities and show them how to use their own classroom experiences to tailor the professional learning experiences they provide for others. The resources include guidance on how to construct professional learning experiences, advice on how to create a caring and supportive community of practice, and activity briefs that teacher leaders can use to understand the needs and concerns of other teachers.

Research-Practice Partnerships

Research-practice partnerships (RPPs) are a way for researchers and practitioners to work together to improve educational practices. IPT is an example of how successful research-practice partnerships can function in a manner that allows all partners to benefit and learn from each other. The IPT website contains tools that can be used to study the dynamics of RPPs, provide ongoing feedback to improve the professional learning experiences, and facilitate better communication between partners, including a digital note-taking template and interview protocols.

“Being part of IPT gave me the courage to step into leadership roles more in my school and in my school district. I personally have a new appreciation for teacher leaders and I strive to be more available to new teachers or even veteran teachers who need some encouragement to try new things.”

Stacy Butler
Teacher Leader,
Santa Clara Unified
School District



Start embedding argumentation into elementary school science lessons

The IPT project has been shown to improve elementary school science teaching in the Santa Clara Unified School District and has supported the development of many new teacher leaders. Beyond this, the RPP has published important new research about classroom argumentation, professional learning practices, and teacher leadership preparation.

Whether you are a teacher, an administrator, a professional learning provider, or an educational researcher, visiting the IPT website and accessing these resources can help you continue to improve the standard of elementary science teaching in your local area.

Visit the IPT website:

ipt.lawrencehallofscience.org

Contact the team:

ipt.lawrencehallofscience.org/about/connect

