

A New Model for Systemic Change in Undergraduate STEM Education

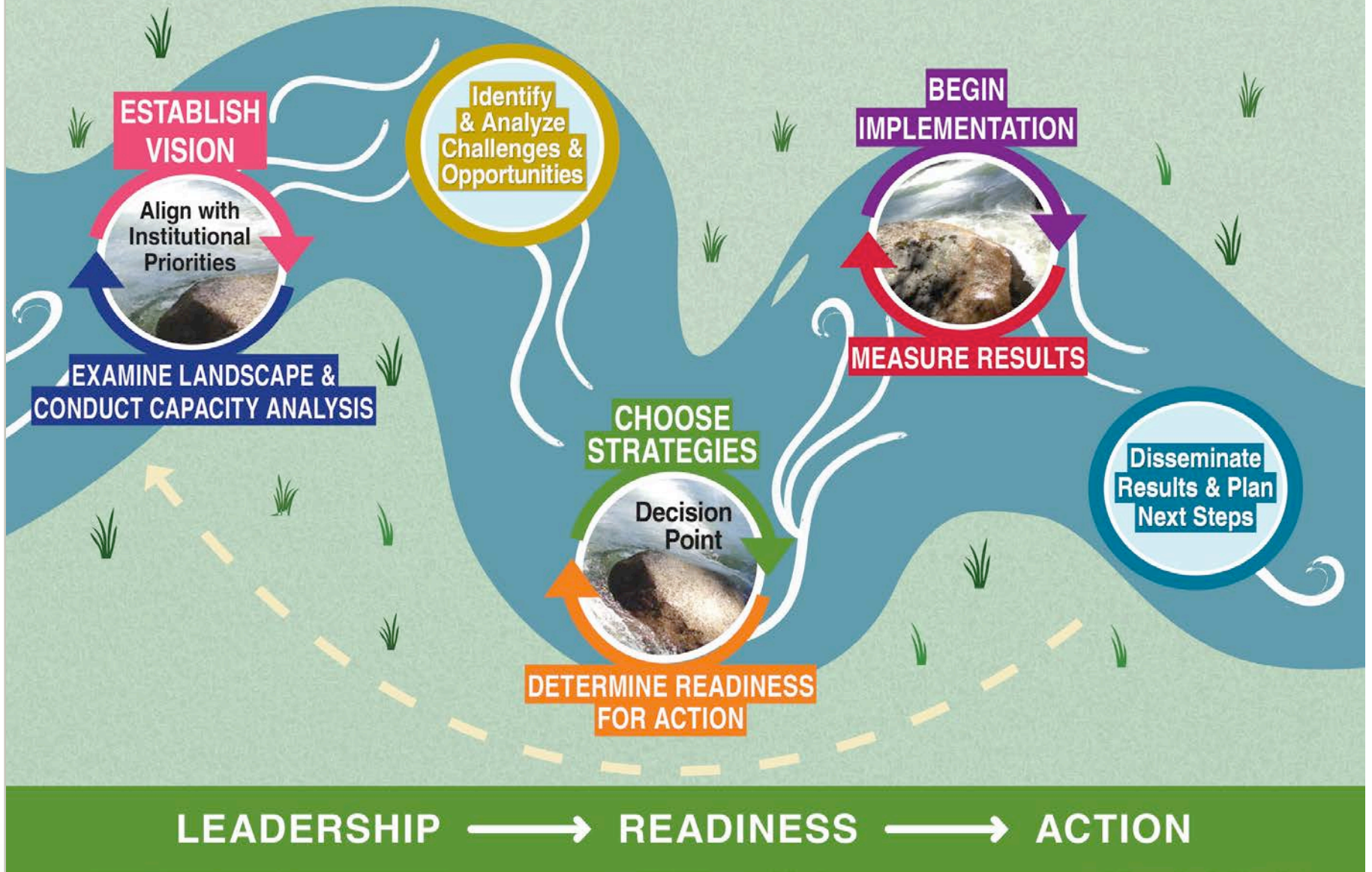
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How the Model Helps Accomplish Reform

- ✧ Articulates a **vision** or direction for change
- ✧ Creates a **common language** and vision around the change
- ✧ Ensures **collective leadership**
- ✧ Charts a **path** for reaching the vision and goals
- ✧ Pinpoints needed **interventions** and strategies
- ✧ Serves as **catalyst** for priority setting
- ✧ Justifies **resources** (financial, human, physical) for the vision
- ✧ Fosters **learning**
- ✧ Serves as **accountability** tool for maintaining momentum on the change
- ✧ Audits or **evaluates** where you are now and where you want to go
- ✧ Maintains **focus and momentum** over the long time period change often takes

MODEL FOR SYSTEMIC INSTITUTIONAL CHANGE



Where people usually start

- **It is easy to start where others have:**
 - From a published paper describing a successful initiative
 - From a conference session or workshop
 - From what a colleague at another institution has tried
 - What your society recommends

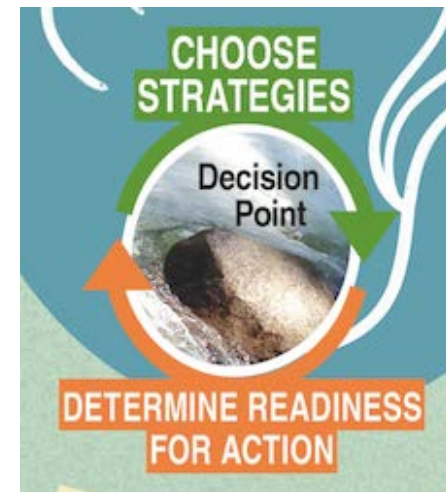


This generally isn't successful in creating systemic or scalable change. Why not?



Lack of common language and shared vision

Unclear understanding of the problem



Premature launch without full understanding of resources, expertise required for success

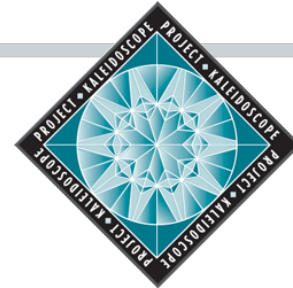
Implicit Theories of Change

- We just need to do something!
- If we just had more money or more faculty!
- If we change the department, that will create broader change.
- All it takes is one strong champion.
- Everyone will be convinced by the data.
- Change is a rational, linear process.
- Change is either bottom-up OR top-down.
- Starting without a vision or plan will not lead to success.
- You can't change a system by just doing more of the same.
- Your departmental program depends on many others.
- Team and leader development is essential.
- Some will be threatened by data that students aren't learning in certain environments.
- Change is messy, emotional, political.
- Change is best fostered by collaborations between grassroots action and treetop support.

Measures/Indicators Identified in the Study

- Basic demographic data on students, including ethnicity, gender, Pell eligibility.
- Retention rates, disaggregated by important demographic categories
- Graduation rates, disaggregated by important demographic categories
- Course completion, grades, progression rates
- Direct assessment of student learning in courses and programs
- Indirect assessment of student learning and experiences (e.g., NSSE)
- Program effectiveness and evaluation data
- Accreditation indicators
- Existence of advising/mentoring programs; student participation in these programs (disaggregated)
- Data on faculty attitudes and teaching practices
- Existence of faculty development programs; faculty participation
- Ways to measure effective teaching
- DBER activity (grants, conference attendance, publications)

Project Acknowledgements



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Published Guidebook

- Detailed description of the model
- Readiness survey
- Examples of indicators, measures of success
- Examples of types of interventions for different types of challenges
- Rubric to monitor progress
- Excerpts from campus case studies



Project Resources

Spring 2015 Peer Review

<https://www.aacu.org/peerreview/2015/spring>

Guidebook published soon (@aacu.org)

Campus Team Workbook

available on the Project Website:

<http://www.aacu.org/pkal/educationframework>

Questions?

