Designing Propagation Plans to Promote Sustained Adoption of Educational Innovations

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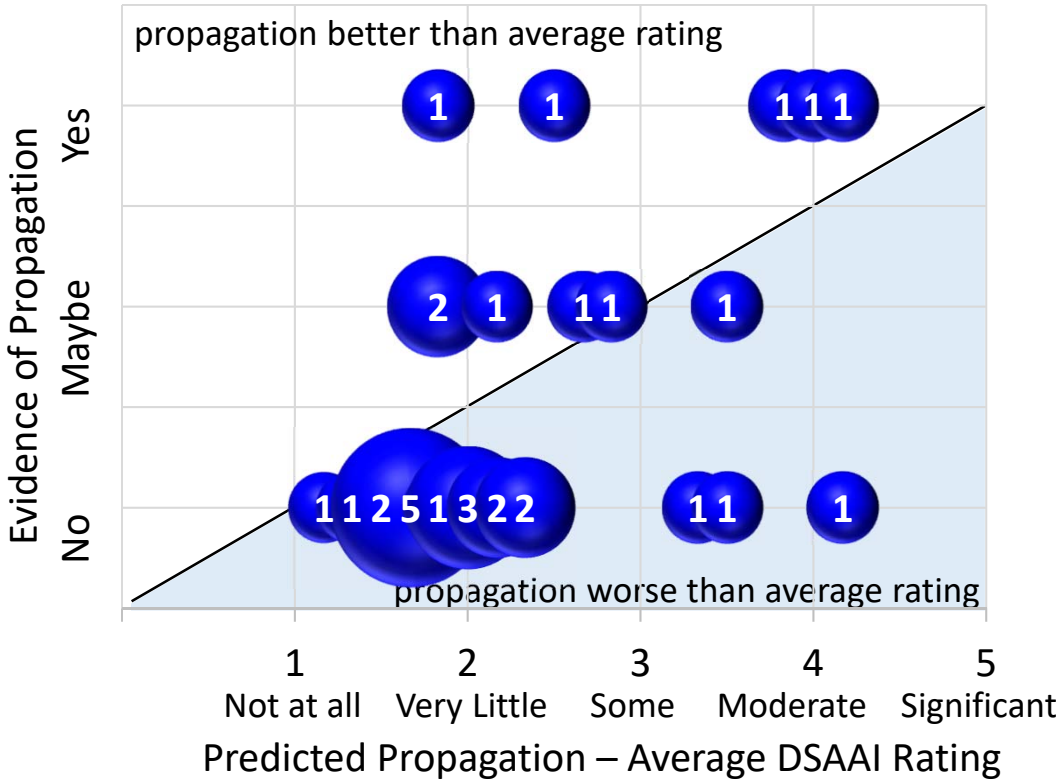
Agenda

Part	Length (minutes)	Format	Activity
1	15	Presentation	Introduction, Overview, Designing for Sustained Adoption Assessment Instrument (DSAAI)
2	15	Small Groups	Evaluating a Sample Structured Summary for a Propagation Plan Using the DSAAI
3	10	Q&A	Questions and Responses Based on the Small-group Activity
4	15	Presentation	Improving a Propagation Plan in Three Parts
5	15	Small Groups	Improve a Sample Structured Summary for a Propagation Plan
6	5	Q&A	Questions and Wrap-up

Comparison: Actual vs. Predicted Propagation

Designing for Sustained Adoption Assessment Instrument (DSAAI)



DSAAI – Six Aspects of a Propagation Plan that Influence Likelihood of Propagation

A1. Intended audience is identified (who makes adoption decisions)

A2. Propagation strategies engage intended adopters

A3. Project begins to address issues of propagation from the very beginning of the project

A4. Propagation strategies consider the different aspects of the instructional system

A5. Level of thoroughness in propagation strategy

A6. Propagation strategies depend on the type of project

Each aspect was evaluated at one of five levels. Descriptions of the levels are part of the DSAAI.

Overview: DSAAI

Section	Description
Product type (descriptive)	Broadly characterizes the type of product: (1) developing or propagating a specific curriculum or pedagogy and (2) developing professional resources focused on changing teaching practices
Features of target curricula and/or pedagogies (descriptive)	Focuses on features of the target curricula and/or pedagogies and the degree of change required for adoption/adaptation
Propagation activities (descriptive)	Identifies specific activities in the propagation plans in the proposal
Aspects of propagation strategies that influence the likelihood of success (evaluative)	Focuses on elements in the propagation plans presented in the proposal that have been identified in the literature as necessary for, or supportive of, adoption of education innovations

Source: Stanford, C., Cole, R. S., Froyd, J. E., Friedrichsen, D., Khatri, R., & Henderson, C. (2016). Supporting sustained adoption of education innovations: The Designing for Sustained Adoption Assessment Instrument. *International Journal of STEM Education, 3*(1), 1-13. doi:10.1186/s40594-016-0034-3

Three-page Structured Project Summary

Project Overview: Explicitly state project goals. Also, provide a brief description of the product you will develop. You do not need to justify the quality of the materials as you would in a full proposal. We will assume they are good. Also, it is not necessary to justify the need for the project. Again, we will assume the project is a good idea. The purpose of this section is to provide context to understand the proposal.

Potential Adopters: Who are you targeting to use your product? Detailed descriptions of the potential adopters are encouraged, together with rationales for identification of potential adopters. Few educational innovations are intended for everyone and propagation plans are generally more effective if potential adopters are explicitly described.

Development Activities: How will you develop a strong product?

Broader Impact Plan: How will you get others to use your product? This should include your dissemination activities and sustainability plans.

Propagation Evaluation Plan: How will you know that your propagation efforts: development, dissemination, and support are being effective? Ongoing evaluation of the propagation plan can help you revise and adapt.

Project Timeline: When will you do what aspects of the project?

Personnel: Who will work on the project and in what ways?

Format: (12 pt. Times New Roman, single-spaced, 1 inch margins. The document should contain 7 sections, each of which should be no more than ½-page in length, with a total document length of no more than 3 pages. Bulleted lists, instead of full paragraphs, are encouraged as appropriate.)

Three-page Structured Project Summary

Project Overview: Explicitly state project goals and provide a brief description of the innovation.

Potential Adopters: Who are you targeting to use your product?

Development Activities: How will you develop a strong product?

Broader Impact Plan: How will you get others to use your product?

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Small Group Activity: Evaluate 3-page Structured Project Summary Using the DSAAI

- Form small groups
- Review structured project summary
- Using the DSAAI rate the structured project summary on each of the six aspects that influence propagation of the innovation
- 15 minutes

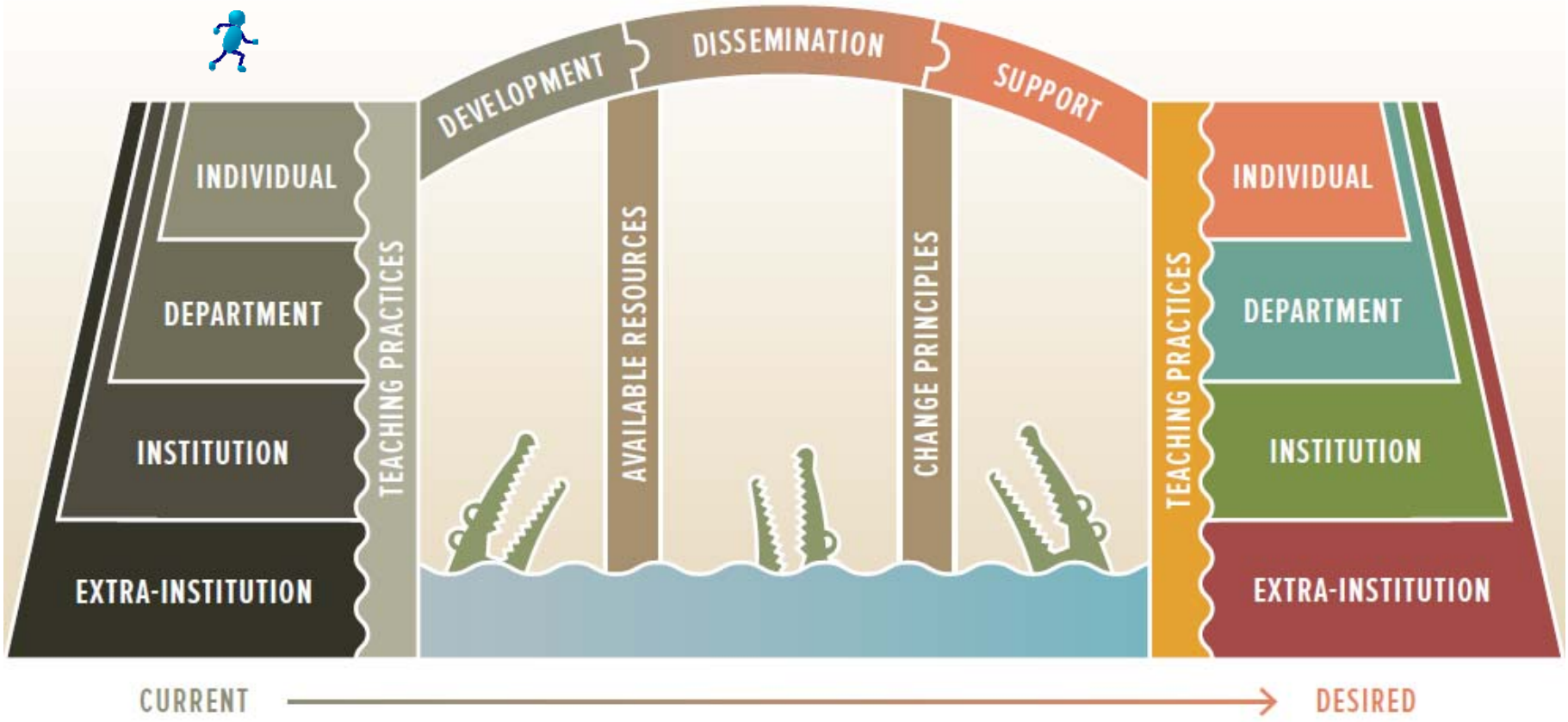
Questions and Answers

Questions?

Dissemination alone is not sufficient to bridge the gap between desired and current teaching practices.

Henderson, C., Cole, R., Froyd, J., Gilbuena, D., Khatri, R., & Stanford, C. (2015). *Designing Educational Innovations for Sustained Adoption: A How-to Guide for Education Developers Who Want to Increase the Impact of their Work*.

Our Framework: Bridging the gap requires planned development, dissemination, and support



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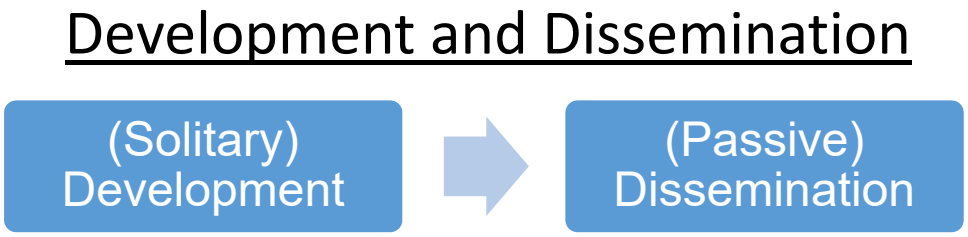
Develop Interactively

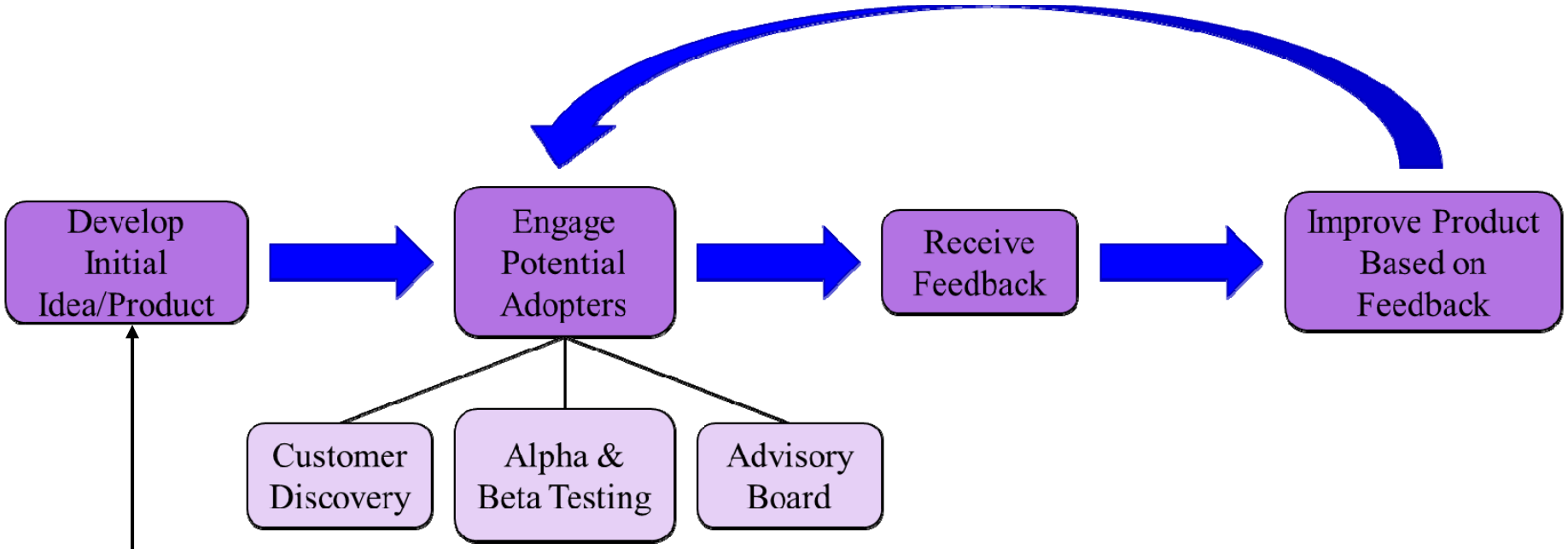
- Objectives
  - Articulate the importance of engaging potential adopters during development of your product
  - Develop a plan, based on the characteristics of your product, for appropriate ways to engage potential adopters during development of your product

Research suggests that typical development and dissemination does not work well



- Innovation never gets tried
- Gets tried and then dropped
  - Average discontinuation of undergraduate physics teaching innovations is 54% (Henderson & Dancy, 2009)
- Gets used superficially
  - Between 6% and 47% of physics faculty use teaching innovations as described by the developer
  - e.g., Peer Instruction without the peer-peer interaction (Henderson & Dancy, 2005)

The Interactive Development Process



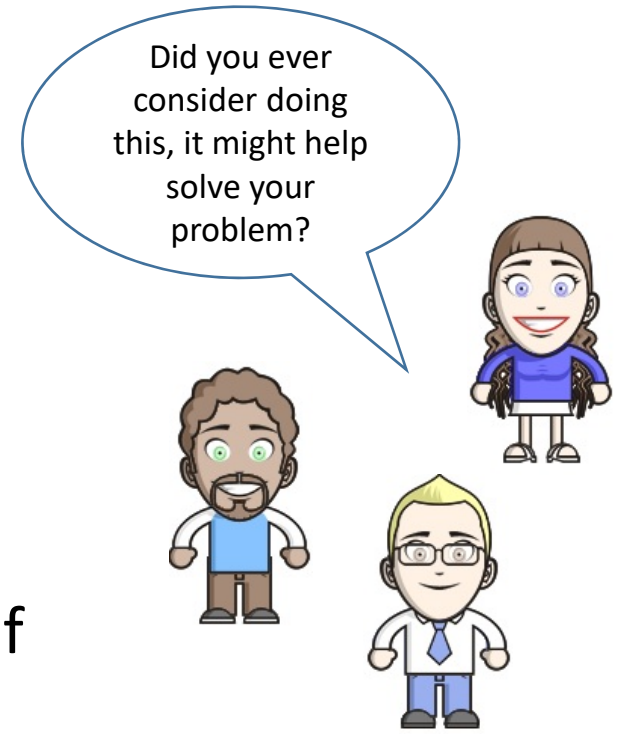
Minimal Viable Product

“How are you going to engage adopters throughout the **development** process?”

- What product best meets the needs of your target audience?
  - What problems do they face?
  - How do they currently solve these problems?
  - What types of alternative solutions are acceptable?
- What will motivate potential users to adopt your product?
  - What information/data needs to be provided?
  - What resources need to be developed?

Customer Discovery

- This involves interacting with many different potential adopters.
- You may have hypotheses about a product and how it will address user needs, but without testing, you could get rather far along in development before you realize that one or more of your hypotheses are wrong.
- Allows potential customers to add suggestions about what might be possible – can be productive



New Potential Adopters

Testing: Alpha and Beta

- Involves having potential users try early versions of your product.
- In addition to providing feedback for product development, alpha and beta testers can also help you collect data regarding the efficacy of your innovation.
- Alpha and beta testers at other institutions may have more varied experience and be able to provide information that is more broadly applicable at locations beyond your institution.

Alpha and Beta Testers

Alpha testing during the initial stages of development is the right time to get feedback on a minimally featured prototype

Minimal Viable Product: What would an early prototype of your product need to consist of in order for someone to try it out and give you useful feedback?

An MVP is intended to help you *learn*, not sell or convince.

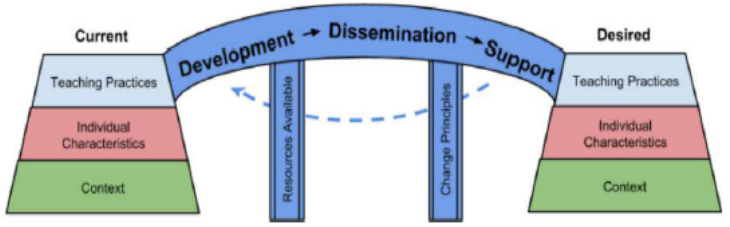
Designing for Impact Framework

What is an instructional system in the context of propagation?

An instructional system consists of three important aspects:

a. Teaching practices of individual instructors
b. Instructor characteristics (beliefs, knowledge, skills of individual instructors)
c. Context (the environments and structures in which instructors work).

Core Principles of Designing for Impact Process



1. **Understand the gap between current and desired instructional systems.**
2. **Bridge the gap through three concurrent strategies:**
   a. *Interactive development*: starting with a basic idea and then refining it through interactions with potential adopters
   b. *Interactive dissemination*: getting the word out to potential adopters and motivating them to try the innovation
   c. *Interactive support*: supporting interested users to successfully implement and customize the innovation
3. **Feedback throughout development, dissemination, and support will improve the process.**
4. **Activities should be supported by and consistent with:**
   a. Important principles of change (change is a process, interpersonal networks are important levers, etc.)
   b. Resources available (time, money, power, etc.)

Advisory Boards

- An advisory board brings expertise and external opinions to the development process.
- Members can offer insights your team might not have thought of, or help steer things in the right direction if you hit a stumbling block.
- Help you stay focused on the big-picture aspects of your project.

Advisory Board

There are several factors to consider in interactive development activities:

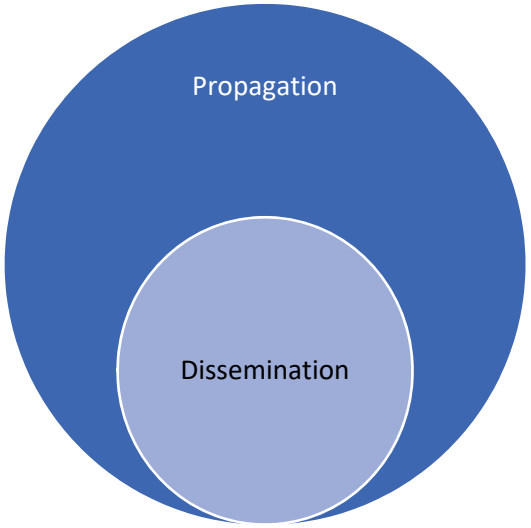
- Project stage (getting started, refinement, expansion)
- Size of project budget
- Scale of the project
- Type/nature of project
- Nature of barriers
- Nature of supports

Disseminate Interactively

- Objectives
  - Select interactive dissemination activities that are best suited for your project

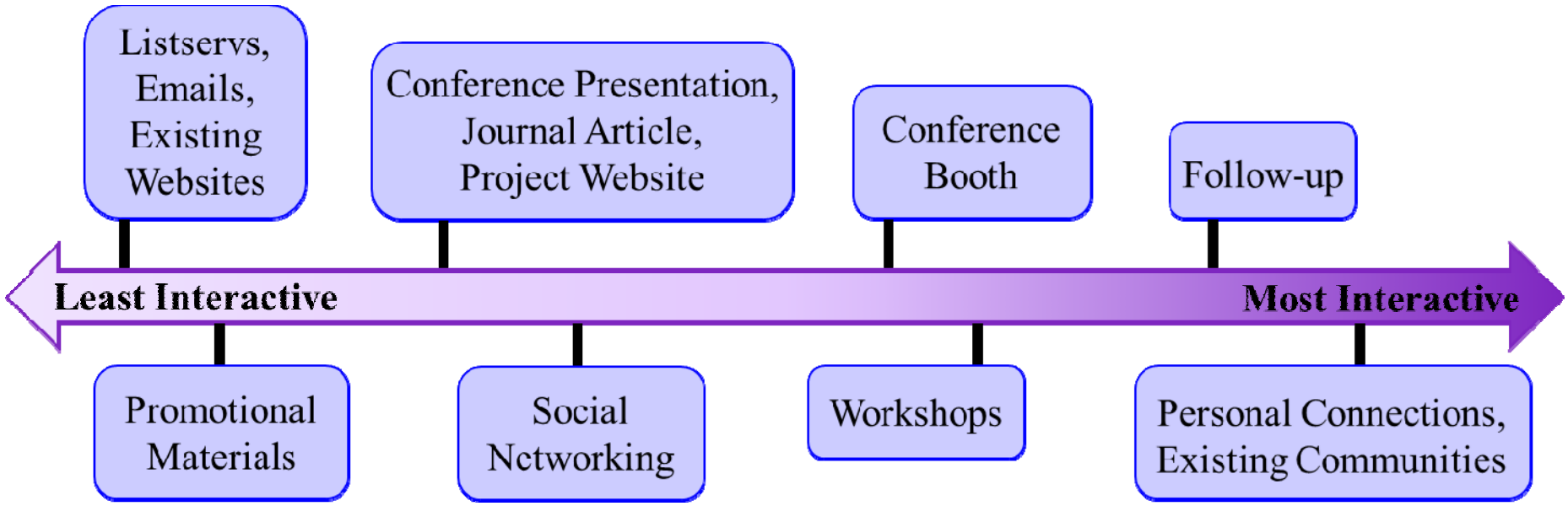
Propagation versus Dissemination

- **Propagation** occurs when a new teaching strategy is actually used successfully by non-developing faculty.
- **Dissemination** focuses on getting the word out to potential adopters and motivating them to try an innovation.



Broader adoption is the goal, and propagation is the overall process, and dissemination is one step in reaching the goal.

Dissemination Approaches



Stages of Project

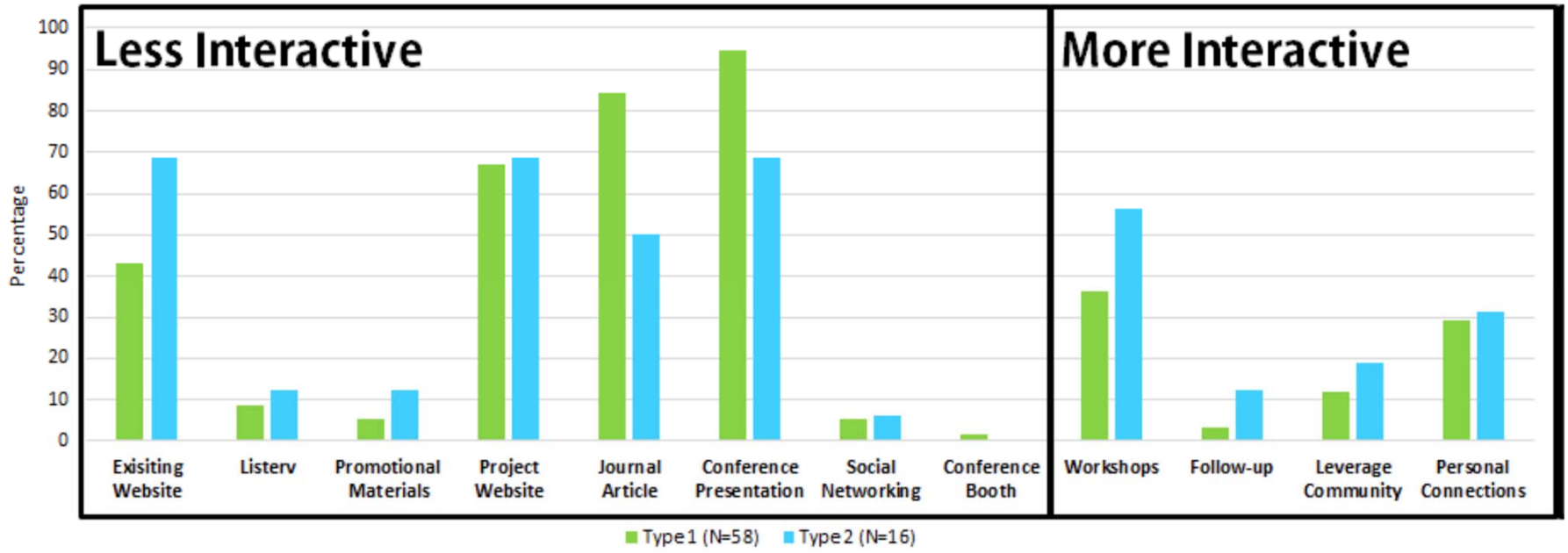
Project Stage	Primary Goal of This Stage	Comments
Getting Started	Develop initial product idea that is viable and adoptable by others	Use development activities to identify possible barriers to adoption and begin thinking about what dissemination strategies would be appropriate for the product type
Refinement	Articulate critical components for adoption and implementation	Begin implementing and refining dissemination strategies; some interactive strategies should be used in order to get feedback (about both the product and dissemination) Hone communication messages
Expansion	Refine and ramp up dissemination and support mechanisms for sustained adoption	Continue and ramp up use of dissemination strategies that have been successful

Propagations Options Checklist from DSAAI

Development								
						S	R	E
Collect student learning and attitudes data in courses taught by:	1. the developer(s)							
	2. non-developer instructors in similar educational environments (e.g. institution type, class size, discipline)							
	3. non-developer instructors in a variety of types of educational environments							
	4. non-developer instructors with characteristics similar to the developer (e.g. demographics, beliefs, experience)							
	5. non-developer instructors with characteristics different from the developer							
Collect instructor use data in courses taught by:	6. the developer(s)							
	7. non-developer instructors in similar educational environments (e.g. institution type, class size, discipline)							
	8. non-developer instructors in a variety of types of educational environments							
	9. non-developer instructors with characteristics similar to the developer. (e.g. demographics, beliefs, experience)							
	10. non-developer instructors with characteristics different from the developer							
Dissemination								
		S	R	E		S	R	E
Dissemination through:	11. existing website e.g. NSDL, MERLOT				19. social networking			
	12. listserv, email lists, etc.				20. conference booth			
	13. promotional materials				21. textbooks			
	14. project website				22. introductory workshop (less than or equal to 3 hours)			
	15. journal publication				23. extended, interactive workshop (more than 4 hours)			
	16. white paper (technical reports)				24. an advisory board connections			
	17. conference presentation (talks or posters)				25. mentoring of graduate students/post-docs			
	18. seminars/colloquiums				26. personal connections with other instructors			
Support								
						S	R	E
Support Adoption by developing:	27. instructional strategies and/or materials that can be easily modified by users (e.g., as a Word doc).							
	28. instructor guides, implementation guides, or FAQs							
	29. guidelines/advice for implementation in different environments							
	30. materials that can be adopted without taking a lot of instructor time.							
	31. materials in modular fashion that can be adopted piecemeal.							
	32. materials that are similar to what instructor already do							
Support Adoption by:	33. Engaging other instructors in development or review of instructional strategies and/or materials							
	34. Creating mechanisms to follow up with potential adopters (workshop attendees, people who download material)							
	35. Leveraging existing instructor development communities (e.g., POGIL, PLTL, SERC, professional societies)							
	36. Individual Consultations							
Other:	37. Other:							

Choosing the Right Strategies

- NSF's 2009 CCLI proposals, we found that projects predominantly used passive strategies to disseminate innovations



Both Passive and Interactive

Passive strategies are often good for raising awareness and are part of a healthy academic career. But to truly reach potential adopters to get them try your product and be successful, interactive strategies should be used as well.

Support Adopters

- Objectives
  - Identify ways to collect information during development that will help inform how to support adopters
  - Develop a preliminary plan for how you will support adopters to implement and customize your product successfully. This plan should include:
    - Ways that the project team will provide support
    - Ways you will leverage external sources of support

Why is support needed?

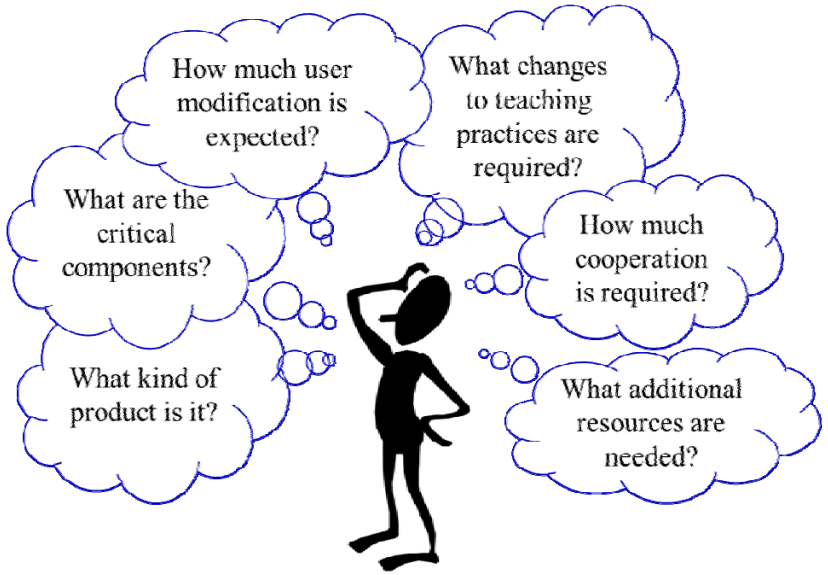
- More than one-third of faculty who try a new instructional strategy end up dropping it.
- Without support, many instructors will likely see your innovation as just too much of a risk to even try.
- Others may try it and then stop because it simply didn't work the way they expected, and they don't want to waste more time.

Where To Start?

- In developing a strong support plan, you will need to answer the following four questions:
  - What are the **characteristics** of your product?
  - What **stage of adoption** are your users in?
  - What **resources** do you have available?
  - What is the **stage of your project** (e.g., getting started, refinement, expansion)?
- Keep in mind that the answers to these questions and, thus the support strategies you use, may change over time.

Characteristics of Your Product

- Remember the previous discussions on what type of product you have and its key features
- You must know enough about what your product requires of adopters and the systems they are embedded within to know how to support them for successful and sustained adoption
- This will help you in determining hope much training, support, and community you will need.



Adoption Stage

Stages of Adoption

- You also need to consider what stage adopters are in
- *Initial Exposure*, the audience will be looking for information about how to implement your product in their teaching environment
- *First Implementation* instructors will expect guidelines and a point of contact to ask questions of as they arise.
- *Ongoing* support will depend on the nature of your product.
- Don’t forget to consider the resources you have available and the phase your project is in – both of which will change.

Forms of Support

Provided by Project Team

Materials Oriented

- Modifiable Materials
- Guides and FAQs

People Oriented

- Individual Consultation
- Workshops

Provided by External Source

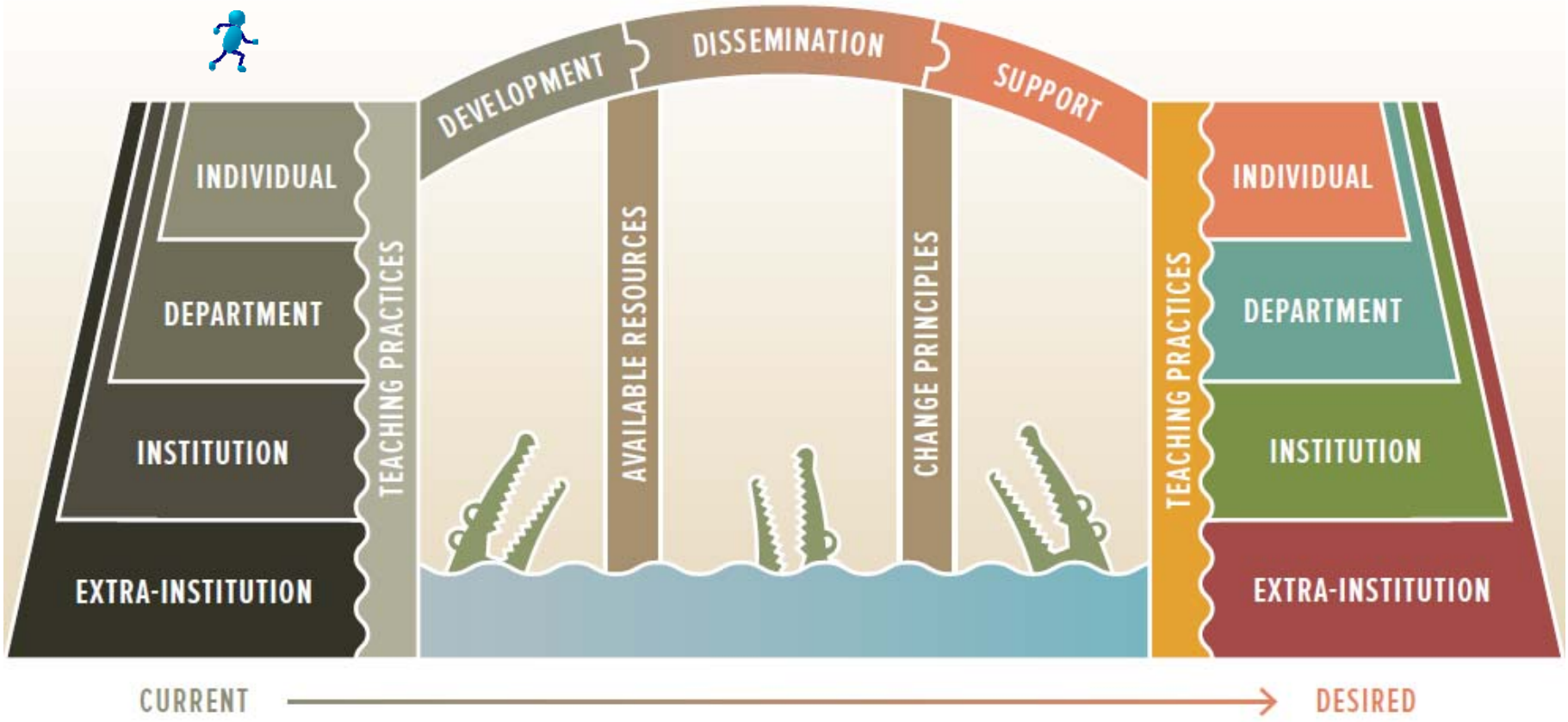
People Oriented

- Professional/ Faculty Learning Communities
- Individual Consultation
- Workshops

Materials Oriented

- Publishers
- Established Websites

Our Framework: Bridging the gap requires planned development, dissemination, and support



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Small Group Activity: Improve 3-page Structured Project Summary

- Form small groups
- Review structured project summary and ratings
- Generate approaches to improve the propagation plan
- 15 minutes

Increase the Impact: Resources

- Resources: http://www.increasetheimpact.com/resources.html
- Executive Summary
- Complete How-to Guide
- Workbook
- Designing for Sustained Adoption Assessment Instrument (DSAAI)
- DSAAI Rating Form

Increase the Impact: References

Book

- Henderson, C., Cole, R., Froyd, J., Friedrichsen, D., Khatri, R., & Stanford, C. (2015). *Designing educational innovations for sustained adoption: A how-to guide for education developers who want to increase the impact of their work*. Kalamazoo, MI: Increase the Impact. Download full text or purchase the guide in paperback from Amazon ($4.99 for black and white, $24.99 for color, or $1.99 for the Kindle edition).

Papers

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