

Learning Health Sciences and Learning Health Systems

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Background



The Department of Learning Health Sciences is a first-of-its-kind basic science department. Created in May 2014 as an evolution of the Department of Medical Education, the department includes 3 units:

1. The Division of Learning and Knowledge Systems primarily focuses on learning at the organizational and system levels.
2. The Division of Professional Education primarily addresses learning by individuals and teams in preparation for careers as health educator-leaders.
3. The Clinical Simulation Center focuses on learning by individuals and teams in environments with advanced simulation technology that model the real world of clinical practice.

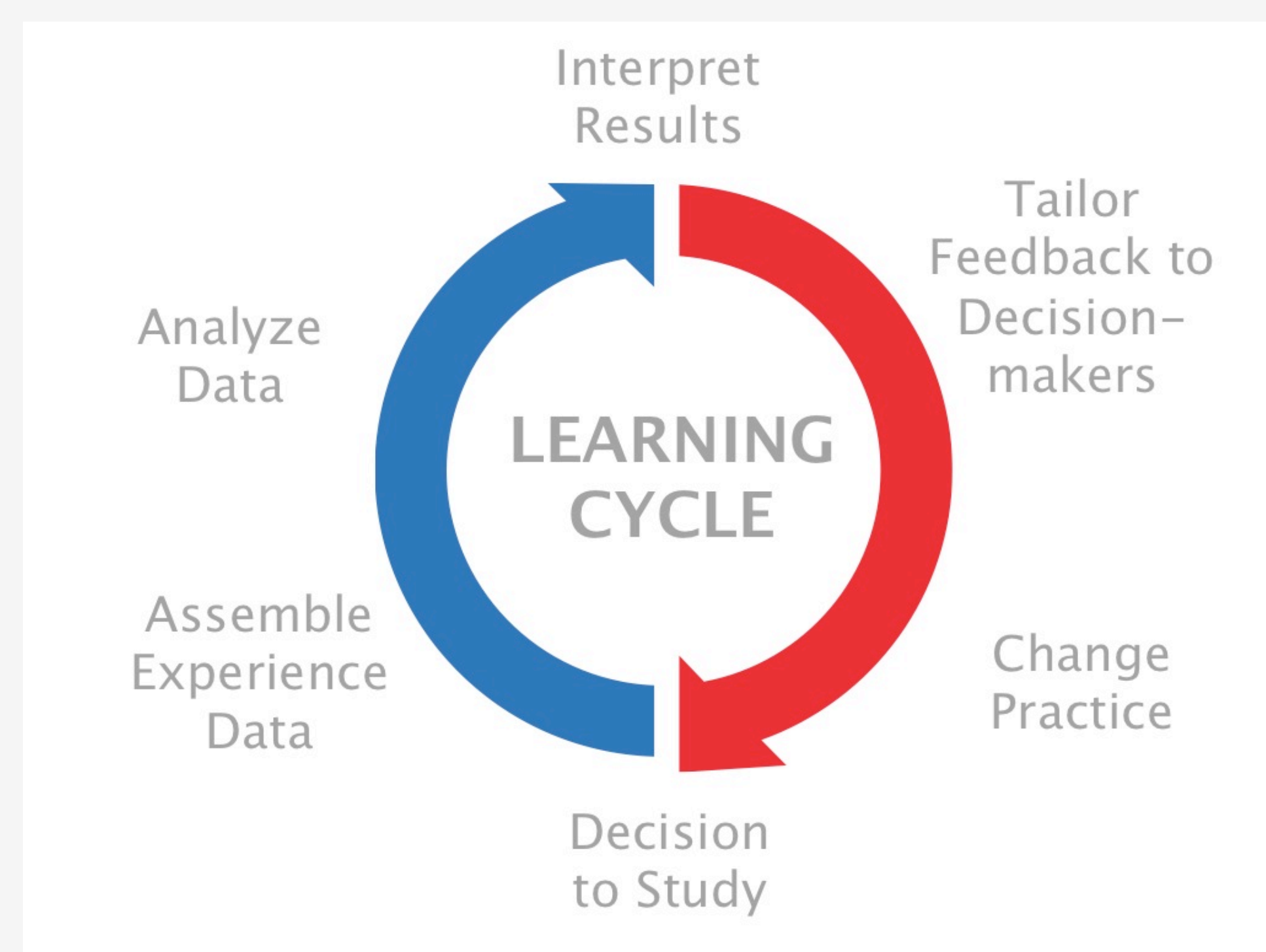
Learning Health System (LHS)

A LHS is an organization or network of organizations that can continuously study and improve itself. Fundamental to the LHS concept, which was pioneered by the Institute of Medicine in 2007, is the capacity and commitment to reshape every health care interaction to rapidly study and adapt the system. A LHS is based on learning cycles that include data and analytics to generate knowledge and feedback of knowledge to stakeholders, with the goal to change behavior and transform practice.

Characteristics of an LHS

1. Every consenting patient's characteristics and experience are available for study
2. Best practice knowledge is immediately available to support decisions
3. Improvement is continuous through ongoing study
4. This happens routinely, economically and almost invisibly
5. All of this is part of the culture

Learning Cycles



Creating a Scalable Platform

"A LHS works through the implementation of **virtual cycles of studying, learning and improvement**. The key to where we eventually want to go, very importantly, needs to be understood as not only including establishing a number of learning cycles going on, but also **creating a platform** that sits underneath all of them, supports all of them, and **makes them efficient**." Charles P. Friedman

Research In Progress

Our dept. includes an interdisciplinary mix of scientists with expertise in behavior and organizational change, systems science, quality and performance improvement methods, and translational research.

Fostering a LHS Community for Diabetes within UMHS

Together with the Brehm Center for Diabetes Research, we are engaging individuals across the university to create a scalable and replicable diabetes-focused Learning Health System within the University of Michigan Health System.

"As we were talking to some of our leading authorities [in University of Michigan] on quality-related research [in Diabetes], they expressed frustration at the challenge of getting their findings adopted even at their own institution because there's no system in place to do that. **A learning health system bridges that gap between research and clinical care**. We'll do things that aren't quite formalized research but will allow our system to learn from patients and enhance our care." - Dorene Markel

Convening Symposia

With the Center for Healthcare Research and Transformation, we convened a Learning Health for Michigan summit in July 2014, which included patients, providers, researchers, policymakers, and insurers focused on 7 learning cycles. The LHS symposium at the Hawaii International Conference on Systems Science in January 2015 attracted 50 people across US, Europe, Asia, and Australia.

Select References

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