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Reading Journal, Sessions 0-3

MEDT 8461: Diffusion of Innovation

[Link to Instructions](#)

Session 0

Gura, M. (2018). *The edtech advocate's guide to leading change in schools*. Portland, Oregon: ISTE. [Introduction and Chapter 1: Digital Transformation in Education, pp. 3-14]

- [Note 2 Key Takeaways. \(Review \[my definition of Takeaway here.\]\(#\)\)](#)
- 1. Schools are overdue for a technology transformation -- we know it needs to be done for our students (because of the increasingly digital we live in), and we've known for a while, but a variety of factors are standing in the way, such as an older population of teachers who did not grow up with technology.
- 2. Some areas that are ripe for change include:
 - a. Content -- moving from traditional books and paper to open educational resources and digital multimedia sources
 - b. Instructional activities -- moving more to PBL, hybrid learning, more collaboration
 - c. Physical limits -- moving from face to face, limited time frame, to more distance education and collaboration and students able to access info and submit assignments at any time.

Ley, K. (2013). *Change*. In R.C. Richey (Ed.), *Encyclopedia of terminology for educational communications and technology* (pp. 27-28). New York: Springer.

- [After reading Ley's definition of change \(pp. 27-28\), define it briefly in your own words.](#) Change is not a static event but instead a dynamic process in which a particular set of circumstances to a different set of circumstances. Change can occur on the individual level or in institutions or within the members of an organization.

Molenda, M. (2013). *Innovation*. In R.C. Richey (Ed.), *Encyclopedia of terminology for educational communications and technology* (pp. 152-153). New York: Springer.

- After reading Molenda's definition of innovation (pp. 152-153), define it briefly in your own words.

Innovation involves technology (hardware or software) that is considered new (although may not be actually new) and valuable for populations.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press. [Chapter 1: Elements of Diffusion, pp. 1-10]

- In Rogers' change model, Diffusion of Innovations, what is *diffusion*?
 - What is *communication*?
 - What is *uncertainty*?
 - In one sentence, summarize the *Water Boiling in a Peruvian Village* case.
 - In one sentence, summarize the *Controlling Scurvy in the British Navy* case.
 - In one sentence, summarize the *Nondiffusion of the Dvorak Keyboard* case.
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- A diffusion is characterized by four components: (1) an innovation that spreads via (2) communication channels over (3) time within a particular (4) social system.
 - Communication is the transfer of information. It depends on a message being both sent (encoding) and received (decoded), and can be one-way or two-way.
 - Uncertainty relates to a variety of possible events and the probability that specific event will occur over the other possibilities.
 - A public health campaign encouraged Peruvian women to boil water to combat water-borne diseases but failed because the change agent neglected to account for cultural norms that associated hot water with sickness.
 - Even successful ideas can require an excess of time to diffuse, such as when Lancaster performed a variation of a case-control study looking at the efficacy of lemon juice for treating scurvy, but despite his successful data, it took another scientist 150 years to perform the experiment again, and another 48 years before officials acted on the findings.
 - Despite being more efficient, the Dvorak keyboard has not had widespread adoption because too many leaders are devoted to upholding the status quo.

Session 1

Gura, M. (2018). *The edtech advocate's guide to leading change in schools*. Portland, Oregon: ISTE. [Chapter 2: The New Classroom, pp. 15-33]

- **Note 2 Key Takeaways.** ([Review my definition of Takeaway here.](#))
 1. The digital learning environment has several key characteristics, including:
 - a. Focus on technology that is integrated into the learning experience instead of lessons on using technology
 - b. Emphasis on 21st century skills, such as the 4 C's (critical thinking, collaboration, communication, and creativity)
 - c. Much more digital content
 - d. More interactions online instead of face to face (blended, hybrid, flipped)
 - e. Potential for adaptive learning
 2. Learning management systems (such as Google and Infinite Campus) are a way to coordinate a variety of resources and prevent the confusion/frustration of having a different website/app for every activity.

Reigeluth, C.M., & Duffy, F.M. (2014). Paradigm change in education: Introduction to the special issue. *Educational Technology*, 54(3), 3-6.

- **Note 1 Key Takeaway.**

This article set up the need for a paradigm change due to the change in society from industrial to informational, in that there is now a need for students to be able to think in more complex manners, which necessitates a move towards a more learner-centered model that is attainment-based instead of time based and norm referenced.

Reigeluth, C.M. (2014). The learner-centered paradigm of education: Roles for technology. *Educational Technology*, 54(3), 18-21.

- **Note 1 Key Takeaway.**

Moving to an attainment-based system would require technology to be integrated in several key ways: a running record of student progress and achievement as measured against standards and mini-standards; a way to search, develop, and set goals; a method of instruction that is digital, potentially project-based, with quick feedback; and a formative and summative assessment system.

(Sidenote -- this theoretical PIES system needs to become a reality ASAP!)

An, Y.A. (2011). Learner-centered technology integration. In V.C.X. Wang (Ed.), *Encyclopedia of E-Leadership, Counseling and Training*, (pp. 797-807). Hershey, PA: IGI Global.

- [What is learner-centered technology integration?](#)
- [Why is learner-centered technology integration said to be important?](#)
- [Provide a brief example of learner-centered technology integration in a context of interest to you.](#)

Learner-centered instruction tends to share at least some of these characteristics: a focus on personalized activities, support for social and emotional skill growth, fostering self-regulation, and emphasis on authentic learning with 4 C's (collaboration, creativity, critical thinking, and communication) and using assessments to further learning via feedback. Learner-centered technology integration works to imbed technology in the foundation of LCI so that activities are designed in a way that encourages modification or redefinition, not just substitution or augmentation.

Next year by hook or by crook I am going to get my students on Google so they can do more collaborative work. Since my students struggle with social skills, I want to give them opportunities to practice giving and receiving feedback when editing work and avoid any Kyle Kashuv Google Docs scenarios.

Session 2

Gura, M. (2018). *The edtech advocate's guide to leading change in schools*. Portland, Oregon: ISTE. [Chapter 3: Digital Transformation Tools and Frameworks, pp. 35-42]

- [Note 2 Key Takeaways](#)

The SAMR Model has four different levels divided into two categories. In the Enhancement category, teachers may use technology as Substitution (trading non-tech for tech) or Augmentation (trading non-tech for tech with some improvements). In the Transformation category, teachers may use technology for Modification (task gets a redesign because of the introduction of tech) or Redefinition (brand new tasks not available without tech).

The TPACK framework looks at all the different interactions between three areas of knowledge: content, pedagogy, and technology. This framework speaks to me because I feel that I frequently will have an overlap of two areas:

Technological Pedagogical Knowledge -- this is a great tool that I want to use this way but I cannot figure out a way to link it to my content.

Technological Content Knowledge -- this is a fabulous science resource but how can I get the kids working on the activity in the classroom.

Pedagogical Content Knowledge -- yes I know the content, yes I know how to teach it, but there has to be a way to integrate more technology into it.

Ley, K. (2013). Change models. In R.C. Richey (Ed.), *Encyclopedia of terminology for educational communications and technology* (pp. 29-30). New York: Springer.

- After reading Ley's definition of change models (pp. 29-30), briefly define it in your own words.
- List four examples of change models Ley points out.

A change model is a predictive representation of the process of change which include variables such as people, communications, and learning.

Concerns-Based Adoption Model

Diffusion of Innovation

Strategies for Planned Change

Conditions of Change

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press. [Chapter 1: Elements of Diffusion, pp. 11-17; and *Summary Notes: Elements of Diffusion*; and *Summary Notes: Attributes of Innovations*]

- What are the four main elements of diffusion?
- What are the five perceived attributes of innovations?

Elements of diffusion:

1. Innovation -- it is perceived as new
2. Communication channels -- how messages/information about the innovation travel
3. Time -- time it takes a user to decide whether to adopt or reject; time it takes for a user to adopt as compared to other users; time it takes for adoption within a system
4. Social System -- interrelated units with common purpose

Attributes of innovations -- based in **perceptions**

1. Relative Advantage -- how much better the innovation is over what is currently available
2. Compatibility -- how much innovation meshes with current values, beliefs, and needs
3. Complexity -- how difficult an innovation is
4. Trialability -- how easy it is to try the innovation out before committing
5. Observability -- how easy it is for others to view results of the innovation

Ellsworth, J.B. (2000). *Surviving Change: A survey of educational change models*. Syracuse, NY: Clearinghouse on Information & Technology. Retrieved from <https://files.eric.ed.gov/fulltext/ED443417.pdf> [Chapter 4: pp. 59-72]

- List and briefly define Ely's Conditions of Change (hint: it's a change model!).

8 conditions:

1. Dissatisfaction with current methods/materials
2. People with the ability to use innovation
3. Easy access to any accessories needed for innovation
4. Time to "learn, adapt, integrate, and reflect"
5. Positive reinforcement
6. Participation is assumed
7. Cheerleaders for innovation
8. Leadership must be involved

ISTE (2019). Essential conditions. Retrieved from <https://www.iste.org/standards/essential-conditions>

- Note 1 Key Takeaway

Very few of the essential conditions require actual tangibles (money, access to technology, and tech support -- there is more emphasis on proper planning, follow-up support, and the people necessary.

Session 3

Gura, M. (2018). *The edtech advocate's guide to leading change in schools*. Portland, Oregon: ISTE. [Chapter 4: The Digital Change Agent, pp. 43-56]

- Note 2 Key Takeaways

Digital change agents must work in multiple ways, including as an evangelist, advocate, great explainer, myth buster, coach, praise singer, vision quester, grand organizer, leader, and change agent.

Teacher leaders can be key change agents and serve in multiple roles, including resource provider, instructional specialist, curriculum specialist, classroom supporter, learning facilitator, moentor, school leader, data coach, catalyst for change, and learner.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press. [Chapter 1: Elements of Diffusion, pp. 17-30; and *Summary Notes: Adopter Categories*; and *Summary Notes: Opinion Leaders*; and *Summary Notes: The Change Agent*]

- In your own words, briefly define the 5 adopter categories: innovators, early adopters, early majority, late majority, laggards.
- In your own words, briefly define opinion leadership.
- In your own words, briefly define change agent.
- Briefly define the stages of the Innovation-Decision process: knowledge, persuasion, decision, implementation, and confirmation.

Adopter categories:

1. Innovators -- really far ahead of the bell curve, purposefully seek out innovations, can be considered the gatekeepers.
2. Early Adopters -- can function as opinion leaders, change agents, and role models.
3. Early Majority -- still ahead of the curve, but still take longer than early adopters and innovators.
4. Late Majority -- right after the curve, wary, may require peer pressure
5. Laggards -- very traditional, last to adopt, scared of change

Opinion Leaders are influencers who are firmly situated in their social circle. They are both insiders in that they follow the norms of the group, but also slight outsiders in that they tend to be of higher social-economic status and have more access to mass media. They also tend to have more interactions with change agents.

Change Agents are also influencers in that they influence decisions about innovations (both for and against). They may use opinion leaders but should also cultivate close relationships with clients.

Innovation-Decision Process

1. Knowledge -- first exposure to innovation and how it works
2. Persuasion -- opinion is formed about the innovation
3. Decision -- choice to adopt or reject innovation
4. Implementation -- first use of innovation if chosen to adopt
5. Confirmation -- user wants feedback from others as to whether or not she made a good choice with adoption.

Savoy, M.R., & Carr-Chellman, A.A. (2014). Change agency in learning, instruction, and performance. In J.M. Spector et al. (Eds.), *Handbook of research on educational communications and technology*, (617-626). New York: Springer.

- [Note 2 Key Takeaways](#)

Change agents have been defined in many different ways and assigned a variety of roles and characteristics, such as Catalyst, Solution Giver, Process Helper, and Resource Linker, and needing to have a moral purpose, understanding of change, ability to build relationships, ability to create and share knowledge, and coherence.

I found it very pertinent to my own situation that the authors acknowledged and discussed suggestions for change agent leaders tasked with presenting change after change after change, with each being touted as the latest and greatest. The recommendation was that the leaders “build bridges between sequential change projects” so that people see it as more of a continuum or natural flow of change instead of project after project after project.

(Sidenote -- I was very intrigued by the criticism of Rogers being too colonialist and too much emphasis on being the “lightbringer” because I think that is a very valid complaint. If I have time (hahahahaha) I want to read more about that.)