Building Data-Literate Schools: Leadership for Teacher Research and Student Growth

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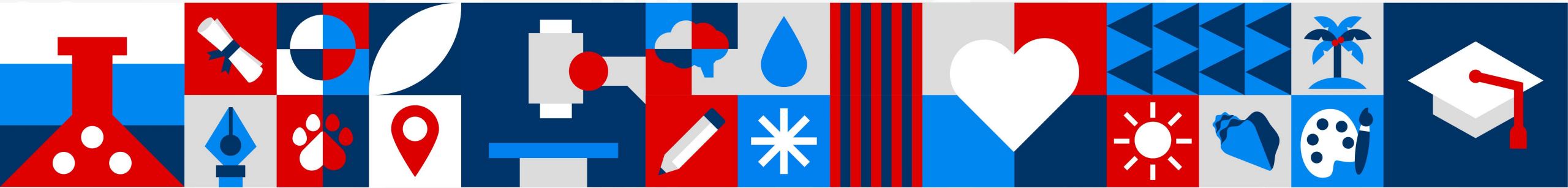
DATA LITERACY



Teachers as Data Analysts

- 95% of teachers report using academic and nonacademic data to understand student learning
- 86% of teachers say they rely on data to personalize instruction for students
- 51% agreed that their principal or assistant principal ensures that teachers have the time they need to use data effectively
- 45% of teachers taught themselves how to interpret data on the job
- 17% of teachers learned how to use data in their teacher training program

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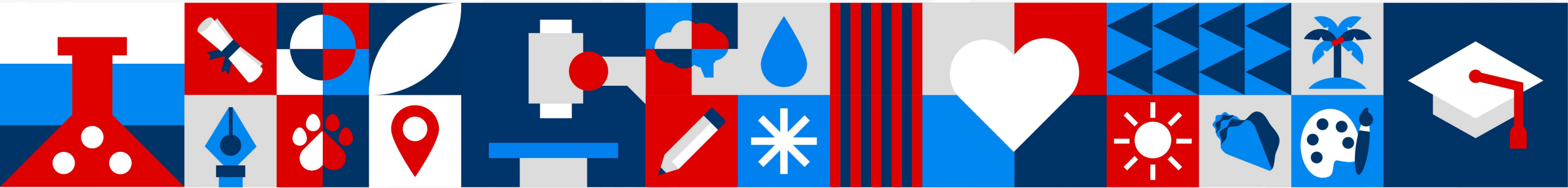
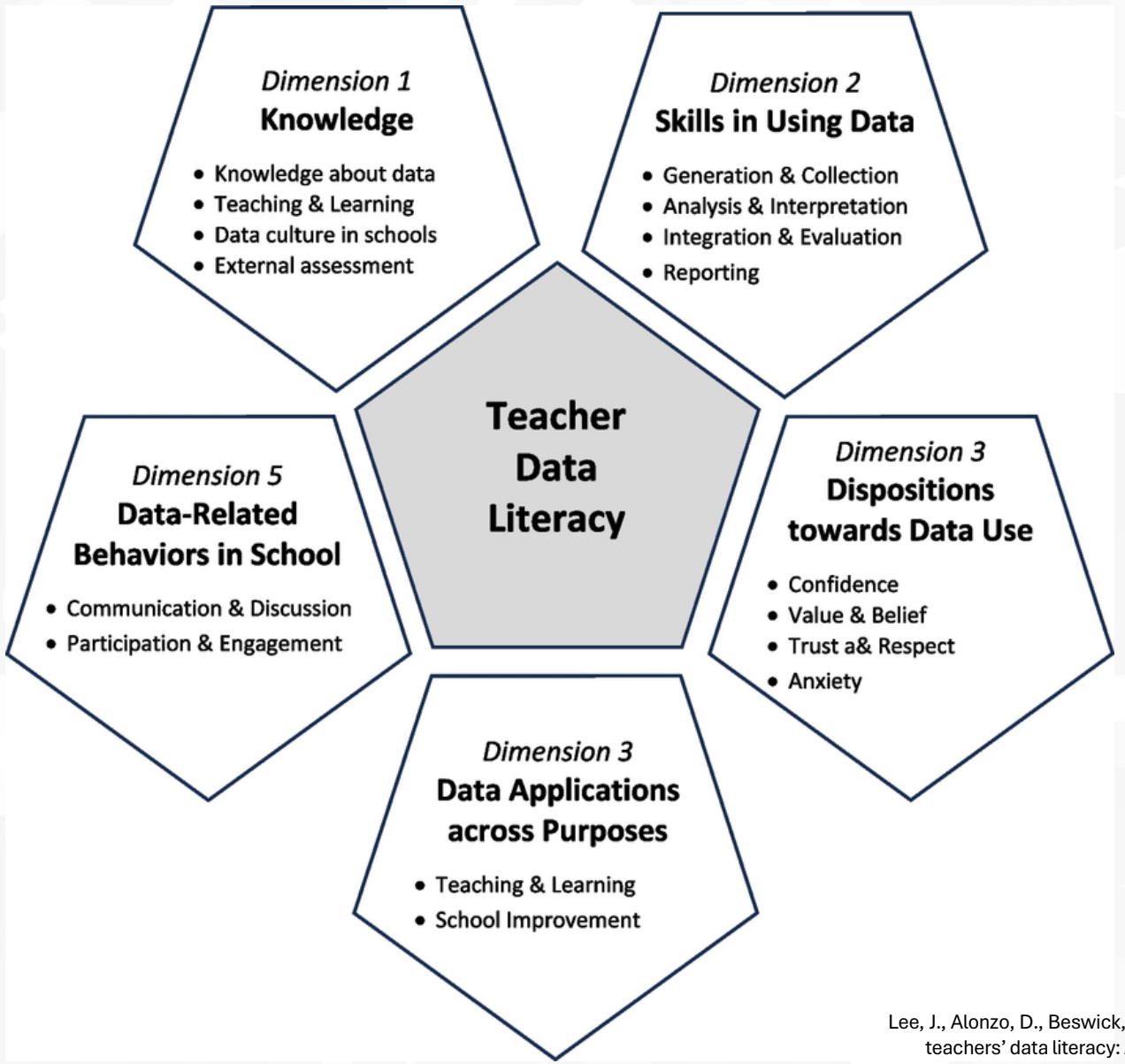
Data Quality Campaign. (2021). Teacher Data Literacy Week: 2021.

Instructional decisions based on evidence or data have the potential to be more sound.

However, exactly what knowledge and skills do teachers need to master to be a data-based decision maker in today's classrooms?





Lee, J., Alonzo, D., Beswick, K., Abril, J. M. V., Chew, A. W., & Oo, C. Z. (2024). Dimensions of teachers' data literacy: A systematic review of literature from 1990 to 2021. Educational Assessment, Evaluation and Accountability, 36(2), 145-200.

- **Knowledge** - Comprehensive understanding of a diverse range of data sources and purposes. Sole focus on standardized data hinders data-related knowledge.
    - *Do we draw upon a broad range of data sources to understand teaching and learning, or do we primarily rely on standardized assessment results?*
- **Skills in Using Data** - A wide range of skills, including data generation, collection, analysis, interpretation, evaluation, and reporting.
    - *How intentionally do we build teachers' capacity to analyze and interpret data collaboratively?*
- **Dispositions Toward Data Use** - Can impact effective utilization of data or impede the capacity to grow. In particular, social dynamics can greatly influence this.
    - *Does our school culture foster curiosity, trust, and openness around data, or do educators view data as something to fear or avoid?*
- **Dispositions towards Data Application** - Dara literate teachers consider data use essential in fulfilling roles and responsibilities.
    - *What evidence suggests that educators see data-informed decision making as part of their professional identity?*
- **Data-related Behaviors in Schools** - Data literate teachers are actively engaged in communication and discussions to enhance use and understanding of data.
    - *How often do educators engage in meaningful conversations and collaborative inquiry around data to improve teaching and learning?*

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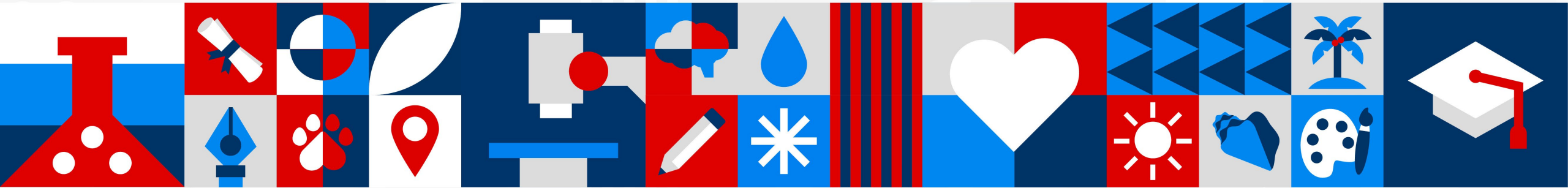
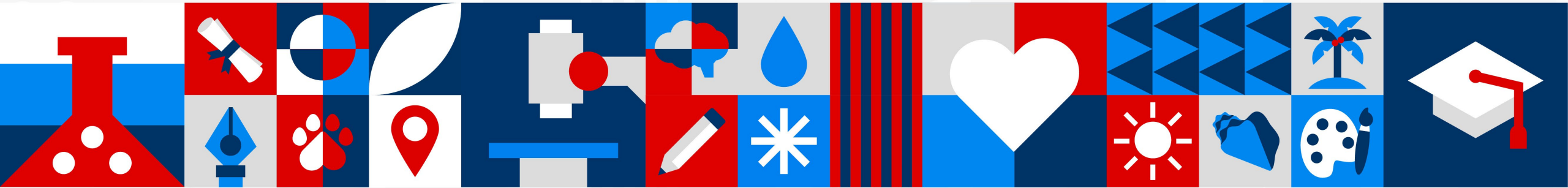
For Discussion:

Consider your role/context. To what extent do you create the conditions for educators to understand, value, apply, and collaboratively use diverse forms of data to build teacher data literacy?



"Low data literacy could result in teachers misinterpreting information or relying on incomplete data sources, which undermines the potential of data-informed teaching to improve learning outcomes. Barriers such as limited professional development opportunities, insufficient training in data interpretation, and a lack of collaborative structures within schools further exacerbated these challenges, leaving many educators uncertain about how to translate data into actionable instructional practices" (Consistente, 2026, p. 161).

Consistente, A. F. (2026). Data-Informed Teaching and Action Research in Improving Evidence-Based Instruction. *Acta Pedagogia Asiana*, *5*(2), 155-174.



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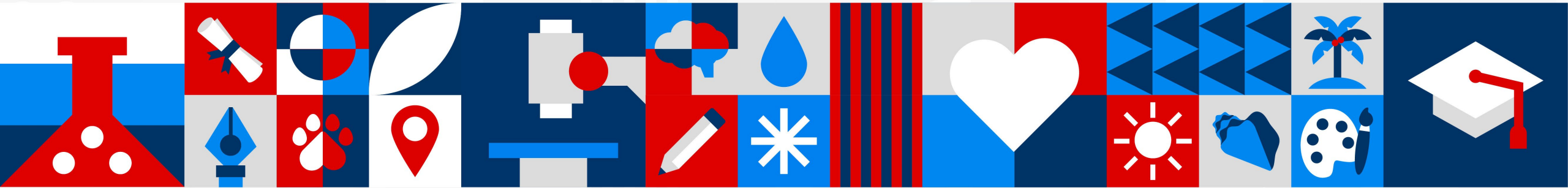
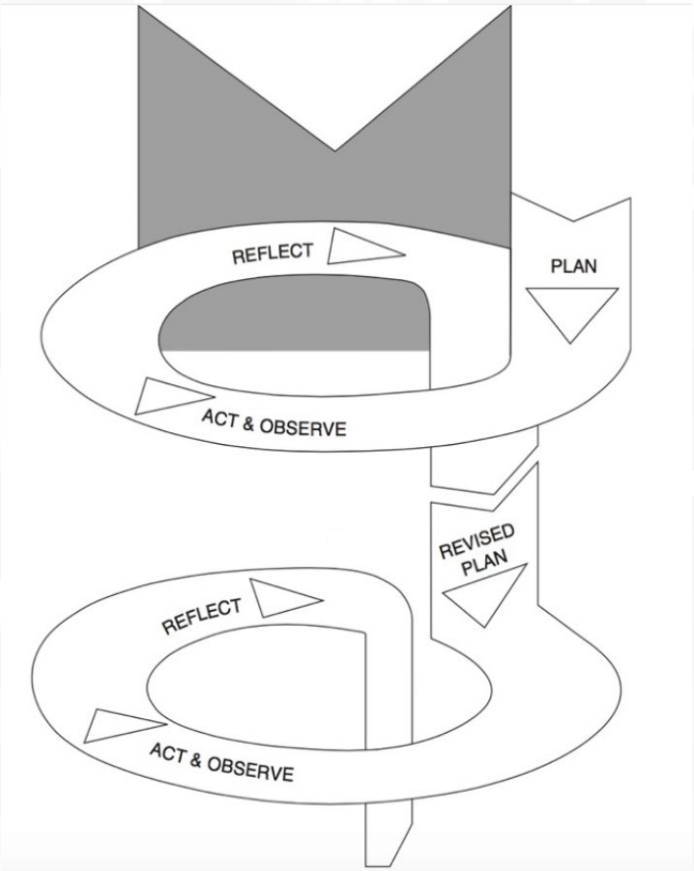
ACTION RESEARCH



Action Research as the Vehicle for Teacher Data Literacy

In order to build these components…

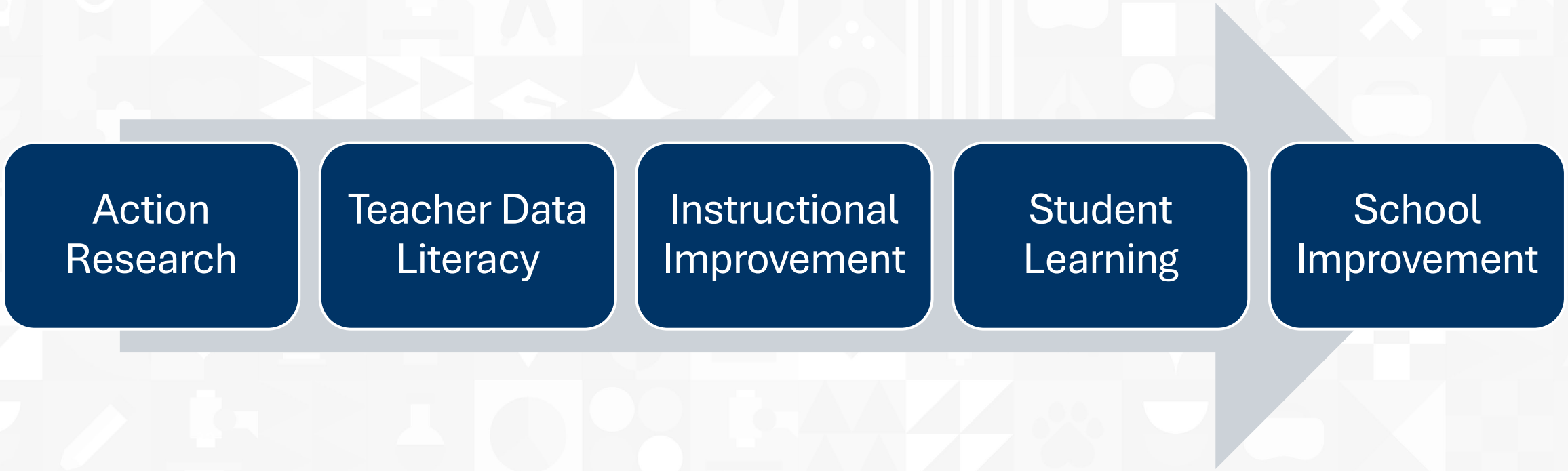
- Knowledge about diverse data sources
- Skills in collecting and analyzing data
- Positive dispositions toward data use
- Application of data to practice
- Collaborative data-related behaviors

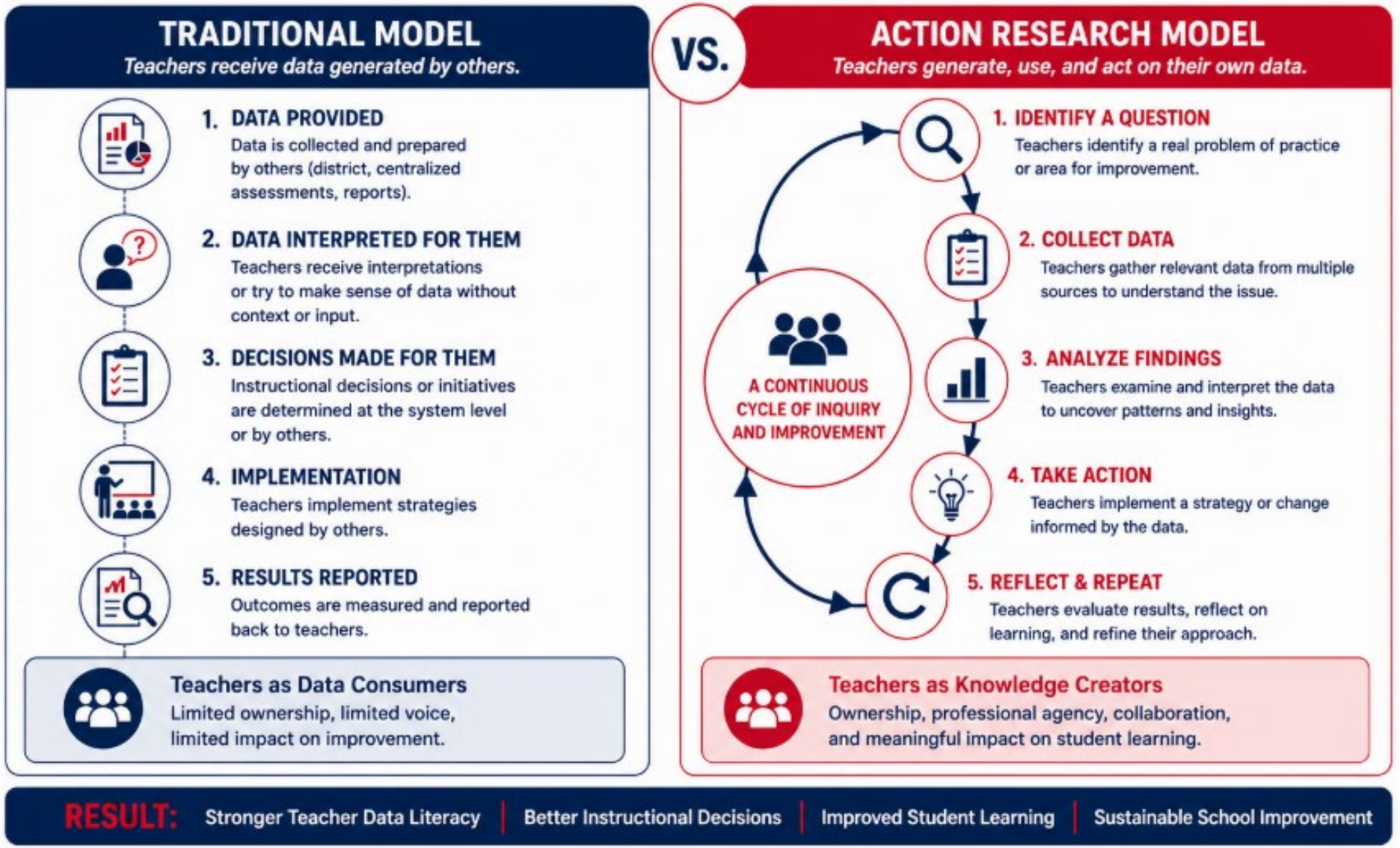


Educators need opportunities to engage in ongoing cycles of questioning, analyzing, deciding, and evaluating outcomes. Teacher data literacy develops through authentic inquiry, not isolated workshops.

Data Literacy Dimension	How Action Research Develops It
Knowledge	Teachers learn to use multiple data sources beyond standardized assessments
Skills	Teachers collect, analyze, interpret, and communicate findings
Dispositions Toward Data Use	Data become tools for learning rather than accountability
Dispositions Toward Application	Teachers see evidence use as part of professional decision making
Data-Related Behaviors	Inquiry promotes collaboration, discussion, and shared learning

Decades of research support the following…




TRADITIONAL MODEL
Teachers receive data generated by others.
1. DATA PROVIDED
Data is collected and prepared by others (district, centralized assessments, reports).
2. DATA INTERPRETED FOR THEM
Teachers receive interpretations or try to make sense of data without context or input.
3. DECISIONS MADE FOR THEM
Instructional decisions or initiatives are determined at the system level or by others.
4. IMPLEMENTATION
Teachers implement strategies designed by others.
5. RESULTS REPORTED
Outcomes are measured and reported back to teachers.
Teachers as Data Consumers
Limited ownership, limited voice, limited impact on improvement.
VS.
ACTION RESEARCH MODEL
Teachers generate, use, and act on their own data.
A CONTINUOUS CYCLE OF INQUIRY AND IMPROVEMENT
1. IDENTIFY A QUESTION
Teachers identify a real problem of practice or area for improvement.
2. COLLECT DATA
Teachers gather relevant data from multiple sources to understand the issue.
3. ANALYZE FINDINGS
Teachers examine and interpret the data to uncover patterns and insights.
4. TAKE ACTION
Teachers implement a strategy or change informed by the data.
5. REFLECT & REPEAT
Teachers evaluate results, reflect on learning, and refine their approach.
Teachers as Knowledge Creators
Ownership, professional agency, collaboration, and meaningful impact on student learning.
RESULT: Stronger Teacher Data Literacy | Better Instructional Decisions | Improved Student Learning | Sustainable School Improvement

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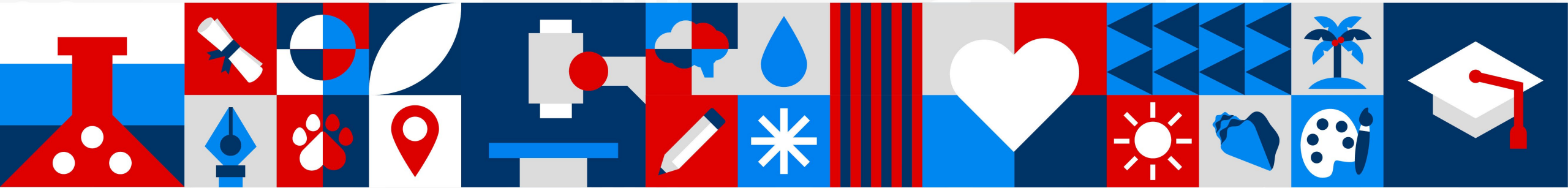
COMPREHENSIVE EDUCATOR RESEARCH PROGRAM



FAU Laboratory Schools

- Public, K-12 school on FAU's campuses in Boca Raton and Jupiter
- Part of FAU's College of Education

Mission

- Demonstrate best practices in teacher education
- Innovate, develop, and provide students a challenging curriculum, balanced with innovative academic support
- Conduct and support emerging educational research

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Research

at FAU Lab Schools

- Support university research
- Support science instruction
- Guide dual enrolled FAUHS students in undergraduate research
- Research facilities
- Comprehensive Educator Research Program

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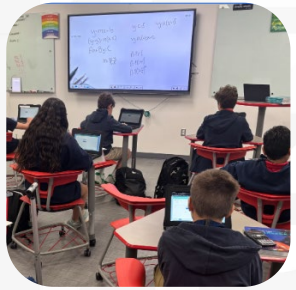
Comprehensive Educator Research Program

Exploration: New teacher research sessions

Level 1: Graduate course on action research



Level 2: Research Communities of Practice

Level 3: Mentor new educator researchers, broaden study scope

Level 4: Educators collaborate with university researchers

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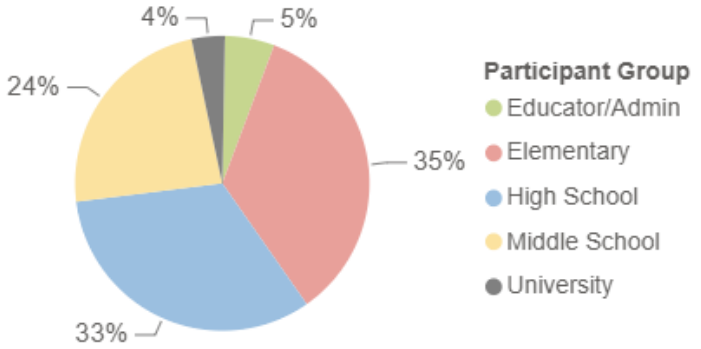
CERP Outcomes – 8 years of data

Educational Research Studies by ADHUS/FAUHS Teachers & Staff

101

Total Studies



2025-2026

- "Work in Progress": Teaching Social and Emotional Learning through Art
- 4th Grade Structuring Math Small Groups
- 5th Grade Real World Applications of Math
- Beyond Broader Impacts: Making Curriculum-based Outreach Last Past Your Grant Completion
- Chemistry of Cooking Club
- Elective Course on Archaeology
- Elective Course on DaVinci
- Exploring Primary Students' Use of AI Image Prompting to Support Literacy Learning
- From Collaboration to Creativity: Integrating Educational Robots into a STEAM and Science through Art Curriculum
- Normalizing Tutoring for Advanced Learners: Reducing Stigma and Increasing Academic Support Utilization
- PLC Support and Perception of PLC Value
- Teens and AI Companions
- The Impact of AI Supported Debate Preparation for Middle School Students
- The Power of Collaborative Writing in an Upper-Level Undergraduate CURE
- Using GeoGebra Constructions to Support Conceptual Understanding in Geometry

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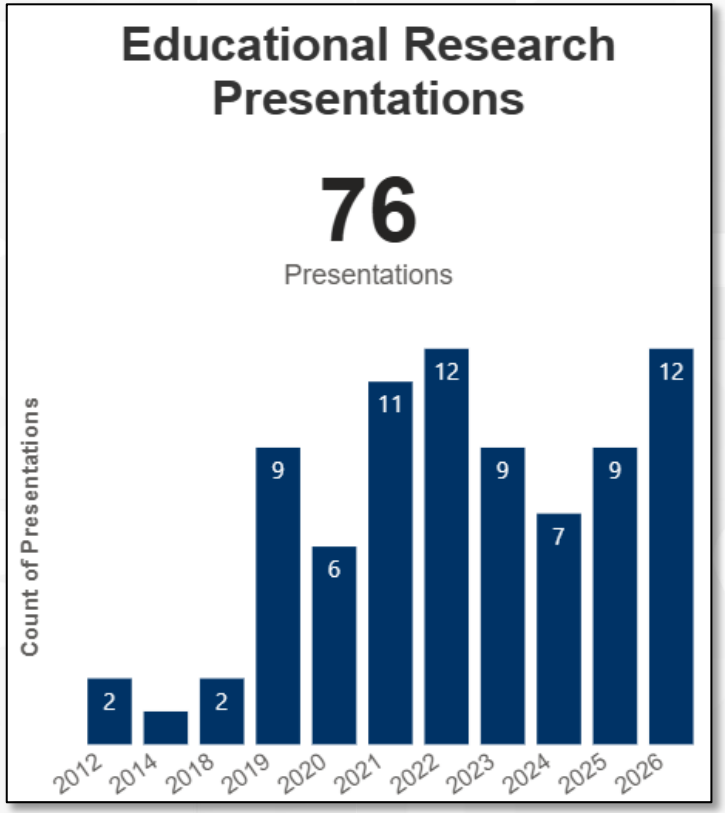
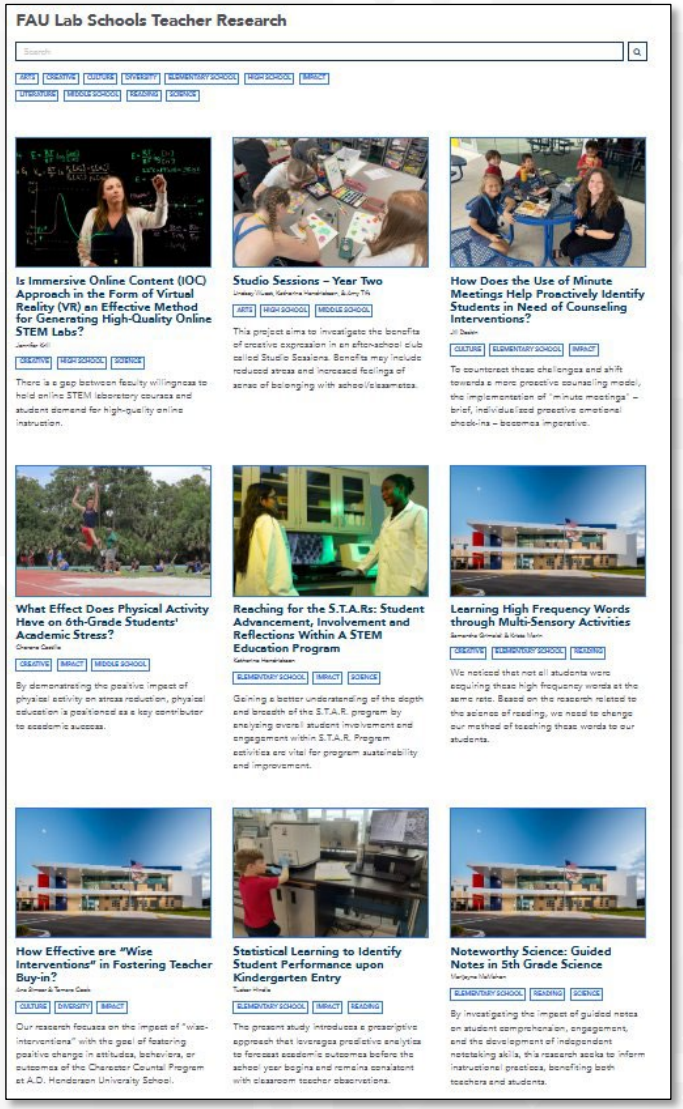
CERP Outcomes – 8 years of data





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Key Components for Transformation and Transfer

Scaffolding

- Support to build skill, gradual release
- Build on prior knowledge
- Provided in CERP levels and shift to independence

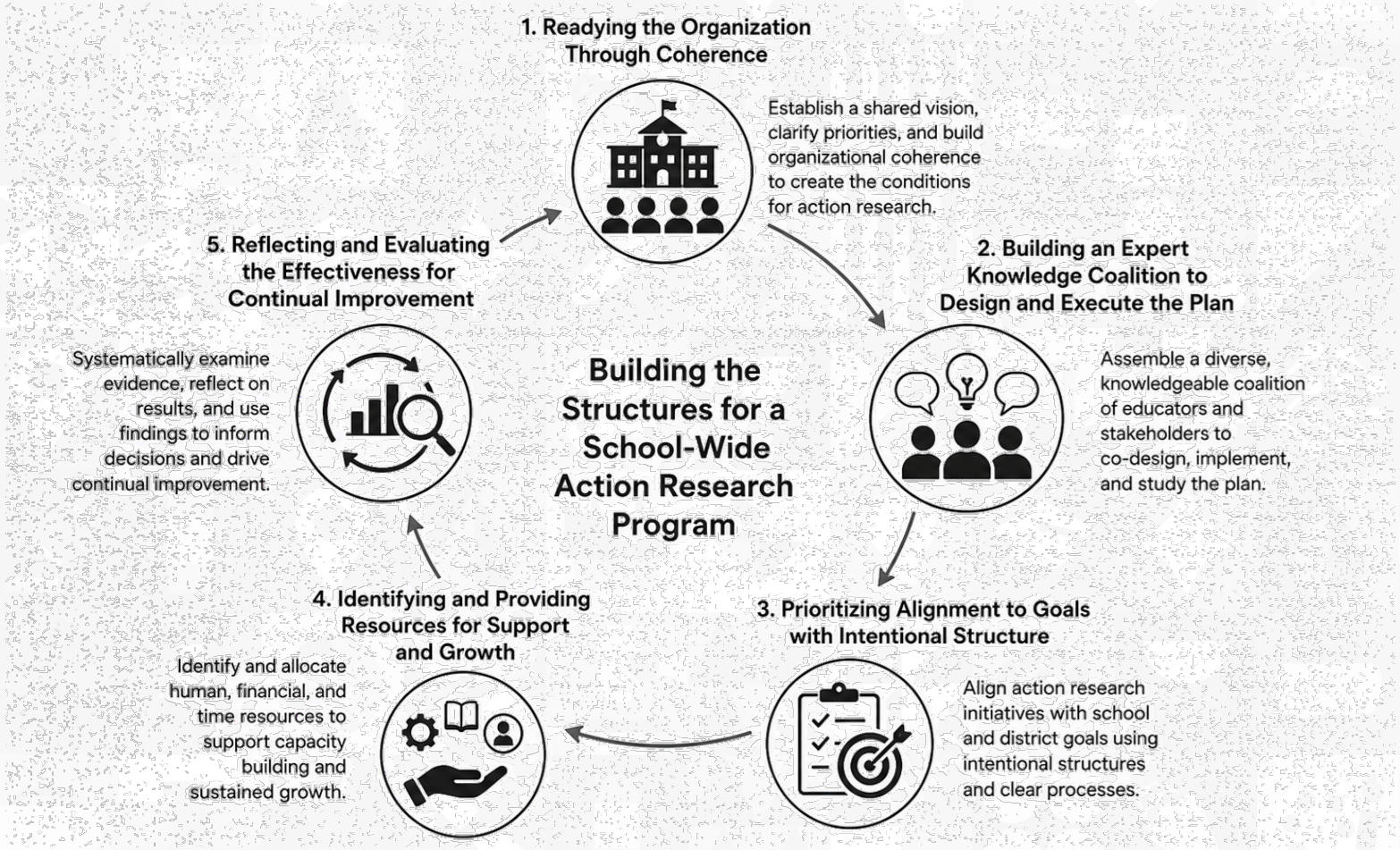
Choice

- Participation is optional
- Participants select research topic
- Inclusive of teachers, staff, administrators

Collaboration

- Hallmark of high-quality PD and strong school culture
- Formal and informal opportunities
- Within grades, across topics, with university partners

Leadership Components for Building a School-Wide Action Research Program



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Vaughan-McGovern, M., Meredith, T.L., Calabrese, E., Timar, A., Taylor, P. & Diaz, G. *Building Schoolwide Data Literacy: A Guide to Action Research for Sustainable Growth*. Taylor and Francis. *In press*.

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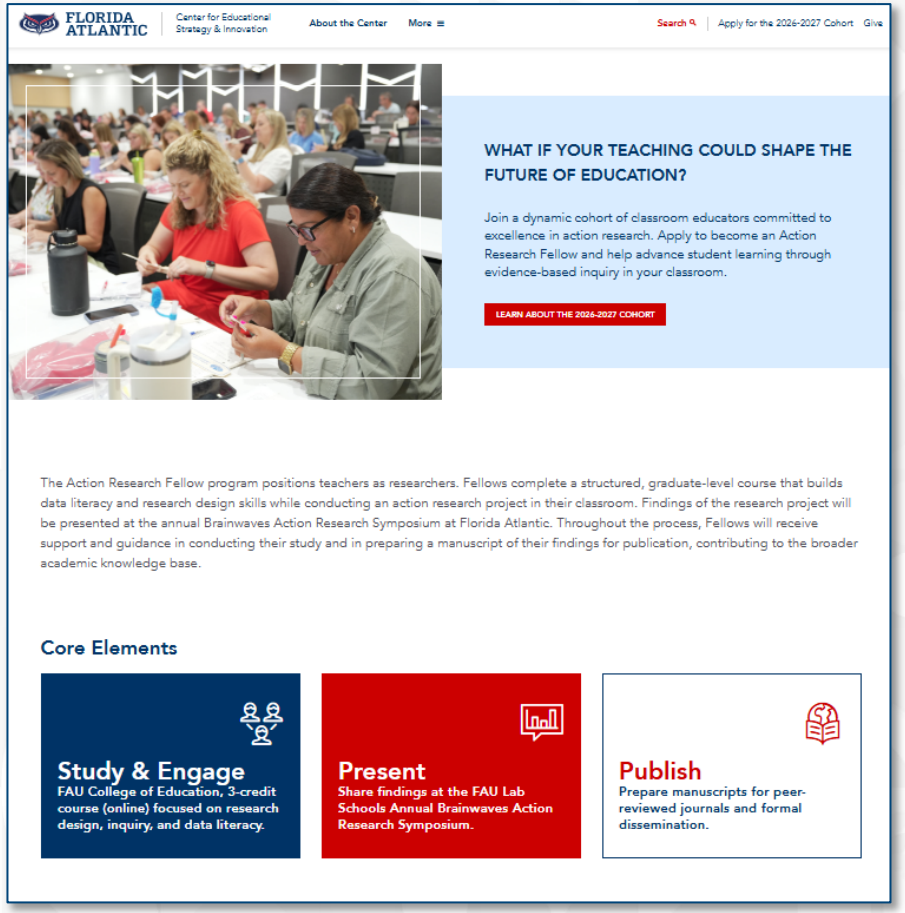
Benefits of Conducting Research

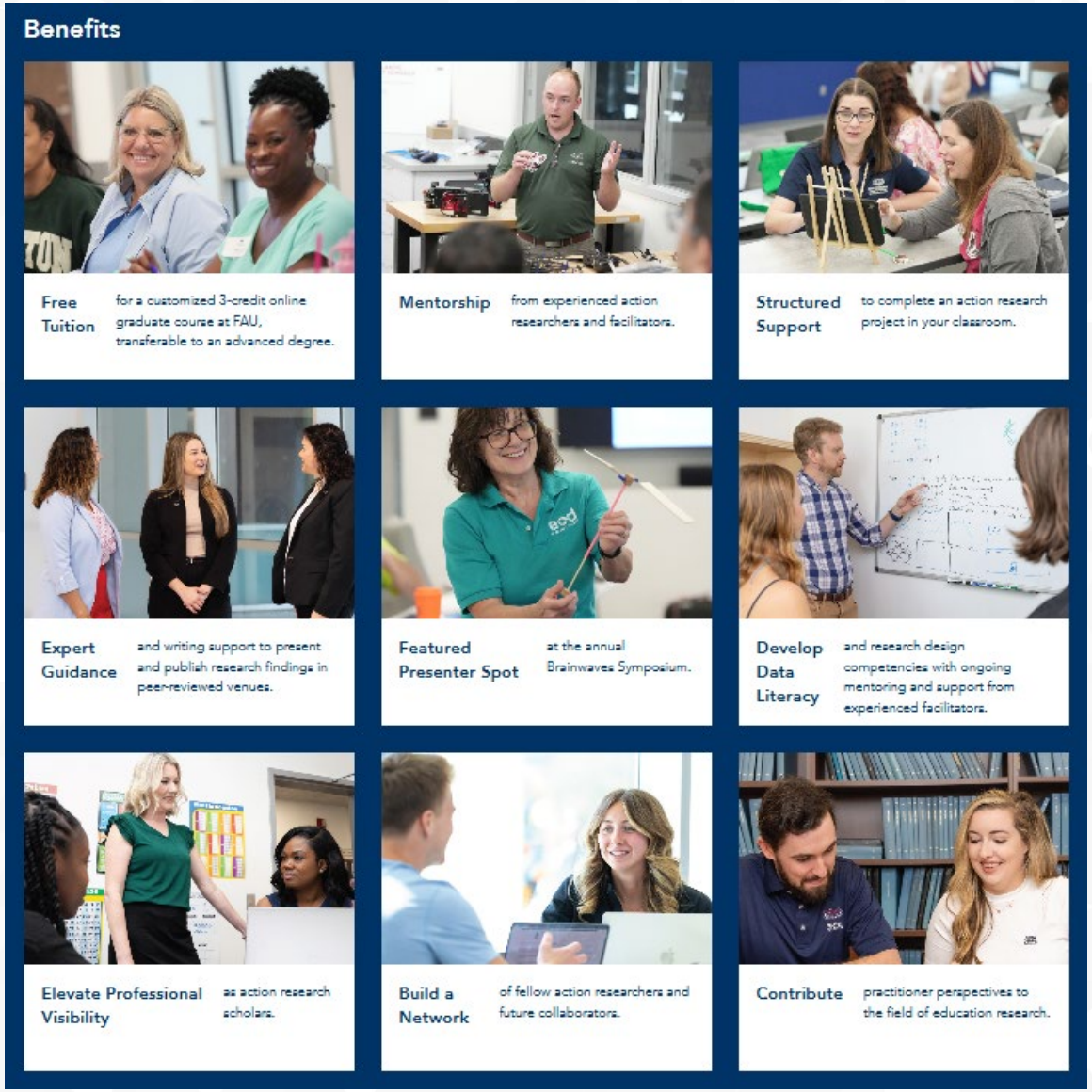
- Leverage competitive grant to provide an incentive to faculty
- Opportunities to present and publish results
- Engage as collaborators in university research studies
- Support accreditation process
- Research informs practice and benefits students

Expanding our Reach

Action Research Fellows Program

Center for Educational Strategy and Innovation





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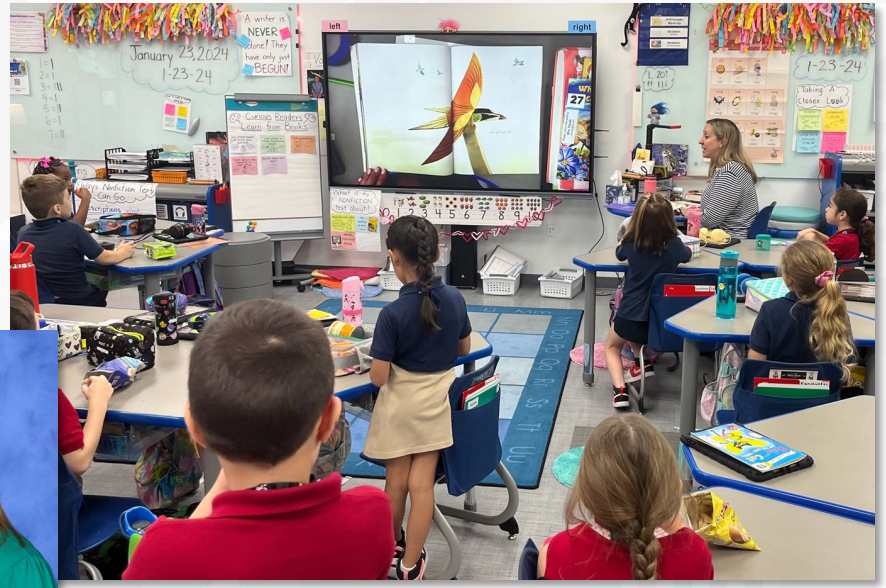
Meet Our Action Researchers



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Visit our website to see more action research:
https://labschools.fau.edu/teacher-research/

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