

SRI International

Center for Technology in Learning


SRI Education



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**Eric Snow & Marie Bienkowski
Principal Investigators**





How can we improve CS teaching, learning, and adoption through evidence- centered assessment?



PACT Project Goals I

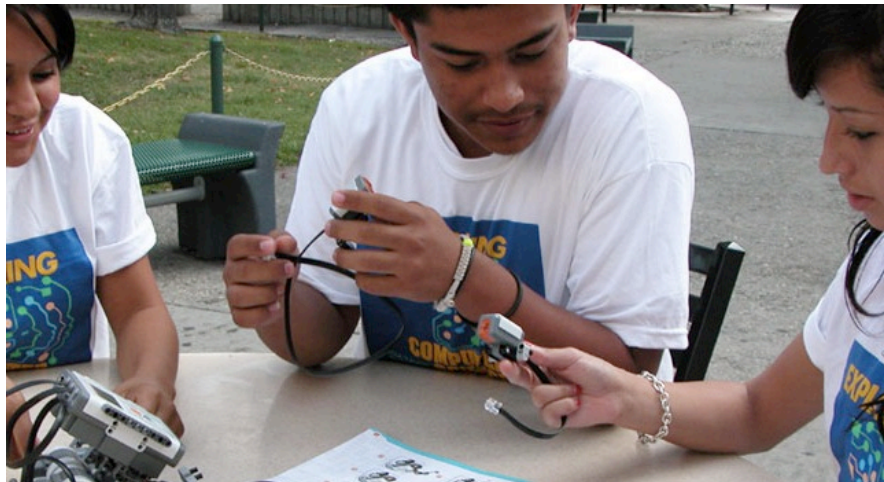
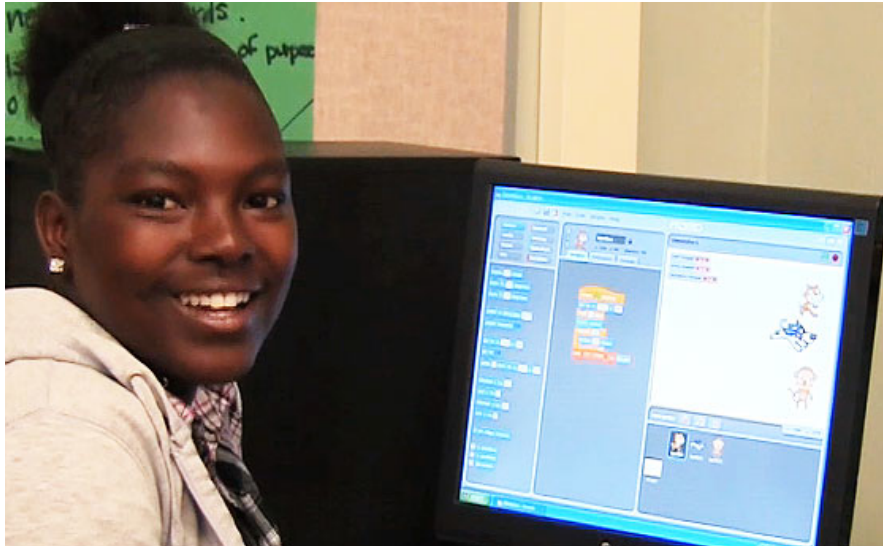
- Develop valid and reliable assessments of computational thinking practices
- Aid in the adoption of high school computer science courses through assessments that stakeholders recognize as useful boundary objects



PACT Project Goals II

- Create **design patterns** for computational thinking practices that can be used to develop new assessments as curriculum evolves
- Create and field test assessments for *Exploring Computer Science* (ECS)

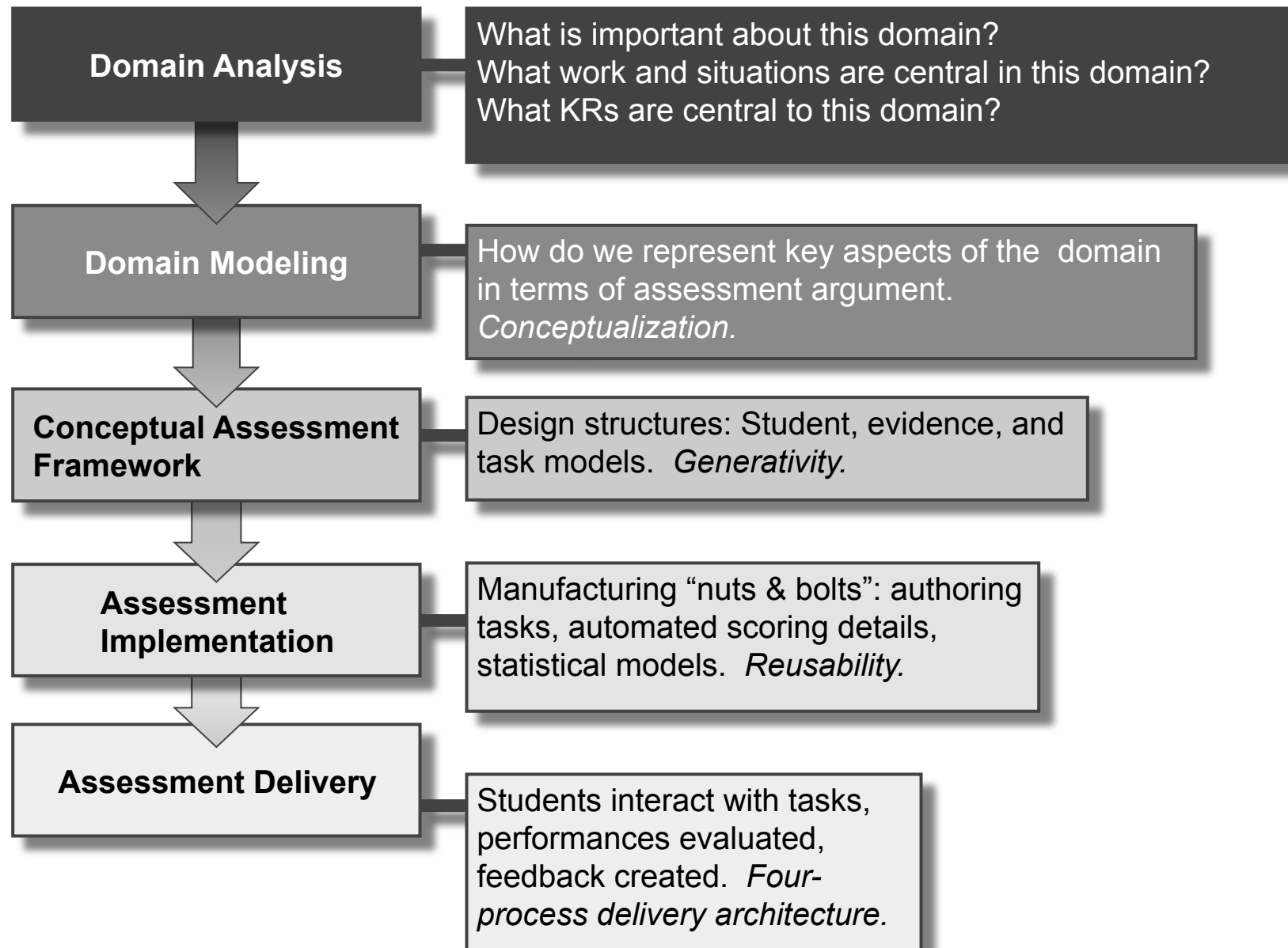




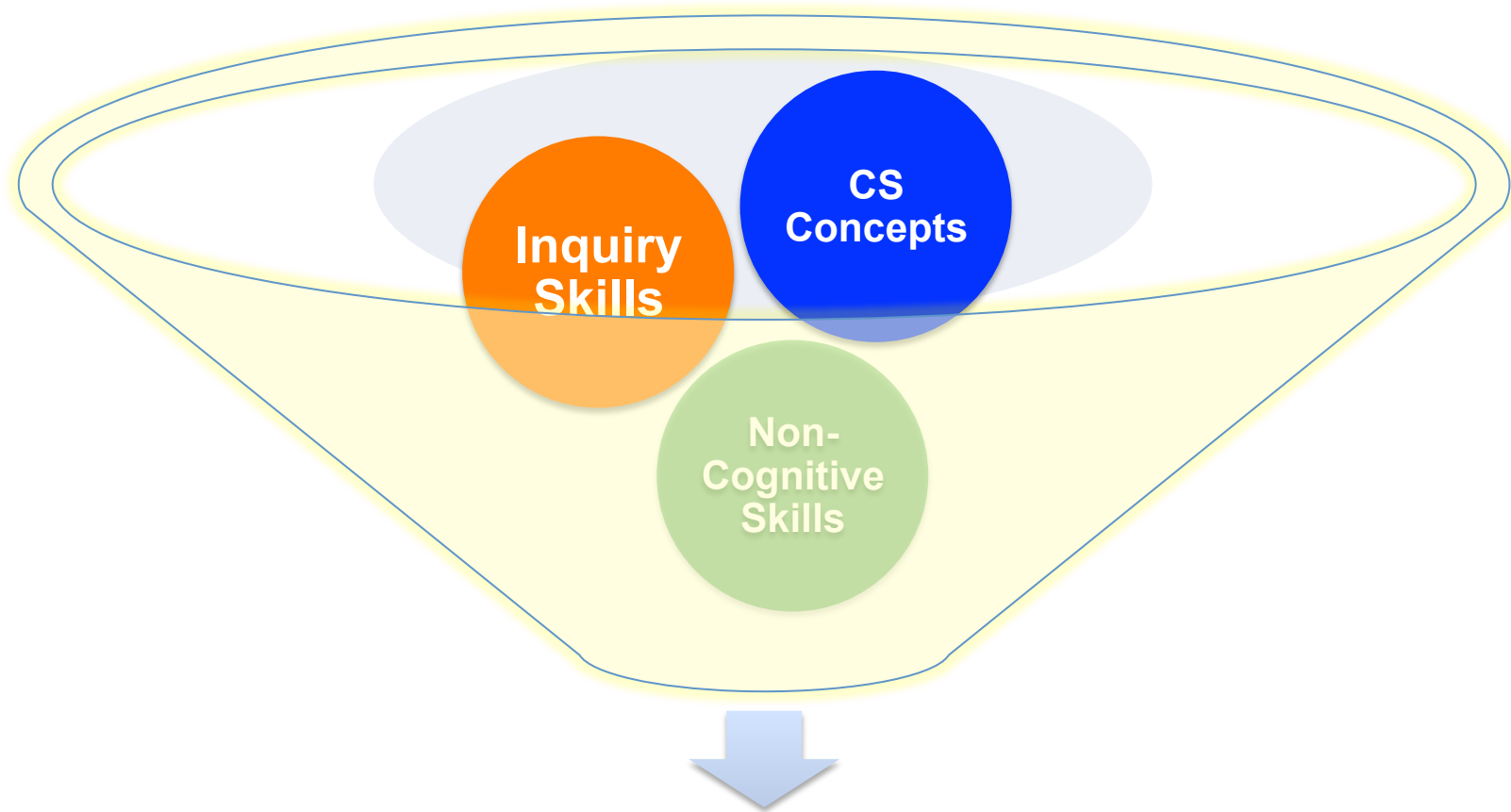


Evidence-Centered Assessment Design (ECD)

- What complex of knowledge, skills, or other attributes should be assessed?
- What behaviors or performances should reveal those constructs?
- What tasks or situations should elicit those behaviors?



- From Mislevy & Riconscente, 2006



Computational Thinking Practices

Computational Thinking Practices

Example CS Concepts	Example Inquiry Skills	Example Non-Cognitive Skills
Algorithms	Evaluate	Communication
Programming	Explore	Teamwork/collaboration
Recursion	Analyze	Leadership
Abstraction	Explain	Self-efficacy
Debugging / Testing	Elaborate	Persistence
Variables	Model	Organization



Integration



PACT Project Accomplishments I

- Aligned *Exploring Computer Science* lesson objectives to CSTA, NETS, Common Core, and state science and CTE standards
- Defined computational thinking practices (CTP) and focal knowledge, skills, and abilities (FKSAs) that constitute them



PACT Project Accomplishments II

- Developed and applied CTP design patterns to guide the development of assessments for ECS
- Field testing assessments for ECS Units 1-4, and a summative assessment
- Conducting think aloud interviews with ECS students

Thank You!

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Menlo Park Headquarters

SRI International
333 Ravenswood Avenue
Menlo Park, CA 94025-3493
650.859.2000

Washington, D.C.

SRI International
1100 Wilson Blvd., Suite 2800
Arlington, VA 22209-3915
703.524.2053

*Additional U.S. and
international locations*

www.sri.com