

Providing and Sustaining Effective Professional Development in Science



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It Takes a Village

*Valle
Imperial
Project in
Science*



In partnership with

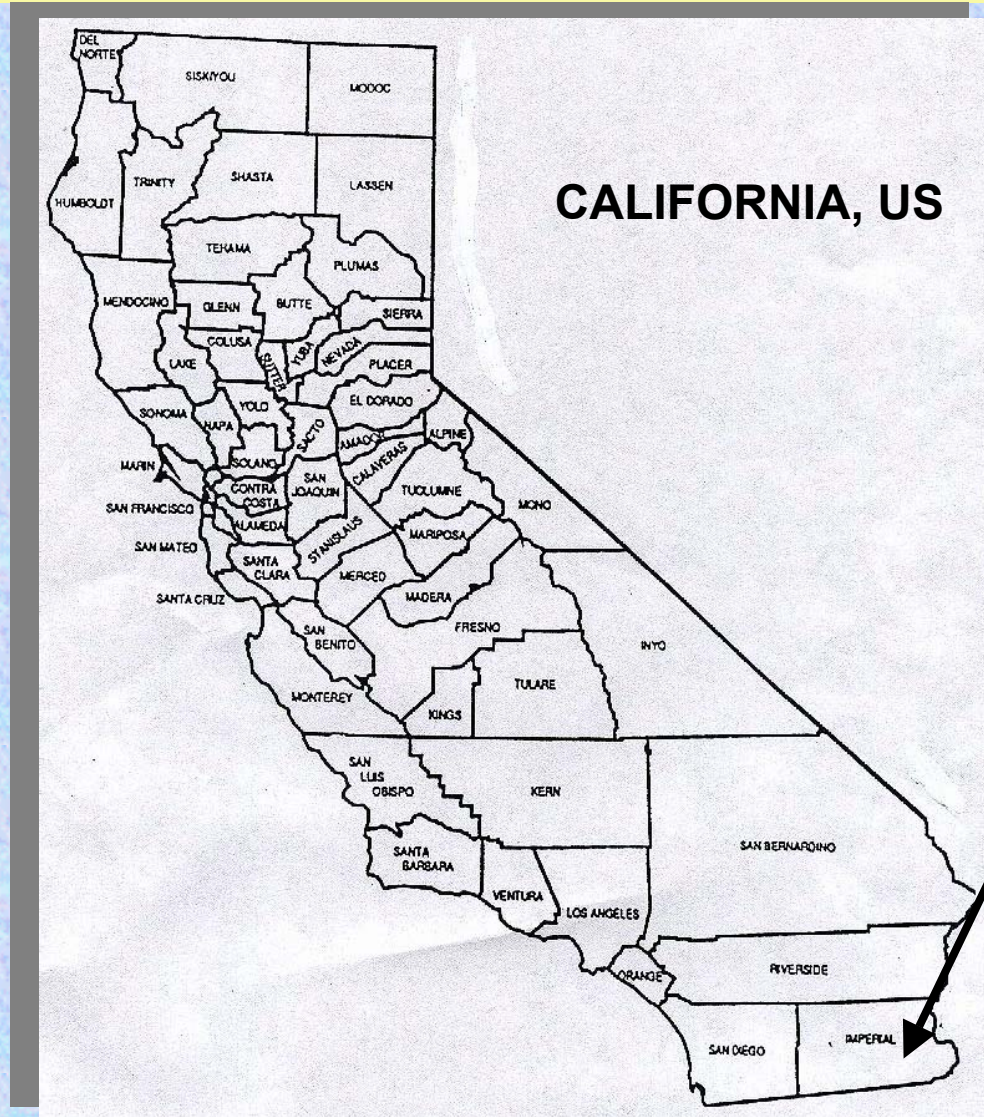


IMPERIAL VALLEY COLLEGE

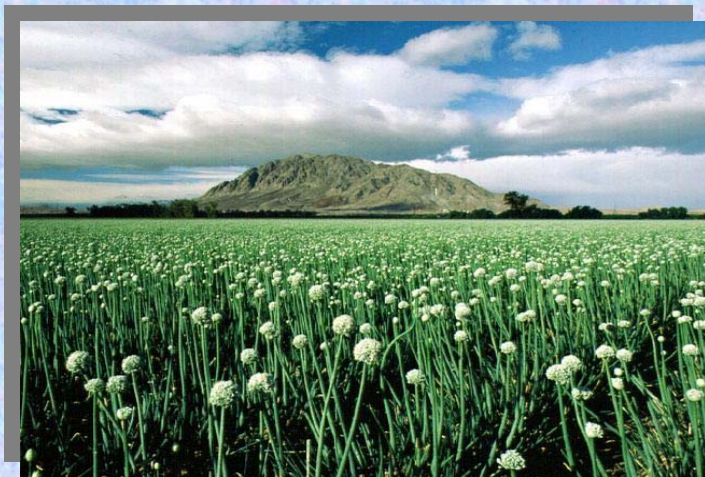


*Imperial Valley
Science Project*

Where is the Imperial Valley?

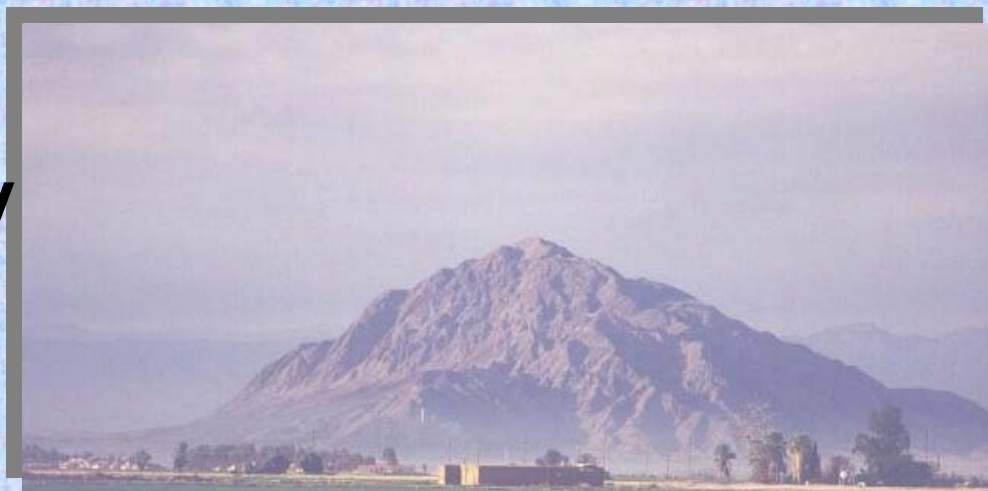


**IMPERIAL
VALLEY**



- Our Region

Our Community



Our Students

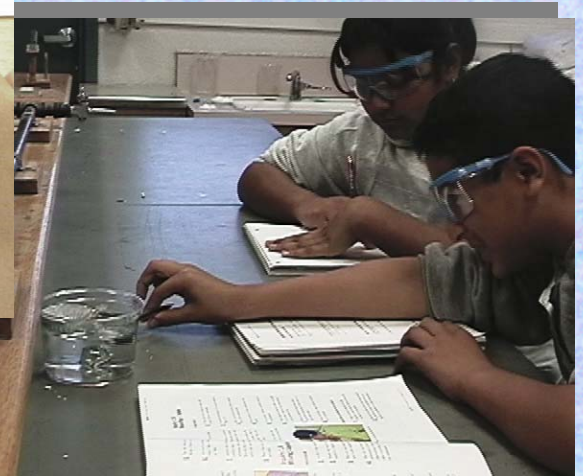
Focusing on Enhancing Science Education in a Region

Developing a Professional Development Plan

PRE-SERVICE TRAINING



TAKING OWNERSHIP



ENHANCED TRAINING

Look at the Educational Landscape

- What are the needs?
- Who will make science a priority?
- Who takes the initiative?



Leadership Emerges

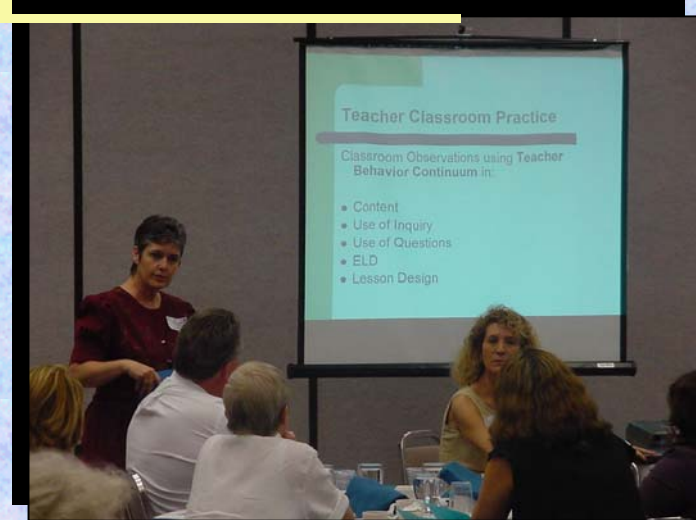
Vision and mission are conceived & defined

- Identify key players
- Research best practices
- Develop a proposal for an action plan



Public Relations

- “Selling to your clients”
- Sharing initial plan
- Receiving feedback on plan
- Adapting plan to meet needs



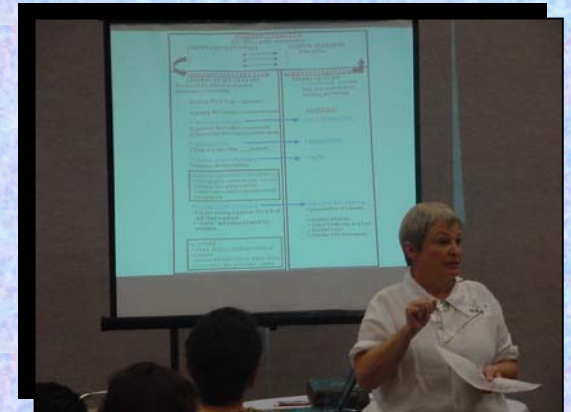
Establish Contact

- School districts
- Principals
- Teachers



Develop a plan for training key personnel

- Exploratorium, San Francisco
- San Diego State University
- California Institute of Technology
- LASER Academy Conferences



Formalize the group

- Create a consortium
 - Be inclusive
- Document as many of the agreements as possible



Focus



- Begin with a group that is commensurate with resources (best to do something on a small scale and do it well)

VIPS initiated project with 3 schools.

- Scale up effect

VIPS now serves 34 schools.

- Expect fluctuations of support during scale up effort.
- Goal is that schools will maintain/sustain on their own



Main Focus

Coordinated effort to provide consistent and systematic training to teachers with the purpose of improving student learning



Advisory Committee

- “Fluid Committee” that consistently and systematically analyzes the process and suggests improvements.
- CSP, NSF, NSRC, CalTech, SDSU

Recommendations



- 1) Plan: listen and evaluate. Adapt as needed (Change is difficult and uncomfortable but often needed for success)

Reasons for making changes:

- If there's lack of interest
- Responding to CA standards, NCLB, Math & LA

- 2) Re-establish connections, new leadership, new key members. Re-educate.

- 3) Build capacity



The Plan

- For VIPS, it included the following :

Five Critical Elements for Reform

- **High Quality Curriculum**
- **Sustained Professional Development**
- **Materials Support**
- **Administrative and Community Support**
- **Assessment and Evaluation**

“Science for all children: a guide to improving elementary science education in your school district”, NSRC

High Quality Curriculum

- Developmentally Appropriate
- Research - based
- Leads to a “big idea” in Science
- Balanced
 - Physical
 - Earth
 - Life



High Quality Curriculum

Provides Opportunities to:

Explore

Investigate

Inquire

Question

Test Hypothesis

Collect Data

Analyze Data



Sustained Professional Development

- University Level Pre-service
- Advanced Degrees



University Level Pre-service

- Coordinated Experiences
 - Content
 - Pedagogy
 - Student Teaching
 - Supervision




University Advanced Degrees

- Masters in Curriculum and Instruction with an Emphasis on Science Education
 - Curriculum
 - Pedagogy
 - Assessment
 - Content
 - Field Experiences



Sustained Professional Development

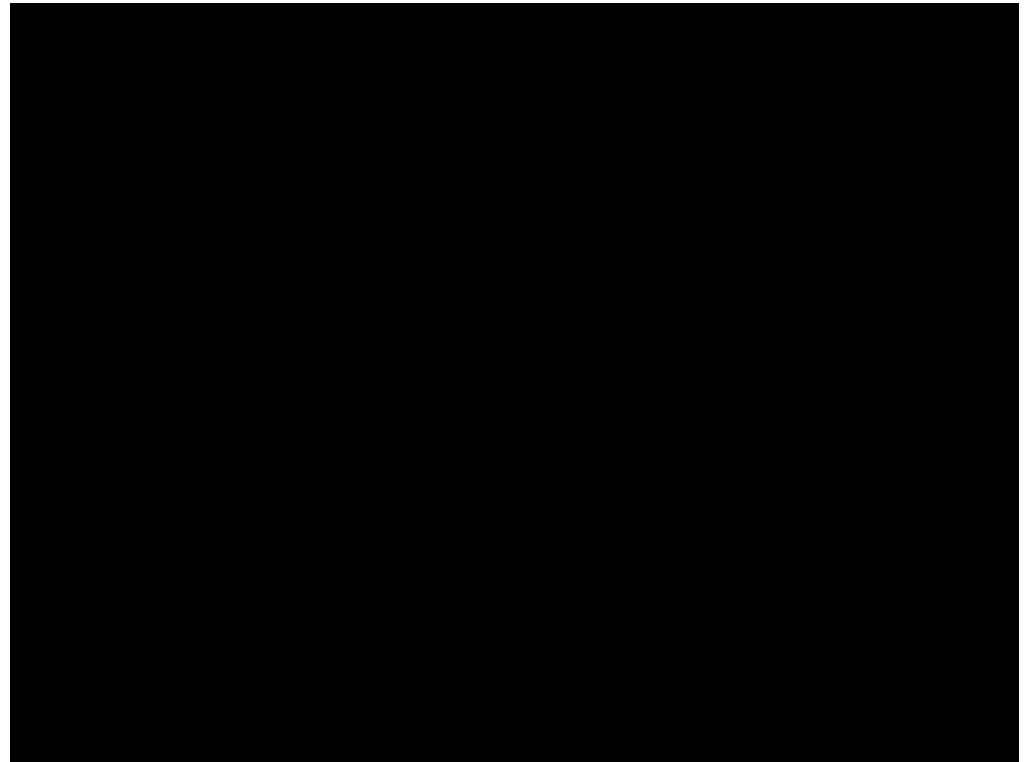
- Initial Training
 - Using science materials
 - Advanced Training
 - Inquiry
 - ELD
 - Summer Institutes
 - Lesson Study Groups
 - Lesson Design Notebooks
 - In-classroom Support
 - Teacher Leadership Development
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Materials Support

Science & Math Resource Center

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- VIPS Offices
- Training Center
- Materials Center



Materials Support

- **Materials Center**
 - Order
 - Inventory
 - Refurbish
 - Deliver
- **Cost Sharing**

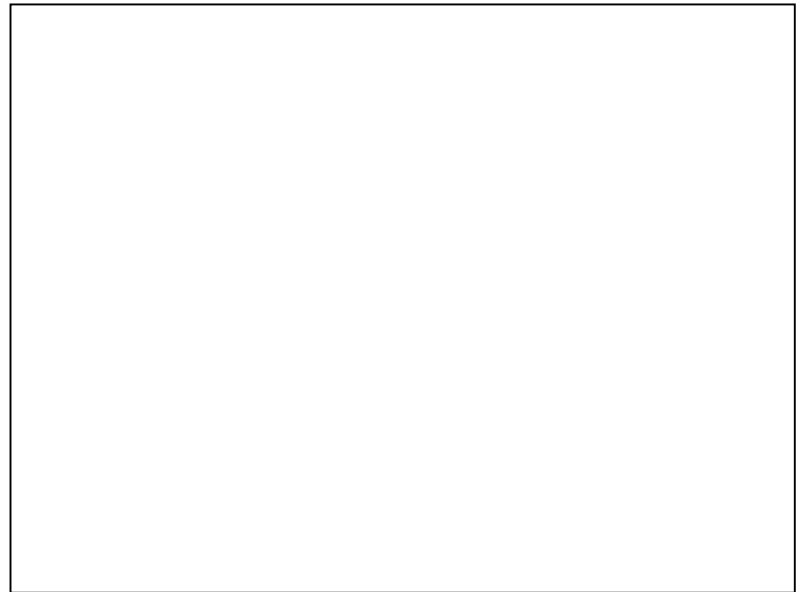
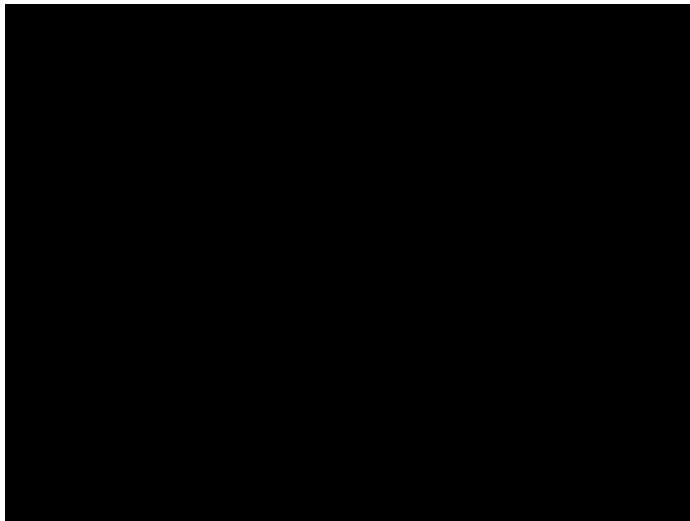
Materials Support

- **Training Center**
 - University Classes
 - District Inservice



Administrative and Community Support

- **Administrative Training: Breakfasts**
- **Science Volunteers**



Administrative and Community Support

- **Parent Education**
- **Periodicals**

Assessment and Evaluation

- Performance Tasks

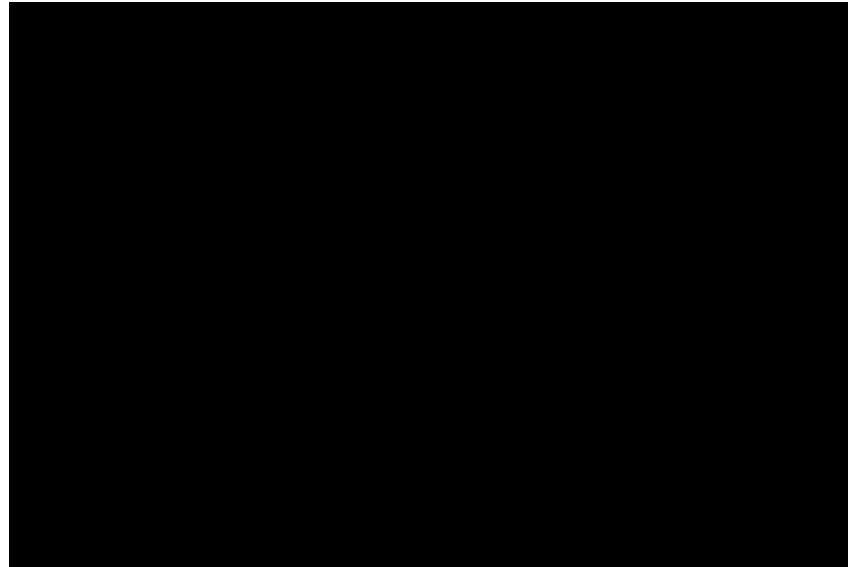


Assessment and Evaluation

- Standardized Tests
- Notebooks



Sustaining Effective Professional Development



What is the Goal?



Establish a systematic way to build awareness among all constituents of the goals and processes that you are following in the area of science.



Everyone needs to be working towards the same goal

Community Support



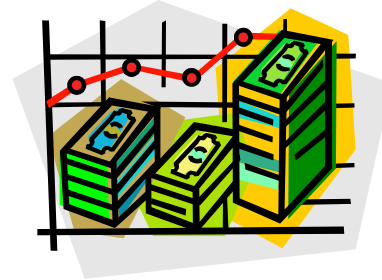
- Rotary clubs
- School Board
- Business



World of scientists

Funding

- Continuously search for funding to support professional development through grants & donations.
- Research results are key in making case for continued support



Research: Notebooks



Establishing and Maintaining Connections

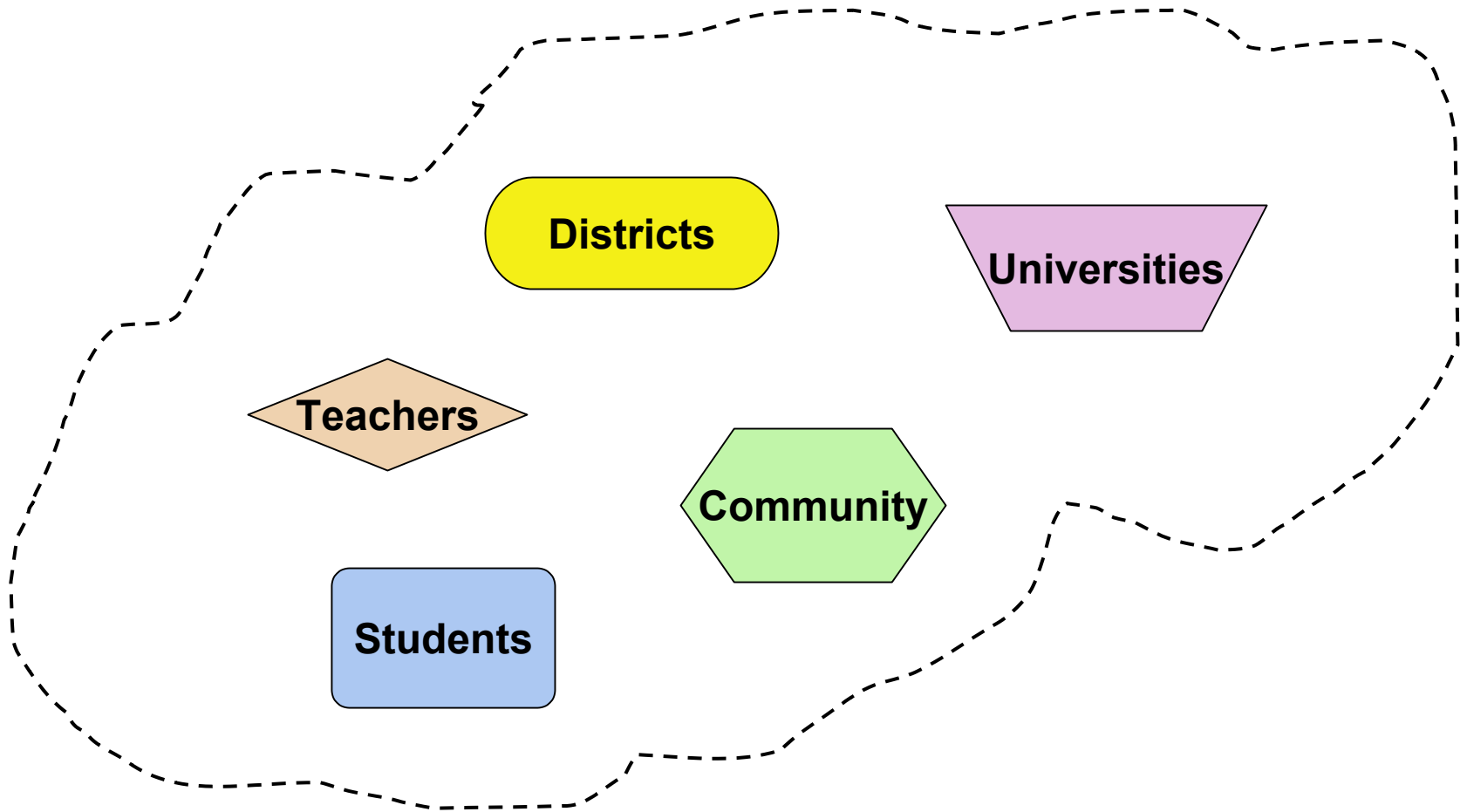
Professional Elements

- Written agreement
- Role each key member plays
- Understand what they bring to the table
- Respectful of all players
- Build consensus
- Review needs
- Assess progress

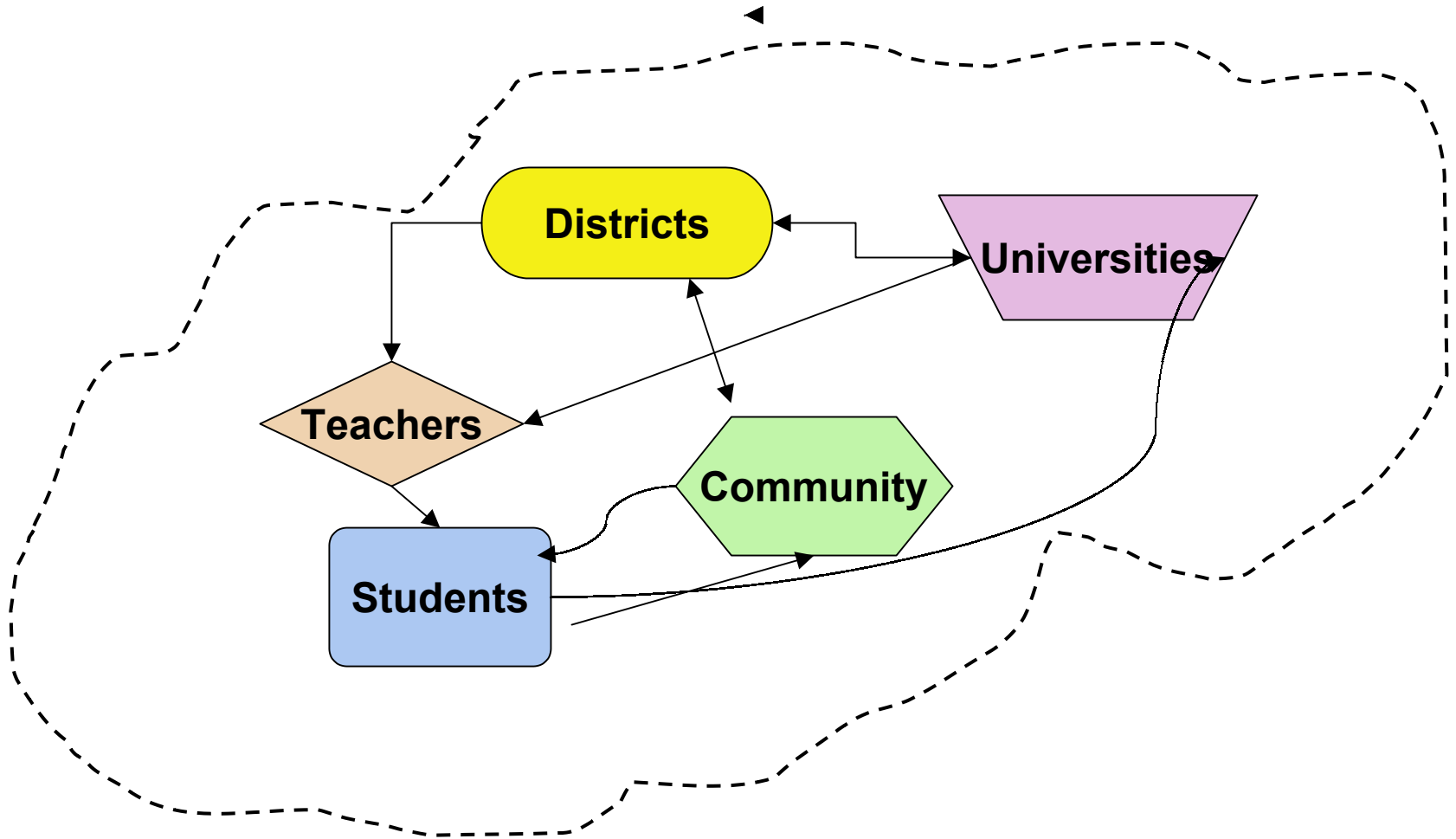
Personal Connections

- Human relationships
- Establish good relationships between groups
- Build rapport
- Maintain open communication and honesty
- Share ideas
- Be inclusive of people
- Advocate for the entire process.

The participants



The participants



Teachers Learn and Students Benefit



Information



- VIPSCIENCE.COM

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http://www.ivcampus.sdsu.edu/teacher_ed/amaral_home.htm