

# Using Research to Inform Design and Implementation

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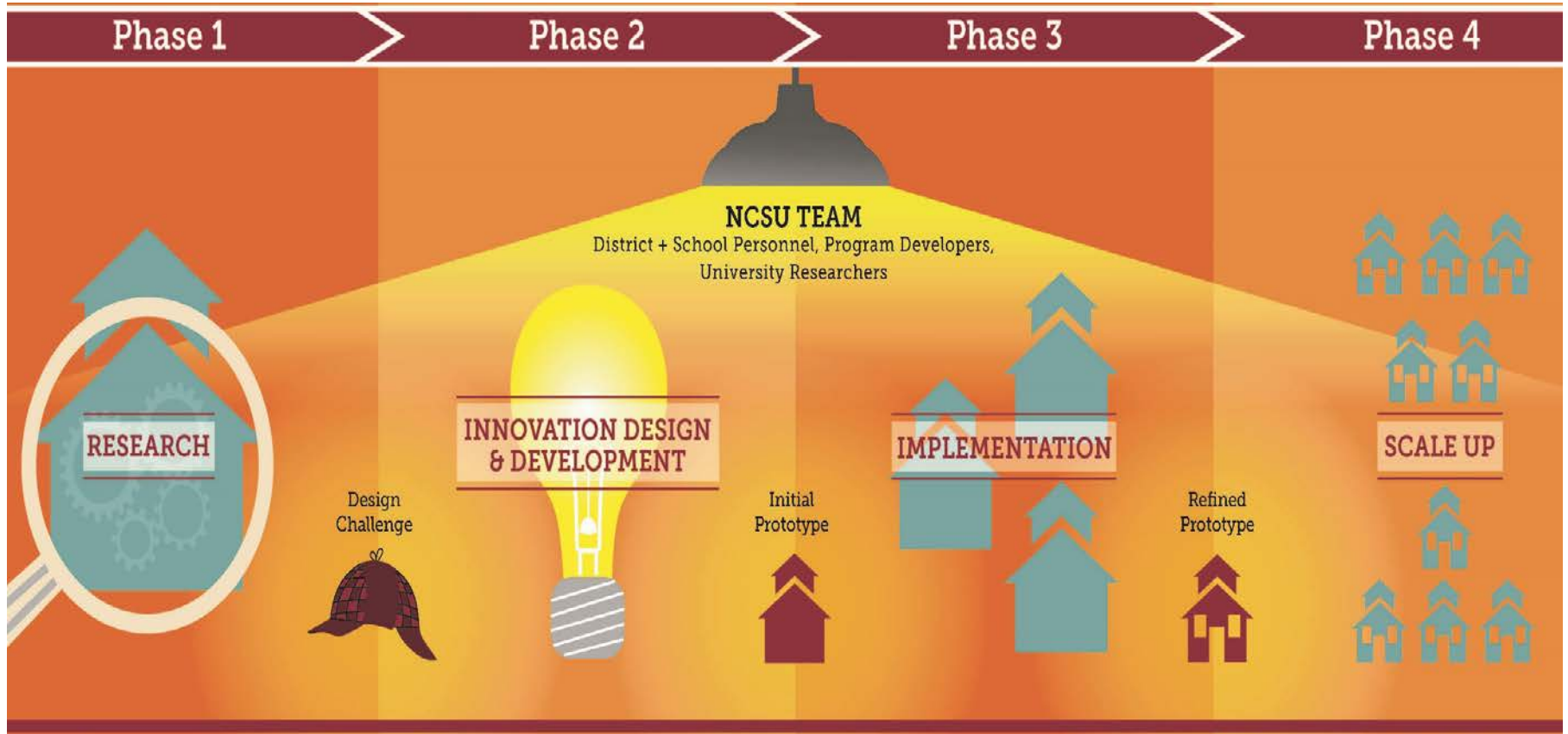
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lives.

  
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# The NCSU's Model for Improvement



# Applying the model

- Use value added models to identify schools that “beat the odds” for minority, ELL, and low income students.
- Study both higher and lower *value-added* schools to identify the programs, processes, and practices that are likely to have led to differences in performance.
- Facilitate district design teams in developing innovations that capture systematic differences between high and low value added schools.
- Support district and school design teams in adapting to local context and implementing innovations.
- Gradually withdraw support as the districts increase in capacity and take ownership of scaling up the innovations.

# NCSU's Principles of Continuous Improvement

- Innovations will reflect the core elements of programs or practices that have been shown to be effective in the district in which the improvement work is occurring
- Rapid-cycle testing will be used to allow the prototype to be revised in ways that adapt it to different school contexts
- Authentic partnerships will be employed that strive to both take advantage of and build local ownership and expertise so that changes in practice can be brought to scale with depth and sustainability

# Study Methods:

## Choosing case study schools

- Use value added models to rank high schools
  - Considered performance in ELA, math, and science
  - Considered performance of all students and specific subgroups
  - Used VA measures from most recent year and 3 year average
  - Models included controls for prior achievement and student characteristics
- Two schools that consistently ranked near the top and two schools that consistently ranked near the bottom in the district distribution were selected
- Researchers were blind to the VA status of the schools during the first visit

# Study Methods-Studying the Schools

- Three week-long visits (fall, winter, spring) to each school
- In each school, we collected the following data
  - 50 interviews: Administrators, core-subject teachers, counselors, support staff, and students
  - 9 focus groups (students, teachers, student activity leaders)
  - 70 observations in 9<sup>th</sup> and 10<sup>th</sup> grade English, math, and science classrooms
  - 9 student shadowing observations
- In addition, we collaborated with the district research office to obtain additional data from all high schools
  - Surveys of principals, teachers, students, parents
  - Administrative data on course-taking, attendance, discipline

# Research Lens: Essential Components of Effective Schools

- Learning-centered Leadership
- Rigorous and Aligned Curriculum
- Quality Instruction
- Systematic Use of Data
- Personalized Learning Connections
- Culture of Learning and Professional Behavior
- Systemic Performance Accountability
- Connections to External Communities

*How do the practices that high schools implement create and sustain the essential components?*

## Main differentiating characteristic between our HVA and LVA schools in Broward CPS

### *Personalization for Social and Academic Learning*

- Systematic structures to promote strong relationships between adults and students
- Strong and reliable disciplinary and support systems for students that engendered feelings of caring and trust
- Used data to individualize instruction
- Instructional activities that drew on students' experiences and interests
- Encouraged stronger linkages with parents.



# Differentiating characteristic between our HVA and LVA schools in FWISD

## *Student Ownership and Responsibility*

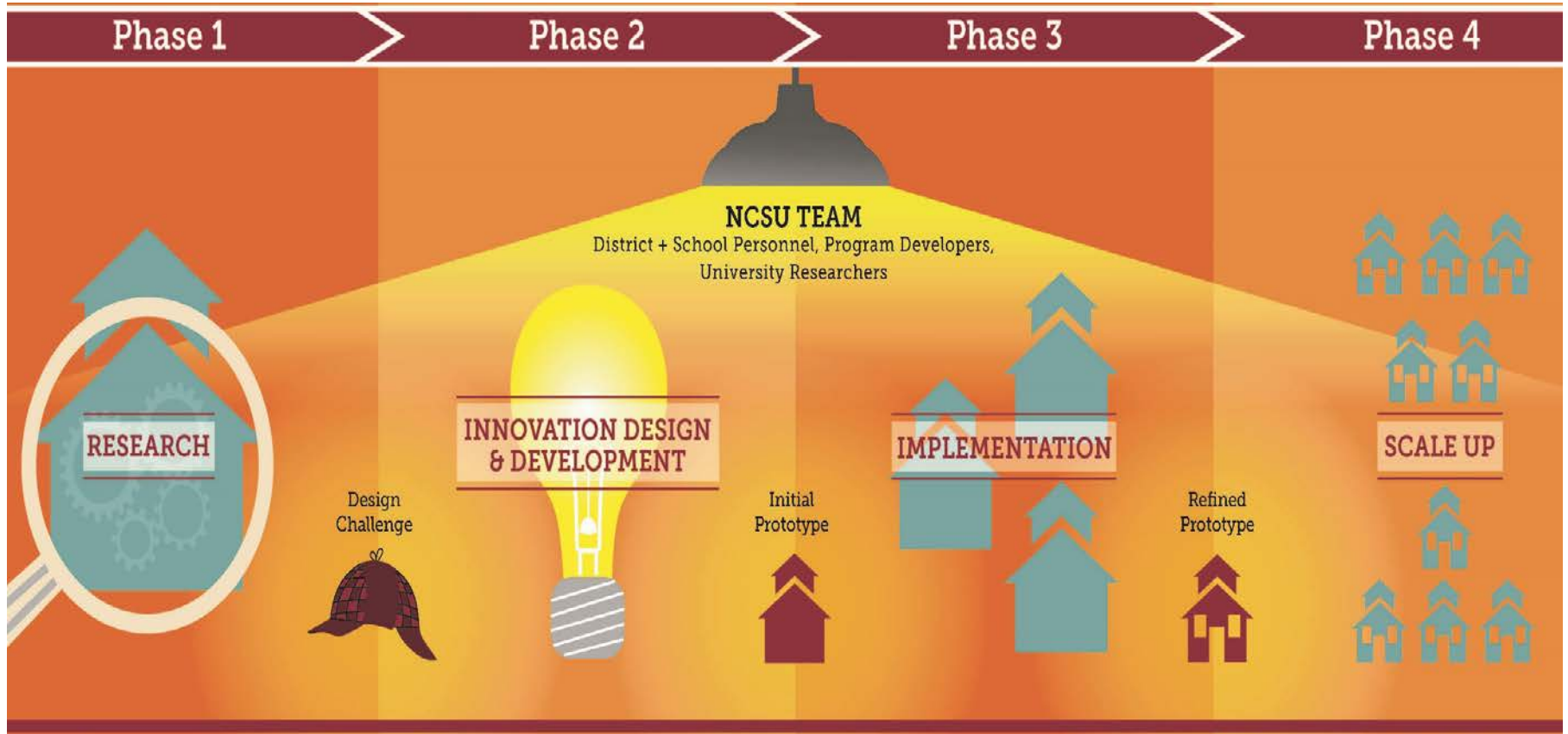
Teachers and other adults in the HVA schools scaffolded students' learning of both academic and social behaviors to guide them in assuming ownership and responsibility for their academic success.

- Changing beliefs and mindsets of students to increase self-efficacy
- Engaging students to do challenging academic work

Schools developed an integrated system of academic press and support.

- Academic press: a culture that encourages students to achieve
- Academic support: a set of resources to foster academic success

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# Rapid-cycle Testing

- School teams engaged in Plan, Do, Study, Act (PDSA) cycles to iteratively test how small changes to the innovation design could result in larger school-wide changes.
- Capacity-building for educators to sustain improvement efforts in their schools and the district.
- Researchers co-design data collection instruments and oversee data analysis.

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# Research-Practice Partnership

- Involve researchers in the delivery of the design process
  - Researchers attended 30 meetings in each district.
  - Shared ongoing feedback with EDC about ways to improve the design process following each session and with a detailed process analysis at the end of each phase of the work.
- Involve researchers in the iterative development process
  - Following field work visits, research teams shared reports with School Innovation Design Teams (SIDTs) and administrators.

# How is this different than Improvement Science?

- While in Improvement Science the “problems of practice” often come from the field...we used research conducted in the context of our partner districts to develop a “Design Challenge”
- The initial designs were developed by district practitioners (supported by researchers and developers)
- Practitioners conducted PDSA cycles with the support of developers and researchers

# Research plays a role throughout

- Quick turnaround research was conducted on the design and implementation phases in order to improve process
- More in depth process analyses conducted to study how to improve the model
- Monitoring measures of implementation and scale as important as monitoring changes in desired outcomes