

**An Applied Research Agenda
for
Instructional Technology and Distance Education**

Michael Simonson
2009

An agenda is a list of things to be done. A research agenda is a concentrated and long-term plan for investigations to be conducted about a phenomenon or theory that cannot be easily understood by one study or short-lived investigations.

The following analogy helps explain a research agenda. A mosaic is a clearly visible pattern, usually on a floor, wall, or ceiling that is constructed from small tiles. Sometimes tiles have a pattern of their own. The individual tile can be interesting—even beautiful—but alone it shows little. When the artist combines many tiles into a pattern, a mosaic appears. The mosaic may be made up of hundreds—even thousands—of individual tiles that, when combined show a pattern, tells a story, provides understanding, or is considered a work of art. Blank tiles near the extremities of the mosaic may not be as beautiful as the hand-painted ones in the center, but they have utility and importance, if for no other reason than they set the limits of the mosaic and frame the pattern found in another location (and which is the place that draws the greatest level of interest and attention).

In educational research and in most research, for that matter, individual research studies are comparable to the tiles in a mosaic. They are often interesting, even revealing but, taken alone, they have little impact, even if they are carefully crafted. When research studies build on the literature of the field, especially carefully-constructed theories, they contribute to a greater understanding, give a fuller picture of relationships, and rise to a more important level of science. Even studies that produce no significant difference or that lead to dead-ends can be important, because they provide limits to the scope of the theory and provide a frame for the investigation of other ideas. *Mosaic is to theory as study is to tile.*

ITDE Research Agenda: An Example

Based on decades of research in the fields of instructional technology and distance education, one of the critical ideas relevant to many in these disciplines is the theory of Diffusion of Innovations. It is multi-dimensional, well constructed, and widely used by scientists investigating new ideas and why organizations or individuals accept or reject them. Diffusion of Innovations is an important theory for those studying instructional technology and distance education.

One research agenda dealing with diffusion of innovations that is related to instructional technology and distance education is described as follows:

Name of the Research Agenda: Diffusion and Adoption of Instructional Technology and Distance Education in Education and Training

Purpose of the Agenda: To produce a scientifically-validated process to produce change in educational and training organizations related to the adoption of instructional technologies and distance education.

Agenda Items:

1. Describe the phenomenon – describe various aspects of instructional technologies, and distance education procedures for education and training
2. Study the interaction of the various elements of the diffusion of instructional technology and distance education in organizations and by individuals
3. Develop and examine predictions about adoption and diffusion
4. Prepare a scientifically-based model for change, based on the diffusion of modern technologies in education and training
5. Regularly collect and publish the outcomes of the agenda, including dissertations, presentations, research papers, meta-analyses, reviews of the literature, monographs, and books.

The vast majority of efforts will be related to agenda items 1 and 2. Other agenda items will be acted on if and when a sufficient quantity of quality research about the phenomenon is available. The agenda will be revised yearly, based on the results of agenda action during the previous year.

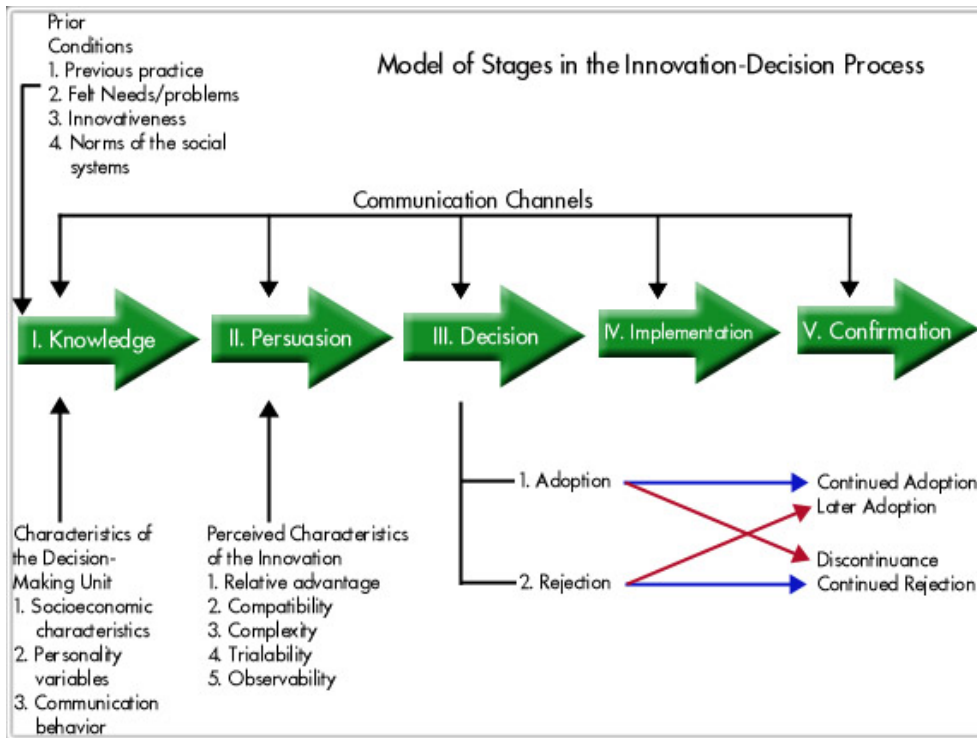
Primary Reference:

Rogers, E. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Overview

Rogers' theory is applicable to instructional technology and distance education in a number of ways. The table shown next provides a visual overview of Diffusion of Innovation theory. Of interest to many researchers are topics such as:

- The conditions necessary before innovations are adopted
- The channels used to communicate innovation ideas and their impact on adoption
- The characteristics of decision-making units
- Reasons why some innovations are adopted and some are not
- Characteristics of innovations that relate to adoption



Innovation Adopters

Also of interest to many researchers in instructional technology and distance education are the people and organizations that adopt innovations. The bell-shaped curve is discussed by Rogers. It presents a categorization system for individuals and organizations. Rogers explains the characteristics of those in each category and presents research that proposes why this group is or is not influential in the adoption process. Change agents and opinion leaders are also discussed. These individuals are important to the adoption process. Standardized measures are available to help place individuals and organizations at the appropriate location on the bell-shaped curve.

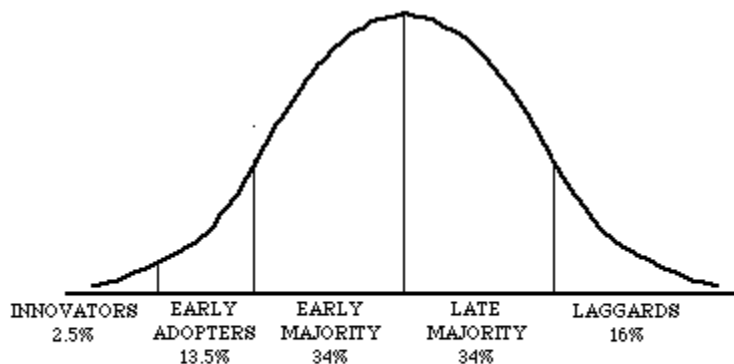


Figure 1. Bell shaped curve showing categories of individual innovativeness and percentages within each category

Rate of Adoption

Rogers also writes at length about the rate of adoption of innovations over time. The s-shaped curve visualizes this process. At first, new ideas require something or someone to provide momentum to produce adoption. At some point, innovations reach the point of critical mass and adoption moves ahead without the need for a great deal of external influence. Some ideas never reach critical mass and are rejected. The graph below visualizes the concept of rate of adoption.

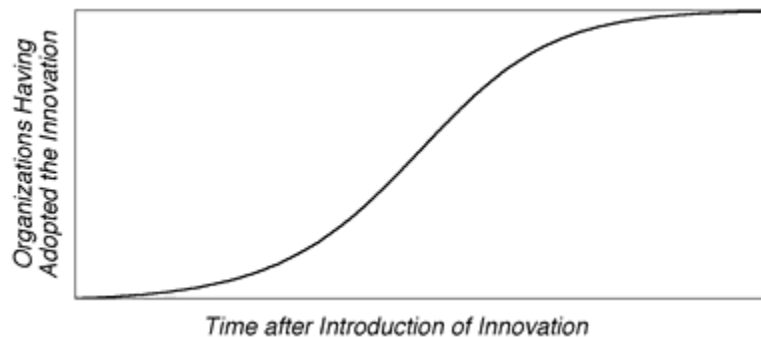


Figure 2. S-shaped curve showing rate of adoption.

Finally, Diffusion of Innovation theory provides direction for many additional concepts that are important to researchers in instructional technology and distance education. A careful study of Rogers' classic book reveals many interesting sub-plots and obscure tangents that provide excellent ideas for why and how innovations succeed or fail. These sub-plots can be explored to provide the "research tiles" that help give the "theory mosaic" its beauty, its importance, and its impact.

Examples of Applied Dissertation Titles

- Failure to Adopt: Staff development in twenty schools
- Thwarted innovation: A case study of distance training in a large corporation
- Diffusion theory and statewide adoption of distance education
- Superintendents as opinion leaders for technology integration
- Media specialists as technology change agents in schools
- Relative advantages of videoconferencing for military training
- Critical mass and course management system adoption
- Laggards and the adoption of instructional technology
- Peer teachers as opinion leaders
- Early majority, late majority, and staff development

Characteristics of Applied Research

Studies should:

- attempt to investigate interesting and important questions—not trivial, localized, and situation specific “problems.”
- produce generalizable outcomes that are important to others
- contribute to the body of knowledge
- be based on theory supported by research with results that can be related back to the theory to help build the theory
- use rigorous and scientifically appropriate methods that are unquestionably reliable and valid
- provide a complete and comprehensive examination of the question, including the demonstration of a clear understanding of pertinent literature that is “published.” Effective research builds on previous research and has the potential to guide further research. There is a premium on primary publications and on publications that are rigorous and scientifically valid
- use the writing style of the scientist and researcher. Writing should represent the researcher as one who is objectively reporting on researchable questions, the literature of the field related to the question, an acceptable and rigorous approach/method to examine the question, the clear and easily-comprehended results about the study of the question, and the contributions and conclusions of the study to the field, especially how those conclusions relate back to the literature. The researcher should be an objective and invisible scientist, reporting on a scientific investigation.

Basic References in Instructional Technology and Distance Education

Journals:

The American Journal of Distance Education – The Pennsylvania State University

Distance Learning journal – Information Age Publishing

Educational Technology, Educational Technology Publications

Educational Technology Research and Development – Springer Publishing

Quarterly Review of Distance Education – Information Age Publishing

Tech Trends, Springer Publishing

Basic Reference Books:

Distance Education: Definition and Glossary of Terms. Information Age Publishing.

Educational Technology: A Definition and Commentary. Lawrence Earlbaum Associates.

Educational Technology: A Review of the Literature, 2nd Ed. Association for Educational Communications and Technology

(http://www.nova.edu/~simsmich/instruc_tech_res.htm)

Handbook of Distance Education, 2nd Ed. Lawrence Earlbaum Associates.

Handbook of Research on Educational Communications and Technology, Volume 1 2. &3. Macmillan. (<http://www.aect.org/Intranet/Publications/index.asp#hb>)

AECT Proceedings for ITDE Students

These proceedings can be downloaded for free in order for you to inspect and review them. If however you decide to use one of the Proceedings, then there is a charge of \$20 that must be paid (the regular rate is \$80). Please send your check to:

Proceedings/Michael Simonson
ITDE/NSU
1750 NE 167th Street
North Miami Beach, FL 33162
URL <http://www.tresystems.com/proceedings/>

2008 Proceedings

2008 – Volumes 1 & 2007 Proceedings

username: aect31

password: sz!259

2007 Proceedings

2007 - Volume #1 - Anaheim

username: aect30

password: ea*012

2007 - Volume #2 - Anaheim

username: aect30

password: pb@782

2006 Proceedings

2006 Proceedings Volume 1 - Research Papers. (Usrn: aect29 Pswd: nya@95)

2006 Proceedings Volume 2 - Research Papers. (Usrn: aect29 Pswd: aw&115)

2005 Proceedings

2005 Orlando: Research Papers - Volume #1

username: aect28

password: aqz839@

2005 Orlando: Instruction Papers - Volume #2

username: aect28

password: zgp721%

2004 Proceedings

Volume 1

Username: aect27

Password: kjq24d%

Volume 2

aect27

tpd234\$

2003 Proceedings

aect26

Fg91sa\$

aect26

kq17qh&

2002 Proceedings

aect25

kx8qw\$1

aect25

za2nb#s

2001 Proceedings

aect24

fh89ka

aect24

h5te*ds

