FACULTY DEVELOPMENT A PRIMER



CHANGE A CONSTRUCT FOR FACULTY DEVELOPMENT

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CHANGE

"The mind is reluctant to embrace deep change, and will play devious games to maintain the

status quo."

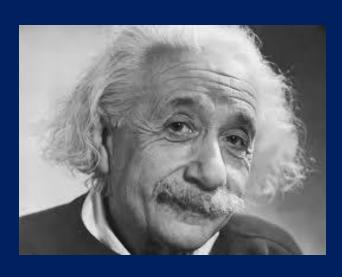
Kristin Linklater 1936 - 2020



CHANGE

"The measure of intelligence is the ability to change."

Albert Einstein 1879 - 1955



CHANGE

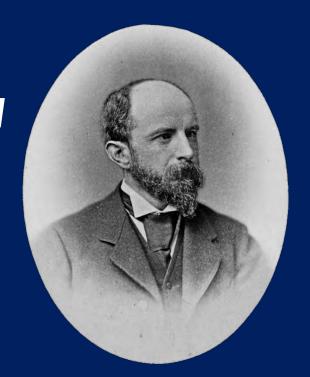
Do people really fear change?

FACULTY DEVELOPMENT

Why is this important?!

"A teacher affects eternity; he can never tell where his influence stops."

Henry Adams 1838 - 1918



ELEMENTS OF CHANGE

- Neuroplasticity
- Mindsets and disruptive innovation
- Lifelong learning

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Neuroplasticity (brain plasticity or neural plasticity), a remarkable capacity of the brain to change and adapt, implies physiological changes in the brain resulting from interactions of the organism with the environment.

> Molecular Mechanisms of Neuroplasticity: An Expanding Universe

> > N. V. Gulyaeva

Neuroplasticity can be observed on multiple scales, with adaptive behavior, learning, and memory being at the top of neuroplasticity hierarchy.

Molecular Mechanisms of Neuroplasticity: An Expanding Universe

N. V. Gulyaeva

The human brain adapts to changing demands by altering its functional and structural properties which results in learning and acquiring new skills.

Review

Beneficial effects of physical exercise on neuroplasticity and cognition

Kirsten Hötting*, Brigitte Röder

Biological Psychology and Neuropsychology, University of Hamburg, Hamburg, Germany

Functional plasticity

The brain's ability to move functions from a damaged area of the brain to other undamaged areas.

Structural plasticity

The brain's ability to actually change its physical structure as a result of learning.

NEUROPLASTICITY

The Ability of the Brain to Reorganize Itself, Both in Structure and How It Functions

HOW THE BRAIN CHANGES



NEUROGENESIS

Continuous generation of new neurons in certain brain regions



NEW SYNAPSES

New skills and experiences create new neural connections



STRENGTHENED SYNAPSES

Repetition and practice strengthens neural connections

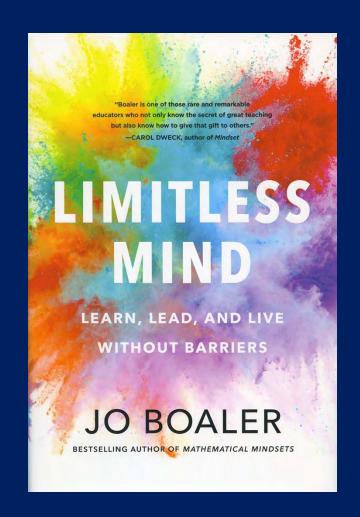


WEAKENED SYNAPSES

Connections in the brain that aren't used become weak

When we learn something, the brain grows in 3 ways:

- I. A new pathway is formed.
- 2. An existing pathway is strengthened.
- 3. A connection is formed between the two previously unconnected pathways.





Physical exercise may trigger processes facilitating neuroplasticity thereby enhancing an individual's capacity to respond to new demands with behavioral adaptations.

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Neuroplasticity and change

"Neuroplasticity reflects the exemplary capability of the brain to adapt and change"

"Such a dynamic process allows the brain to adapt to different experiences and to learn."

Faculty Development for the Twenty-First Century Teaching the Teachers

Eric R. Carlson, DMD, MD, EdMa,*, Eileen McGowan. EdDb

ELEMENTS OF CHANGE

- Neuroplasticity
- Mindsets and disruptive innovation
- Lifelong learning

DURABLE FACULTY DEVELOPMENT

The intersection of innovative mindsets and disruption



Disruptive innovation



Clayton Christensen, DBA 1952 - 2020

The perception and practice of one's basic intelligence, abilities, and talent, particularly in the context of challenges, obstacles, effort, criticism, and the success of others.

A mindset may be so firmly established that it creates a powerful incentive within these people or groups to continue to adopt or accept prior behaviors, choices, or tools."

Wikipedia. Mindset. Available at: https://en.wikipedia.org/wiki/Mindset. Accessed August 5, 2019.

Automatic – we typically do not recognize the pre-programmed nature of our interpretive lens in how we size up every situation.

Hidden – we do not typically distinguish our interpretations, assumptions, and beliefs that make up our mindset from actual facts.



Unexamined – we are not aware of our mindset such that its content is not subject to any assessment of accuracy or effectiveness.

Fragile – our mindset represents mental fabrication rather than reality. As such, a mindset becomes a tightly protective view of the world and can be very difficult to alter.

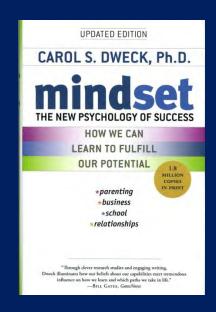


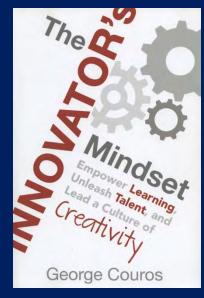
Verrier ED: The elite athlete, the master surgeon. J Am Coll Surg 224: 225-35, 2017.

Fixed mindset – The individual *believes* that his or her basic abilities, intelligence and talents are fixed traits.

Growth mindset - The individual *understands* that his or her talents can be developed through effort, effective coaching and persistence.

Innovator's mindset – The individual *believes* that abilities, talents and intelligence are developed so that they can lead to the creation of new and better ideas.





"I don't divide the world into the weak and the strong, or the successes and the failures, those who make it or those who don't. I divide the world into learners and non-learners."

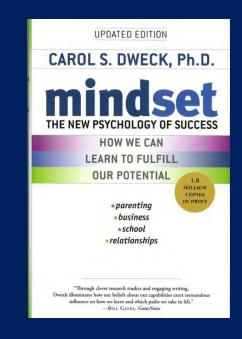
- Benjamin Barber



Growth mindsets = learners Fixed mindsets = non-learners

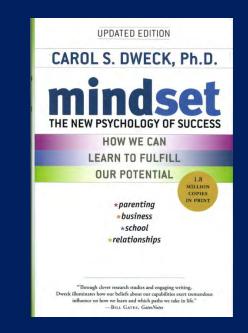
You can change your mindset

"Mindsets are an important part of your personality, but you can **change** them. Just by knowing about the two mindsets, you can start thinking and reacting in new ways."



We simultaneously exhibit fixed and growth mindsets

"All of us have elements of both — we're all a mixture of fixed and growth mindsets."



Contemporary teaching paradigms



The Elite Athlete, the Master Surgeon

Edward D Verrier, MD, FACS

The educator's mindset

We should change our teaching style to teach a current generation of residents the way in which they learn rather than expecting them to learn the way we teach.



5 key situations in which a teacher's mindset has a significant influence on educational outcomes

- 1. Challenges A difficult task one might encounter.
- 2. Obstacles Something that prevents progress in pursuit of a goal or achievement.
- 3. **Effort** The work put forth in the process of completion of a task, challenge, or goal.
- 4. **Criticism** A critical judgment from another.
- 5. **Success of others** Achievement or success achieved by another person, particularly coveted success.

Fixed mindset

Belief that ability and talent are fixed or limited, that one will likely not significantly improve in an area if one does not demonstrate natural talent in that area.

Tendency to avoid challenges in order to avoid failure or appearing incompetent.

Tendency to give up after encountering an obstacle.

Tendency to blame others or underlying circumstances for failure.

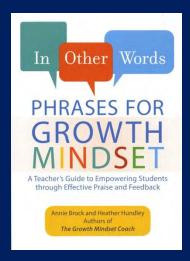
Growth mindset

Belief that success is a direct result of effort put forth, rather than one's natural ability or talent.

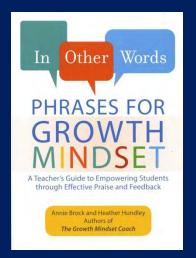
Tendency to approach challenges without fear of failure.

Willingness to try a new strategy when hitting an obstacle.

Tendency to view failures and mistakes as stepping stones to more successful outcomes.

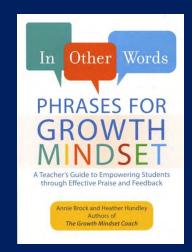


Fixed mindset	Growth mindset
Rarely identifies lack of effort as the cause of failure.	Ability to readily identify the link between effort and achievement.
Tendency to shut down in the face of mistakes.	Tendency to be energized by failure as an opportunity to grow and overcome a problem.
Views mistakes as an embarrassment, not a learning opportunity.	Demonstrates understanding that mistakes are a part of the learning process.
Tendency to view feedback as criticism and/or a personal attack.	Tendency to seek feedback as a necessary ingredient for growth.



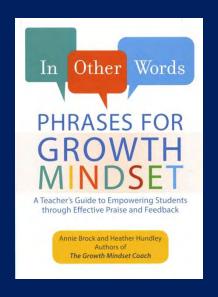
Attributes of a growth mindset teacher

- Flexible Understanding of different needs. Not rooted in harmful education practices
 like utilizing rigid ability groups. Meets residents where they are in their learning.
- High expectations Has high expectations of every resident. Models those expectations
 through body language, verbal communication, positive reinforcement,
 and constructive feedback.
- **Communicative** Offers lots of process-oriented feedback to residents; residents feel comfortable asking and answering questions.
- Strong relationships Demonstrates caring and concern for residents; knows about residents'
 lives, interests, passions, etc.



Attributes of a growth mindset teacher

- Process oriented Understands that learning is less about the outcome
 and more about the process. Praises and critiques the
 process, not the person.
- **Values mistakes –** Normalizes mistakes and helps residents value them as learning opportunities.
- Empathetic Makes an effort to view challenges and struggles from a resident's perspective.
- Positive interdependence Establishes a community of learners working
 simultaneously on personal learning outcomes
 and group goals.
- **Equitable** Understands the difference between equitability and equality, and works to provide learning opportunities and distribute resources in an equitable manner.



Fixed Mindset Intelligence is static

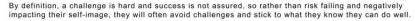
People who hold these beliefs think that "they are the way they are", but that doesn't mean that they have less of a desire for a positive self-image than anyone else. So of course they want to perform well and look smart.





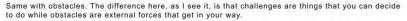
CHALLENGES

... avoid challenges





...give up easily



EFFORT

...see effort as fruitless or worse

What's the point of working hard and making efforts if afterwards you are still on square one? If your worldview tells you that effort is an unpleasant thing that doesn't really pay dividends, then the smart thing to do is to avoid it as much as possible.

CRITICISM

...ignore useful negative feedback

Useful negative feedback is ignored in the best of cases, and taken as an insult the rest of the time. The Fixed Mindset logically leads you to believe that any criticism of your capabilities is criticism of you. This usually discourages the people around and after a while they stop giving any negative feedback, further isolating the person from external influences that could generate some change.

SUCCESS OF OTHERS

...feel threatened by the success of others

The success of others is seen as a benchmark against which the person looks bad. Usually when others succeed, people with a Fixed Mindset will try to convince themselves and the people around them that the success was due to either luck (after all, almost everything is due to luck in the Fixed Mindset world) or objectionable actions. In some cases, they will even try to tarnish the success of others by bringing up things that are completely unrelated ("Yes, but did you know about his...").

As a result, they may plateau early and achieve less than their full potential.

All this confirms a deterministic view of the world.

As a result, they don't reach their full potential and their beliefs feed on themselves: They don't change or improve much with time, if at all, and so to them this confirms that "they are as they are".



Growth Mindset Intelligence can be developed

Leads to a desire to learn and therefore a tendency to...

People who hold the Growth Mindset believe that intelligence can be developed that the brain is like a muscle that can be trained.

This leads to the desire to improve.



And how do you improve? First, you embrace challenges, because you know that you'll come out stronger on the other side.

...persist in the face of setbacks

Similarly, obstacles - external setbacks - do not discourage you. Your self-image is not tied to your success and how you will look to others; failure is an opportunity to learn, and so whatever happens you win.

... see effort as the path to mastery

Effort is seen not as something useless to be avoided but as necessary to grow and master useful skills.

...learn from criticism

Criticism and negative feedback are sources of information. That doesn't mean that all criticism is worth integrating or that nothing is never taken personally, but at least the Growth Mindset individual knowns that he or she can change nd improve, so the negative feedback is not perceived as being directly about nem as a person, but rather about their current abilities.

...find lessons and inspiration in the success of others

he success of others is seen as a source of inspiration and information. o Growth Mindset individuals, success is not seen as a zero-sum game.

As a result, they reach ever-higher levels of achievement

All this gives them a greater sense of free will

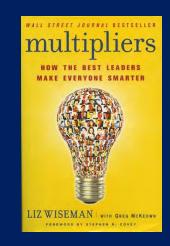
And so, Growth Mindset individuals will improve and this will create a positive feedback loops that encourages them to keep learning and improving. Of course, most people do not have a 100% Fixed mindset or a 100% Growth mindset; most of us have some of both.

The good news is that it is possible to change your worldview from a fixed mindset to a growth midset. And Carol Dweck's research indicates that both children and adults can be taught to change their mindset!

Multipliers vs. diminishers

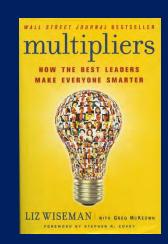
The talent magnet	Attracts talented people and uses them at their highest point of contribution
The liberator	Creates an intense environment that requires people's best thinking and work
The challenger	Defines an opportunity that causes people to stretch
The debate maker	Drives sound decisions through rigorous debate
The investor	Gives other people the ownership for results and invests in their success

The empire builder	Hoards resources and underutilizes talent
The tyrant	Creates a tense environment that suppresses people's thinking and capability
The know-it-all	Gives directives that showcases how much they know
The decision maker	Makes centralized, abrupt decisions that confuse the organization
The micro-manager	Drives results through their personal involvement



Multipliers vs. diminishers

How would you:	Multiplier "People are smart and will figure this out."	Diminisher "They will never figure this out without me."
Manage talent?	Develop	Use
Approach mistakes?	Explore	Blame
Set direction?	Challenge	Tell
Make decisions?	Consult	Decide
Get things done?	Support	Control



Multipliers = growth mindsets Diminishers = fixed mindsets

TYPES OF CHANGE

Evolution – incremental change to slowly alter the currently accepted model.

Transformation – Leaps to major variations that are competitive with current model.

Disruption – Undermining of the currently accepted model through non-competitive, unfettered development.

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Time

Disruption – Innovation at the low end of the market that eventually upends an industry. Disruptors secure their initial foothold at the low end of the market, offering inferior, low-margin products.

DISRUPTION

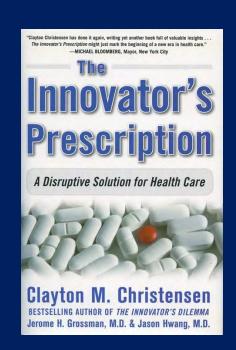
Disruptor	Disruptee	
Personal computers	Mainframe and mini-computers	
Mini mills	Integrated steel mills	
Cellular phones	Fixed line telephony	
Community colleges	Four-year colleges	
Discount retailers	Full-service department stores	
Retail medical clinics	Traditional doctor's offices	

DISRUPTION

Disruptor	Disruptee	
Ultrasound imaging	X-ray imaging	
Portable blood glucose meters	Traditional phlebotomy and hospital labs	
Google	Various directories and textbooks	
Email	Postal services	
Amazon.com	Traditional bookstores	
Best Buy	Electronics departments of full- service and discount department stores	

DISRUPTION OF MEDICAL EDUCATION

- Foreign medical schools
- Osteopathic medical schools
- Mid-level providers
- In-house corporate medical universities



DISRUPTION

Four principles of disruption

- Target a need that can be met more effectively
- 2. Identify your disruptive strengths
- 3. Step back (or sideways) in order to grow
- 4. Let your strategy emerge



Disrupting oneself is critical to avoid stagnation and being overtaken by professional competitors. In the process, one fast-tracks one's personal and professional growth.

The five skills of disruptive innovators

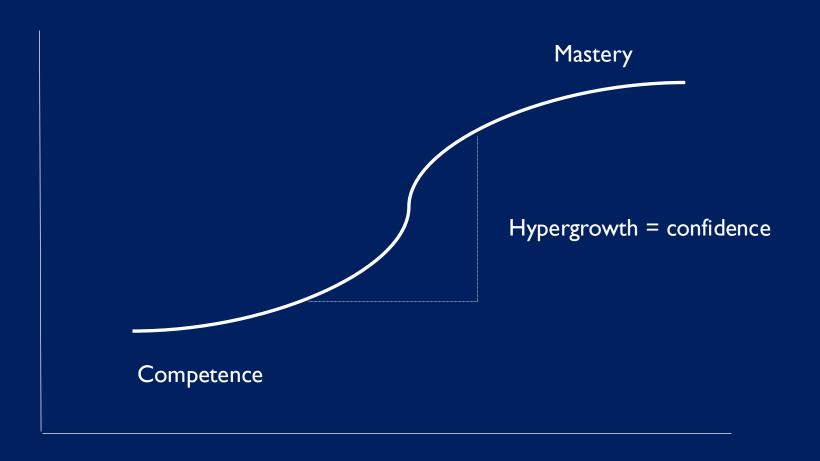
- Associating
- Questioning
- Observing
- Networking
- Experimenting



- Taking the right risks
- Playing to your distinctive strengths
- Embracing constraints
- Battling entitlement
- Stepping back to grow
- Giving failure its due
- Being discovery driven

The S curve
Everett M. Rogers
1962
Diffusion of Innovations





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Taking the right risks

Embedded somewhere in the human genetic makeup is the inclination to take risks.

- Ask yourself what job needs to get done?
- Focus not on what will be gained by moving forward, but what will be lost by standing still.
 - Identify competitive risk vs. market risk
 - Identify a job that no one else can do.

Prior to hypergrowth, the going is slow!

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Playing to your distinctive strengths

Something that you do well that others in your sphere do not.

- What skills have helped you survive?
 - What makes you feel strong?
- What compliments do you shrug off?
 - What are your hard won skills?

Match your strengths with unmet needs.

- Taking the right risks
- Playing to your distinctive strengths
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Playing to your distinctive strengths

- "You must do the thing you think you cannot do."
 - Eleanor Roosevelt



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Embracing constraints

- Constraints offer structure that can liberate us from the chaos and disorder of entropy.
- Constraints offer focus. Focus permits disruption.
 - Constraints = money, time, and knowledge
- Move from victim to neutralizer to transformer.
 - Reframe to "can-if."
- Active emotions not why did this happen to me, but rather how is this helping me?

Constraints keep us grounded and staying grounded gives us traction.

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Battling entitlement

Entitlement is a psychological crutch that stifles innovation at all levels — organizational and individually.

- Resist cultural entitlement.
- If we want to avoid stagnation, we must occasionally change our environment.
- If we resist our tendency to exclusively associate with like-minded people, we will have a more accurate view of the world.

It is vital that we are equipped with the humility to understand that changing the world and keeping innovation alive require that we change ourselves.

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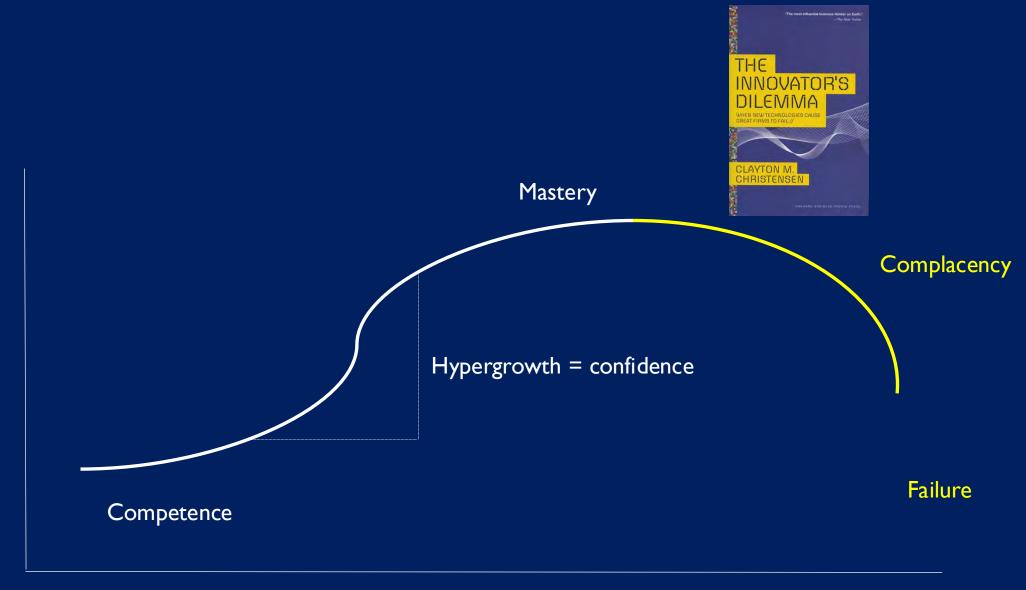
Stepping back to grow

Sometimes the only way up is down.

Disruption by definition involves moving sideways, back, or down, with all the negative connotations conjured therein, in order to move up.

- For many, growth comes to a standstill at the top of the curve.
- Once we achieve a certain level, it seems there's nowhere else to go – so we keep on doing the same thing.
- Those who want to grow have to jump to a new role, industry, or type of organization.

Once you have reached the top of the ladder, it is time to find a new ladder.





Not staying in the same place too long

- Taking the right risks
- Playing to your distinctive strengths
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Giving failure its due

Perception = There's dignity in suffering, nobility in pain, but failure is a salted wound that continually burns.

Reality = Failure is the only opportunity to more intelligently begin again.

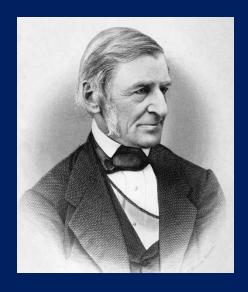
- Fear of failure, resulting from often unrealistic and perfectionist demands is one of the key detractors from learning, leading to lack of creativity and procrastination.
 - Learn to fail or fail to learn.
 - If you want failure to be anything but emotionally catastrophic, you need to plan to fail.

Rather than take failure as a message that you or your ideas are bad or wrong, ask: what have I learned that I didn't know before? How can I apply that knowledge up the ladder of disruption?

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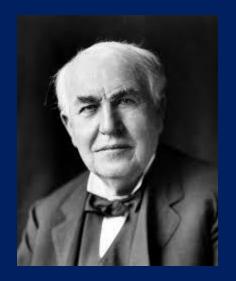
"The greatest glory in living lies not in never falling, but in rising every time we fall."

- Ralph Waldo Emerson



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"I haven't failed I've just found 10,000 ways that will not work."



-Thomas Edison

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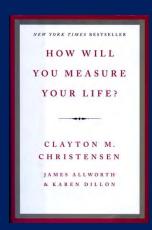
Being discovery driven

As a disruptor, your path should not be marked even though you have a goal or purpose.

- Conventional planning has a well-understood and predictable platform based on prior experiences.
- Discovery driven planning begins with the premise that little is known.
- In discovery driven planning, learning is the essential unit of progress such that a course correction isn't equivalent to failure as would occur in conventional planning.

When you pursue a disruptive course, you'll end up in a place you hadn't anticipated.

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Being discovery driven

Options for strategy come from two very different sources.

- Deliberate strategies based on putting a plan in place based on anticipated opportunities.
- Emergent strategies opportunities that emerge in an unanticipated fashion while you are implementing the deliberate strategy.

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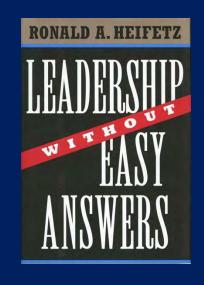
Being discovery driven

"Life is what happens to you while you are busy making other plans."

- John Lennon



Technical skills
vs.
Adaptive challenges



Technical skills

- Those where the solution is immediately available
- Good advice new information or new ways of behaving
 - **Do not** require a change in *mindset*

Adaptive challenges

- Those where the solution is not immediately available
 - New skillsets alone will not solve the problem
 - Those that require a change in mindset
 - Not just information, but transformation

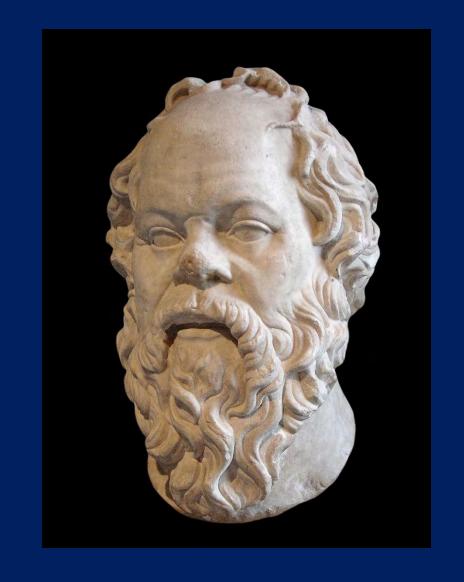
Situation	Problem definition	Solution and implementation	Primary locus of responsibility for the work	Kind of work
Type I	Clear	Clear	Physician	Technical
Type II	Clear	Requires learning	Physician and patient	Technical and adaptive
Туре III	Requires learning	Requires learning	Patient > physician	Adaptive

RONALD A. HEIFETZ

Task/ challenge	Problem definition	Solution and implementation	Primary locus of responsibility for the work	Kind of work
Туре I	Clear	Clear	Faculty mentor	Technical
Type II	Clear	Requires learning	Faculty mentor and mentee	Technical and adaptive
Туре III	Requires learning	Requires learning	Mentee > faculty mentor	Adaptive

"The secret of change is to focus all of your energy not on fighting the old, but on building the new."

Socrates



CHANGE

Do people really fear change?

No, people fear loss associated with change.

Faculty development - A primer

Immunity to Change Workshop

August 20, 2025 at noon August 21, 2025 at 4 p.m.

