



Transdisciplinary Pedagogy for Ethical Education Textbook

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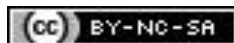


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Phase 0 - Course Overview

What is our learning journey? What will I achieve in this course?

The mission of this course is to help you become a transformative, future-focused, ethical educator.

We invite you to a journey to explore and become a transformative, future-focused educator and learner, within and beyond classrooms. This journey connects the outer life of professional practice (HOW) with your inner life of values, beliefs, and goals (WHY).

Our collective goal is to develop an explicit and living philosophy and approach that will not end with this course, but become part of an evolving practice as scholars, educators, and leaders of transformative learning and action.

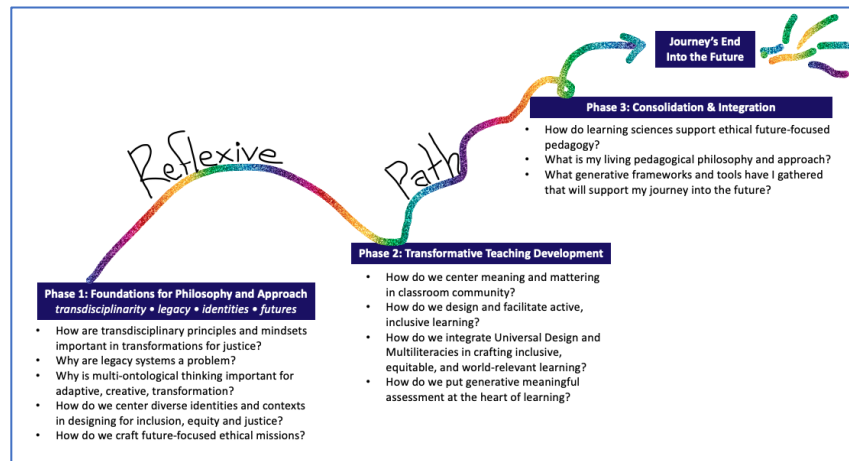
You enter two interrelated learning journeys:

- **An inner journey to develop the WHY of ethical teaching and leadership.** Reflexive practice to examine and understand who you are as in your full self as a scholar, educator, and leader.
- **An outer journey to develop the HOW of ethical teaching and leadership.** Understand concepts and frameworks, build a knowledge base, and gather tools and strategies that you can apply in your professional practice.

These two journeys – How and Why – help you explore and authentically connect with transdisciplinary pedagogical principles from which you can develop your own pedagogical approach.

- You integrate your identity as a teacher-scholar and leader - who you are, your vision and goals for education – with strategies and day-to-day practice. You are better able to articulate a commitment to ethical education for high levels of excellence.
- Integrating WHY and HOW helps you justify your choices of strategies and tools based on critiques of legacy education and principles from learning science. This strengthens your identity, self-efficacy, and knowledge authority as an ethical educator. You are better able to explain your practice to administrators, parents, students etc.
- In developing transdisciplinary mindsets, you will be able to continue learning and extend your practice over time adaptively as systems and contexts evolve and emerge. The processes of this course are the seeds for a lifetime of development.

The Course Is Broadly Divided Into 3 Phases



In Phase 1, we set up foundations for developing your philosophy and approach looking at transdisciplinarity, legacy, identities, and futures. (Sessions 1 – 5)

- How are transdisciplinary principles and mindsets important in transformations for justice?
- Why are legacy systems a problem?
- Why is multi-ontological thinking important for adaptive, creative, transformation?
- How do we center diverse identities and contexts in designing for inclusion, equity and justice?
- How do we craft future-focused ethical missions?
-

Phase 2 explores key dimensions of engagement and learning to gather tools and strategies. These phases are closely related through journaling with the guiding philosophy worksheets and class work keep applying and connecting frameworks from Phase 1 as we explore strategies in Phase 2. (Sessions 6 – 12)

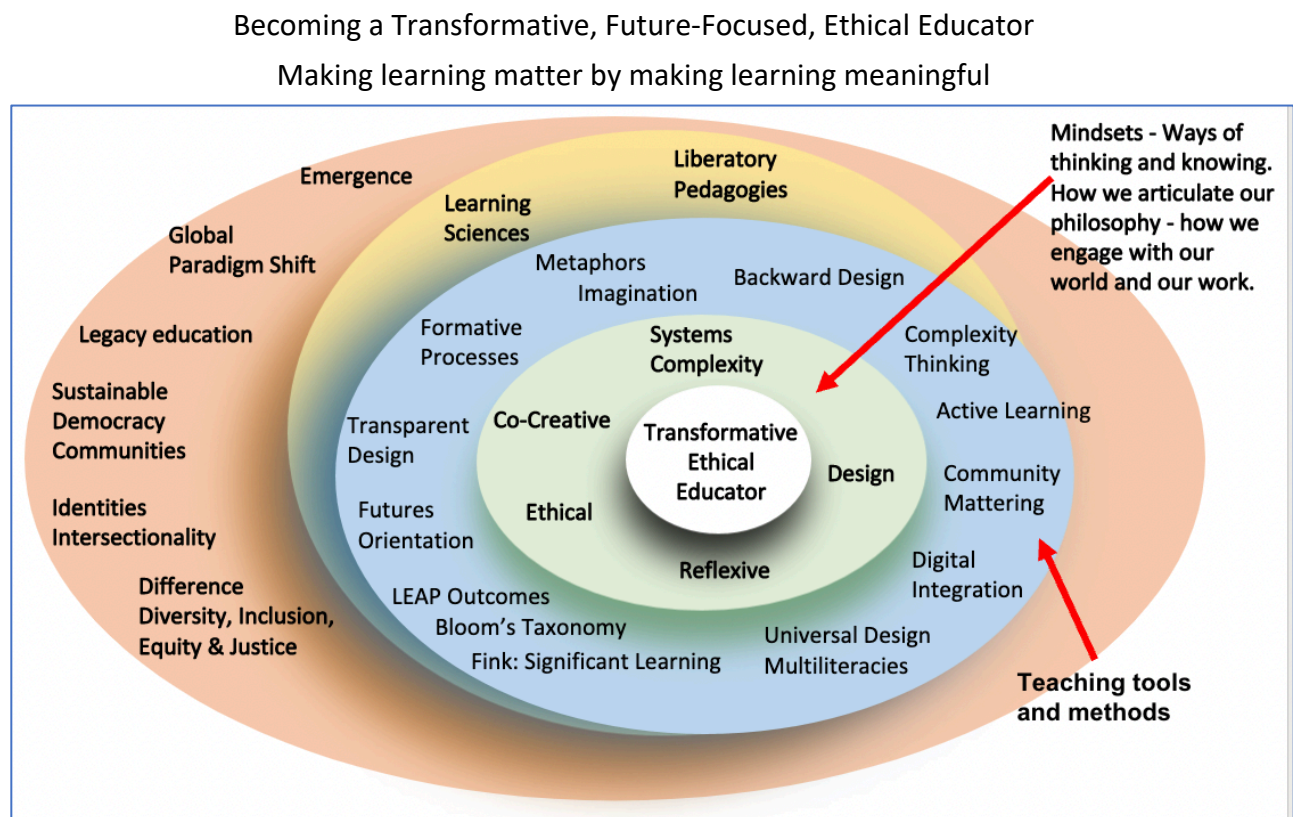
- How do we center meaning and mattering in classroom community?
- How do we design and facilitate active, inclusive learning?
- How do we integrate Universal Design and Multiliteracies in crafting inclusive, equitable, and world-relevant learning?
- How do we put generative meaningful assessment at the heart of learning?
-

In Phase 3, you integrate and consolidate your strategies using principles from learning science and bring together an explicit and coherent pedagogy that encapsulates your philosophy and approach. We will also explore methods for life-long learning as an educator and leader. (Sessions 13 – 16)

- How do learning sciences support ethical future-focused pedagogy?
- What is my living pedagogical philosophy and approach?
- What generative frameworks and tools have I gathered that will support my journey into the future?

Visual map of the landscape for our journey

Here is an overview map that shows you the different levels of exploration that will help you develop a living philosophy that integrates vision, goals, and methods, as well as specific strategies for inclusive, equity-minded teaching and leadership.



- **The two outer dimensions** - large global shifts and contexts, legacy systems, and findings from learning sciences such as psychology, neuroscience, and pedagogy - inform how we make sense of teaching and learning for the current and emerging world. You develop a systems and complexity-oriented understanding of the contexts of education.
- **The blue central dimension** presents tools and methods to develop a toolkit of inclusive, meaningful approaches that will help you to transform education and help people engage with learning and flourish in their futures.
- **The inner green dimension** presents the transdisciplinary mindsets you will embody as a teacher-scholar and leader engaged in future-focused, transformative, and ethical practice.

How to use this textbook to optimize your learning

Classes are NOT lecture based. Each session will run like a workshop to explore, synthesize, and apply ideas, build strategies together. The coursebook chapters present the material you need to prepare for collaborative work in class. The material also guides you in developing your teaching philosophy and approach.

Aim to do the following:

1. **Explore the material assigned** for each class session. The material presents integrated notes that bring together key ideas and frameworks from different disciplines.
2. **Links in the chapter texts are optional unless specifically directed.** We link some of the texts to sources and webpages so that you have the option to dig a little deeper or save things into your portfolio for later reference. You are not required to follow and explore every single link.
3. **Reflection pauses. Use your Journal.** Through the chapters and/or at the end, we provide pause moments for you to reflect on the material. Do pause and reflect. You get more from your reading/viewing when you do this, especially in connecting ideas to who you are, your prior knowledge, and experiences. We encourage you to jot down your thoughts in your Journal so that you capture your thinking in one place.

Remember:

- a. No worries about mechanics like spelling or grammar.
- b. Bullet points and doodles, mind maps, drawings are fine.

Not only will journaling enhance your class engagement and contributions, but the documentation of your thoughts and ideas will help you respond to the teaching philosophy and diversity statement assignment.

4. **Tasks.** We also provide short tasks to read or watch something, or textbook activities. This helps you engage actively so that we can build on what you have done in class. Sometimes, your instructor might ask you to submit some of this work before class. These are not assignments, but a gathering of your work so we organize everyone's responses ahead of time for use in class activities.

*The more that you read
The more things you will know.
The more that you learn,
The more places you'll go
Dr. Seuss. I can read with my eyes shut (1978)*

*I could spend the rest of my life reading, just satisfying my curiosity
– Malcolm X. Autobiography (1965)*

Pause To Reflect

Expectations and goals as an ethical educator. Clarifying the journey.

1. As you enter this learning journey to become an ethical educator and leader, what are your expectations and goals? Make a list of expectations and goals for this course and for yourself as an educator beyond this course.
2. List 2-3 commitments you can make to do your part to foster a respectful and trusting classroom community?
3. List any questions you have having read the syllabus, explored Canvas, and looked at materials and assignments. I encourage you to share your questions in our question forum or in class. Any question you have is likely to be shared by others and will help us all work effectively together.

Phase 1 - Foundations for Philosophy and Approach

Class Sessions 1 - 5

Chapter 1 - Overview of Transdisciplinary Pedagogy

Before you continue reading, think about how you define TRANSDISCIPLINARY. What have you read or heard about it, and in what contexts? Have you seen it in your disciplinary scholarship or in any professional practice?

Here is a definition of transdisciplinarity from [CGU's Transdisciplinary Studies website](#). How does this definition resonate with your ideas of scholarship, teaching, leadership, and learning?

Transdisciplinarity: Working across knowledge and stakeholder boundaries to facilitate a systemic way of solving complex, wicked, real-world problems.

Transdisciplinarity is a collaborative effort that sits on the spectrum of cross-disciplinary approaches. At CGU, transdisciplinarity is defined by:

- Working around a **complex problem** important to society.
- Inclusion of **diverse stakeholders** working together toward and re-framing a resolution of that problem.
- Disciplinary **self-reflection** that is both cultural and professional, with reflective judgment and negotiation driving the collaborative process.
- **Innovative** approaches emerging from the **collaborative** process.

In the rest of this chapter, you will read about:

- Principles of transdisciplinary pedagogy
- Mindsets for transdisciplinary pedagogy
- Framework: Transmission to empowerment model
- Reflexivity: A tool for transformative practice.

NOTE: You will see the following interrelated terms. While used with technical definition in different disciplines, they connect with and inform each other in helping us understand the world around us.

systems • paradigms • metanarrative • stories • worldviews • perspectives.

Transdisciplinary Pedagogy Overview

A Philosophy and Practice of Transformation for Justice

Transdisciplinary (TD) pedagogy is liberatory in being transgressive, transcendent, and transformative.

“The discourse of transgression was forged in critique of the existing system of knowledge and education. TD became aligned with imperatives of cultural critique, sociopolitical movements, and conceptions of post-normal science and wicked problems that break free of reductionist and mechanistic approaches.” – [Klein, 2004](#).

“[T]ransdisciplinary praxis ... has been argued as manifest at the juncture of humility and complexity. The nexus, formed as one opens heart and mind to radical listening, is derived by neither prescribed goals nor deductive reasoning; rather, it is a transformative movement toward a peace-building potential, a mutuality embedded in participatory relationships with young people and community.” [Shannon Moore, 2018](#). p. 485.

“Problem-posing education affirms men and women as beings in the process of becoming.” [Paulo Friere, 2000](#); p.84

Transgressive. Transgression is inherent in TD work in being “forged in critique of the existing system of knowledge and education” (Klein, 2014; p. 68). In TD pedagogy we explicitly challenge legacy and hegemonic education that perpetuates colonizing oppressions, power structures, relationships, structures, and practices that create barriers, marginalize, and erase learners. It also challenges the reduction of learning into a single narrative or one-size-fits-all approach that is misaligned to the complex diversity of identities, perspectives, and contexts of teaching and learning.

Transcendent. TD pedagogy seeks justice. It recognizes the deep human birthright of flourishing and joy in learning, whether that is in classrooms, communities, or corporate spaces. TD also pedagogy recognizes the complex interconnectedness of cognition, emotion, and bodies, as well as multiple perspectives and discourses in knowing and learning. In response, it transcends legacy paradigms of hierarchy, linearity, binary thinking, dominant narratives, and exclusions of the whole self. In rejecting fragmentation, it upholds boundary crossing and plurality in developing perspectives and methods.

Transformative. In dismantling barriers and transcending legacy paradigms, TD pedagogy creates transforms. It shapes new goals and designs teaching and learning to invite and honor a diversity of learners whose identities, embodied histories, and perspectives are integrated in empowering learning processes. In this process, both teacher and learners are also transformed

to recognize and celebrate their capacity to flourish through authentic, reciprocal relationships (Freire's notion of "reconciliation" - Freire, 1970/2000; p. 72) and work that it meaningful and expansive.

TD Pedagogy is motivated by a passion for justice. Transdisciplinary work – research and practice – is a response to urgent complex issues in the world. TD pedagogy is a response to the injustices caused by a legacy system of education that result in blocking, suppressing, and erasing the human birthright to learning as a joyful, self-actualizing process, and education as a pathway to flourishing lives. And precisely because of the power educational processes and institutions have in shaping minds and hearts, TD pedagogy takes on a justice-oriented mission to transform education for social good.

Transdisciplinary Practice Addresses Wicked Problems

TD pedagogy connects systems- and complexity-oriented perspectives with reflexivity to move beyond disciplinary and legacy boundaries or paradigms to understand where, how, and why education causes inequities and injustice. In doing this, and in seeking to transgress, transcend, and transform education, TD pedagogy locates education as a [Wicked Problem](#).



Wicked problems are complex issues that cannot be approached by a single knowledge base or by linear models of thinking and action. They have the following characteristics.

1. Every problem is unique
2. There is no clear problem definition
3. Problems are multi causal, scalar, and interconnected
4. Multiple stakeholders with conflicting agendas
5. Straddle organizational and disciplinary boundaries
6. Every wicked problem is connected to others – there are entanglements with other social issues that it impacts and by which it is impacted.
7. Hence every solution ramifies throughout the system
8. Solutions are not right/wrong but better/worse
9. it can take a long time to evaluate solutions.
10. Problems are never completely solved.

Do you see the above characteristics of Wicked Problems manifested at different levels of our educational structures, systems, and processes? What are some examples that come to mind?

Foundational Ideas: In TD pedagogy, we acknowledge and embrace the following ideas:

The world is structured and shaped by systems and complexity at multiple levels.

We see the vast inter-connected diversity and complexity that shapes us and our world

1. We work with highly diverse, interconnected, and dynamically interacting and changing systems (natural, technological, and social). There isn't a single center of control or a linear hierarchy as all the elements are co-dependent and co-evolving. We are embedded in the systems with which we work. We are part of the wicked problem.
2. Rather than one way of knowing and acting, we acknowledge multiple contexts, perspectives, and ways of knowing, being, and responding to the world. We embody complexities.
3. There are also different levels of interconnected complex systems - from microsystems of our intersectional identities and positionalities to the meso-system of the classroom as learning environment, to larger systems of institutions, and the world beyond.
4. Change is natural in complex systems as new interconnections and patterns emerge.

Knowing and learning is a complex embodied process.

We bring who we are to scholarship, teaching, and learning.

1. We are each a microsystem of ideas, beliefs, assumptions, motivations, fears, and dreams. These are shaped by our socio-political identities, histories, bodies, and lived experiences.
2. This microsystem of who we are shapes how we know, perceive, and respond to the world. Therefore, we each bring a different narrative or story to anything. Added to this, we are trained into disciplinary ways of seeing and constructing knowledge that we might be unconscious of.
5. We cannot take the subject – the person – out of the process. We are embedded in the system and are shaped by it. While there is an objective physical world out there, we can only explore and come to know it through the filters of an embodied subject or self.

We aim to move from a transmission model of education to an empowerment model.

We envision a co-creative process that centers agency and meaningfulness in learning.

1. We reject the industrial model of a linear, binary, and hierarchical power dynamic that places learners in passive roles and that uses a one-size-fits-all approach which blocks many learners.
2. We center meaningfulness and relevance in learning through co-creation and multiple ways of knowing and expressing knowledge.
3. We take a contexts and future-focused approach in intentional design for success in the present and into future lives, careers, and positive global citizenship.

Based on the above, TD pedagogy works with the following principles.

As you read each one, take an inner journey. Imagine what these principles look like in practice - in classrooms and other learning spaces. How do these principles work in scholarship and leadership?

Begin with questions and goals

Why – why not – what if? Imagine beyond legacy and tight paradigms.

Rather than starting with a singular knowledge base and method, TD pedagogy begins with questions. This speaks to Freire's (2000) "problem posing" education. We first ask – what are we transforming and why? In TD pedagogy, questions and goals address existing inequities and barriers to learning in our legacy systems of education, as well as possibilities for more inclusive and just education into the future.

Design context- and people-oriented environments and actions

Plural thinking • One size does not fit all. • Center people and contexts

In taking a systems- and complexity-oriented approach, TD pedagogy rejects the instrumentalist idea of 1-1 causal relationships between action and outcome, and a one-size-fits-all approach that presupposes a homogenous student body and an unchanged and unchanging context.

Non-linear and non-binary processes and ways of thinking are important for inclusive, equity-minded design and interaction. Teaching is not a linear and objective process of using method X to get result Y. Nor is learning a process of doing X to learn Y. There are no finite and complete strategies as learning is a complex emergent process rooted in contexts and identity; each person engages and constructs knowledge differently.

Transform paradigms and cross boundaries

Reject the single story or narrative. Expand and integrate new ways of seeing, thinking, learning.

TD pedagogy rejects the imposition of a single perspective or story and narrow boundaries in legacy systems that work for a dominant group while marginalizing others, thus creating an exclusionary power dynamic.

In response, it embraces plurality, differences, and multidimensionality. It understands and welcomes multiple stories and counter stories because different perceptions, kinds of knowledge, ways of knowing and communicating, multiple perspectives, and lived experiences are part of a larger reality to which we each have limited access. TD pedagogy transforms and expands subject matter and method by crossing disciplinary, methodological, and discourse boundaries to meaningfully include all learners, remove learning barriers, and create meaningful pathways to learning that engage the larger world beyond classrooms.

Boundary crossing skills – curiosity beyond our paradigms and a desire to seek connections - are essential for this.

Adapt for justice and the future

Transformation = creative adaptive response • Embrace emergence, uncertainty, and change

TD pedagogy works with the idea of fluid futures. Change and emergence are natural processes as a result of the dynamically interconnected global system in which we live and learn.

Therefore, it recognizes that pedagogy must remain flexible as we center learners, teaching-learning contexts, and larger world changes. It also recognizes that learning in itself is an embodied, complex adaptive process of moving through cognitive and affective changes in building knowledge and skills.

Integrate reflexivity and build metacognition

Surface and question assumptions.

Reflexivity or critical introspection is necessary for transformative, ethical decision making. Reflexivity helps us surface and question traditional (legacy) systems, assumptions, and practices, and our positionality and complicity (conscious and unconscious). This metacognitive awareness is essential to transformative work helping us to remain open to differences, divergences, and emergences that are part of the process of innovation or finding solutions to problems. It is critically important in working to transcend legacy systems and our own positionality in order to make intentional and future-focused, ethical decisions. It helps us craft an intentional philosophy and method rather than work unconsciously in the system.

Transdisciplinary thinking understands that we cannot solve problems with the same tools and ways of thinking that created them.

Connect and co-create generously

Supportive exchange leads to growth and transformative resilience.

Transdisciplinary thinking embraces the power of multiple stakeholders who bring diverse stories that together through mutual learning can synthesize larger ideas and new perspectives that can address issues in the world. Openness to difference, emergence, and learning are critical capacities for transdisciplinary thinking.

TD pedagogy builds on this with generous collaboration. We co-create awareness, intentionality, motivations, knowledge, and skills with other educators. We invite students as partners with us in navigating learning. In this process, grace, compassion, and generosity are central supports to build resilience for transformation by creating safe spaces for errors and surfacing conditioned assumptions and biases.

In developing a TD pedagogy, we do not rush to develop a finite set of strategies.

Rather, we develop principles, mindsets, and thinking tools or frameworks that help us navigate the specific contexts of our scholarship and practice. This gives us both the flexibility and openness to work adaptively in centering our students and contexts, as well as to keep expanding our toolkit through practice and sharing.

Transdisciplinary Mindsets for Ethical Education

Developing transdisciplinary mindsets – or habits of thought and action – is essential in this course. These mindsets help you to integrate the WHY of ethical education and the methods (HOW) in a living philosophy and practice. You probably embody these mindsets to some extent, or some might be new ideas to you. You might think of them in different terms, or you might not be consciously aware of them.

Your goal is to explicitly understand and cultivate them as you work through this course.



Ethical. A deep yearning for justice in education. Awareness of legacy schooling structures and practices that perpetuate inequities and barriers to learning and flourishing. In response, designing teaching and learning to remove barriers and ensure all learners are engaged and supported in preparing to flourish in their future.

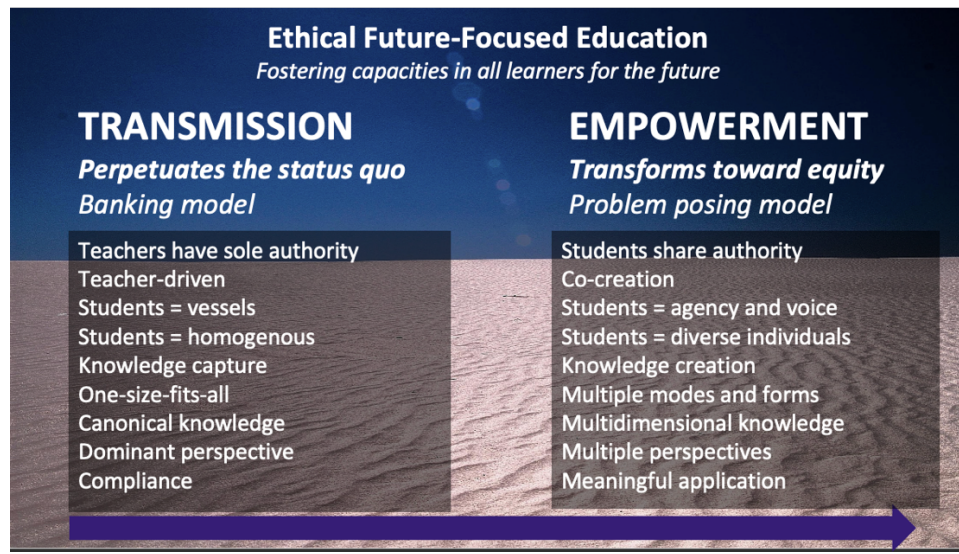
Design. A people and context focused intentional approach. Always starting with a focus on learners and their current and future contexts, the removal of barriers to success, and integrates evidence-based teaching and learning strategies and environments. Therefore, also a flexible, adaptive approach that is responsive to emerging information and opportunities.

Reflexive. Critical introspection as on-going practice to examine assumptions, build self-knowledge, and a coherent, explicit value set. Introspection from a systems and disciplinary perspective to examine legacy assumptions and biases that are harmful or misaligned to students' future flourishing. Sustaining a living philosophy and becoming a lifelong learner.

Co-Creative. Collaboration for growth. The ability to listen with openness and curiosity to new and different ideas, to invite and engage with feedback toward growth. Developing teaching and learning as co-creative, collaborative processes with learners, other educators, and communities.

Systems and Complexity. Embracing plurality. Understanding interconnected, non-binary, non-linear, and emergent aspects of education. Using complex adaptive thinking in questioning the status quo and staying open, imaginative, and creative in responding to emerging situations.

FRAMEWORK: Transmission to Empowerment Model



This is our compass or guiding framework that will help us build an integrated philosophy and approach using TD pedagogy.

The goal in transformation is to move away from the legacy Transmission approach that perpetuates a status quo, blocking access to learning and marginalizing and oppressing many learners. Freire (2000) refers to the legacy system of education as “banking” education characterized by an overarching singular narrative based on power, compliance, and homogeneity in education that denies education to many. Teachers and students interact in a linear, a top-down hierarchy of student compliance. This includes an assumption of learning as a one-way process of information transmission from teacher to students and of a canonical body of knowledge that encapsulates a singular dominant perspective. In this model, the wholeness of students and the rich complexities of identities and multiple perspectives of deep learning are absent.

The goal in transformation is to move toward an Empowerment approach to education and leadership. This model engages a rich, centering perspective of learners, learning, contexts, and methods. Students have agency and are invited to bring their full selves into the learning process. Together, teachers and learners become a community engaged in co-creating learning and growth. While teachers have knowledge authority, they are aware of and integrate students’ lived experiences, cultures, and perspectives in designing and facilitating learning. The learning environment is expansive and connective in integrating multiple ways of knowing, representing, and expressing knowledge so that learning is meaningful, and each person matters deeply in the process.

Reflect: In your schooling experiences – looking back from early childhood through college – when and in what kinds of schooling contexts or subjects did you experience the Transmission model and the Empowerment model? Which was more prevalent in your schooling experience?

Reflexivity: A Tool for Transformative Practice



"... seldom if ever do we ask the 'who' question - who is the self that teaches? How does the quality of my selfhood form - or deform - the way I relate to my students, my subject, my colleagues, my world?" – Parker Palmer. The courage to teach. P.4

Defining Reflexivity: Critical introspection for transformation.

Reflexivity enables us to pause, get outside ourselves, and take a critical, fresh look. And grow.

Reflexivity is unpacking, unraveling, and questioning prior knowledge, assumptions, values, beliefs, motivations that condition and shape our thoughts and actions. It helps us make intentional choices to change or discard incongruent beliefs and assumptions, and to amplify and articulate those that support our explicit mission. Reflexive thinking enters many aspects of our lives. While it is a specific way of thinking, a habit of mind, it is not a specialized activity limited to just some areas of life. It comes into play in our personal lives, at workplaces, in scholarship, as leaders – and as transformative teachers. Reflexivity grounded in values for positive futures help us work transformatively as ethical educators.

Reflexivity in Scholarship

“Examination of one’s own beliefs, judgments, and practices during the research process and how these may have influenced the research. If positionality refers to what we know and believe, then reflexivity is about what we do with this knowledge. Reflexivity involves questioning one’s own taken for granted assumptions. Essentially, it involves drawing attention to the researcher as opposed to ‘brushing her or him under the carpet’ and pretending that she or he did not have an impact or influence. It requires openness and an acceptance that the researcher is part of the research (Finlay 1998) – from [Warwick University. Education Studies](#).

Reflexivity in Teaching

“Reflexivity is an act of self-conscious consideration that can lead people to a deepened understanding of themselves and others, not in the abstract, but in relation to specific social environments... [and] foster a more profound awareness . . . of how social contexts influence who people are and how they behave... It involves a person’s active analysis of past situations, events, and products, with the inherent goals of critique and revision for the explicit purpose of achieving an understanding that can lead to change in thought or behavior. pp. 155-156 (Danielewicz, J. (2001). – from [Transformative Inquiry](#)

Reflexive examination of assumptions



Have you heard statements like these – or maybe thought them yourself? What do these statements assume? Why might they not be true or applicable in all situations?

Australians love rugby

It's polite to offer to shake hands when you meet someone

Kids love pizza

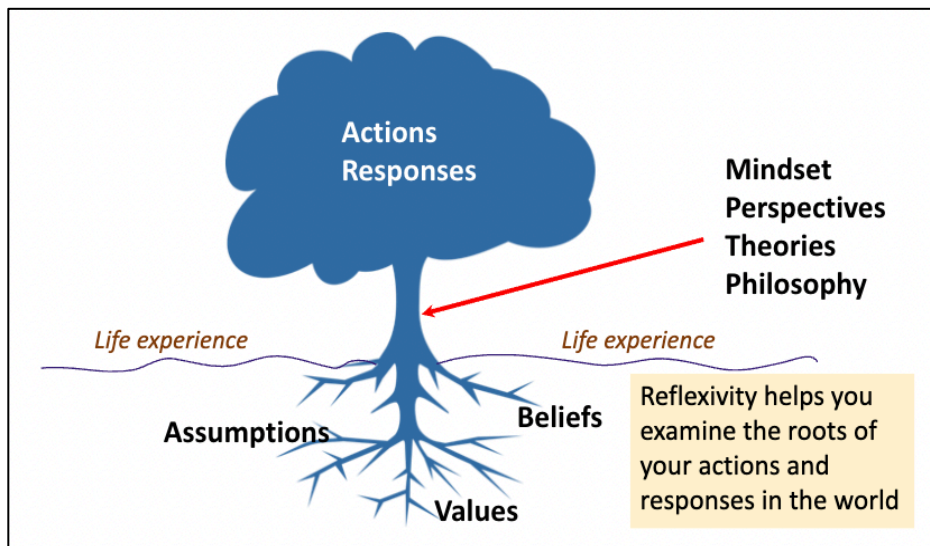
Cats are not people friendly

Boys are better at mathematics than girls

[Image source](#)

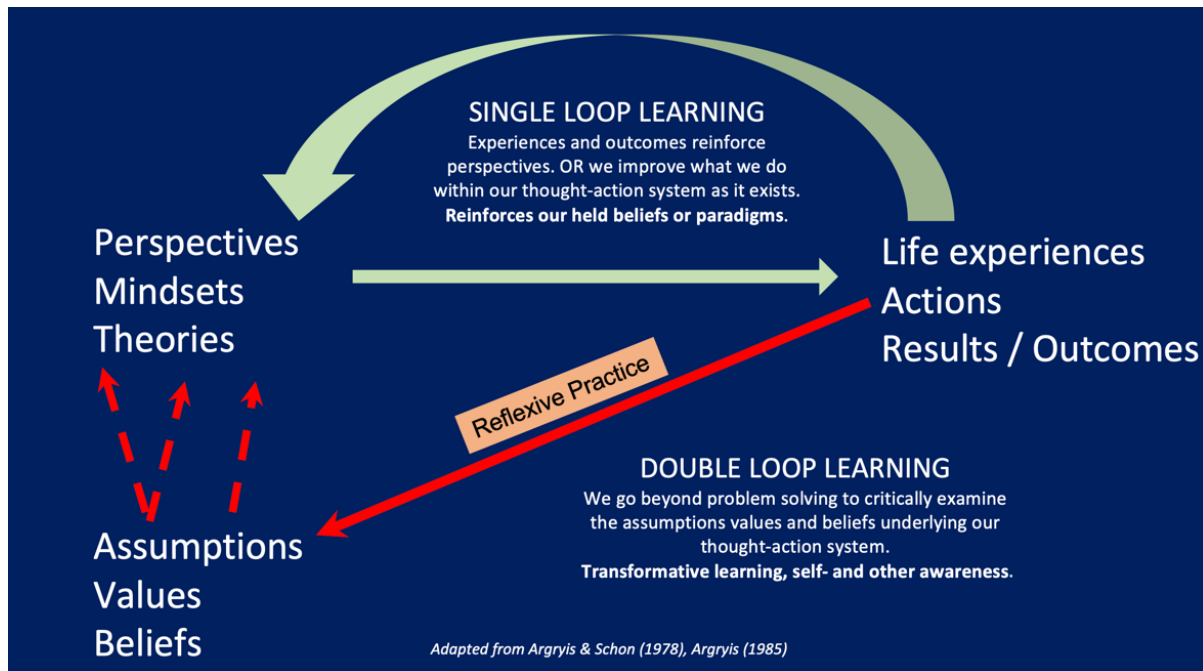
Assumptions. As the metaphorical figure below shows, assumptions, beliefs, values, and expectations are shaped through lived experiences. These form the ground from which grow mindsets, perspectives, theories, and philosophies that we embody, often in tacit and unconscious ways. These govern thoughts, responses, actions, and our interactions.

Assumptions are not all bad. They help us move through the world. We assume laws of physics, of social interaction. We do not need to puzzle everything out and can work on auto or reflex. In scholarship, disciplinary training builds assumptions and norms that we assume as valid.



But, when situations shift away from the familiar status quo, we see clearly that what we assume is in fact not necessarily a given truth. An example is when we travel and experience cultures and environments very different to the ones we know – and suddenly, our assumptions no longer hold, for example in discovering that in another country, traffic moves on the opposite side of the road! On a larger scale, when manufacturing automated and assumptions about life and work were disrupted. In research, when assumptions of mathematical order were disrupted by explorations in Chaos theory.

Double loop thinking. A process for reflexive practice



This figure shows double loop learning – a way of understanding how reflexive practice works.

Single Loop Learning. We work in a single thought-action cycle. Our perspectives – grounded in deep assumptions, values, and beliefs (often unconscious) shape how we experience life and the outcomes of how we act and respond. These in turn reinforce our perspectives. When things go awry, we problem solve within our existing thought-action system, focusing on addressing elements outside of ourselves.

Double-Loop Learning. We work in a reflexive thought-action cycle. While we engage in single loop thinking looking at external factors, we also critically examine internal assumptions, values, and beliefs – both personal and disciplinary - to discover possible biases and blind spots. This leads to perspective shifts and to expanded theories or worldviews that can reframe and reshape how we respond and act in the world.

Double loop learning is a reflexive process that is critical for transformative work. This is because in doing transformative work, we cross boundaries, connect with ideas and people in ways we have not previously done. We have to be aware of the ways in which our perspectives contain blind spots, misassumptions, and biases. How are they limiting our thought and action? For example:

- Values and beliefs about clothing can cause a negative response to women in *hijab*. Reflexive awareness can help us intentionally empathize and connect to understand and accept their choice of clothing.
- Disciplinary training can cause blind spots leading us to design marketing approaches that fail in a foreign country. Reflexive awareness through double loop learning helps us check our assumptions about how markets work and be open to new ideas.
- We design tests and assignments based on existing methods and past experiences. Reflexive awareness can alert us to assumptions about learning and testing that shape our actions but are incongruent to our students' current realities.

Examples of Reflexive Practice in Different Contexts

Here are some examples that show the need for reflexive practice. For each area, can you think of other assumptions that create blind spots and unconscious or implicit bias?

1. **Scholarship** – assumptions of method and context shape scholarship but can also block expansion of knowledge and method. For example, the assumption that teachers are the classroom experts miss the potential of students as experts of their own learning and we do not include them as study participants; assumptions of binary genders in math education research misses the potential of designing from the perspective of intersectionality and plurality of genders and sexuality; the assumption that only quantitative data is valid, misses critical information found in thick qualitative data. One way to think about literature reviews is that it frames a reflexive process that can help us examine and question research assumptions.
2. **Parenting** – social, cultural, and historical assumptions shape how we think about parenting. For example, assumptions that good parenting is being strict or good parenting is letting children learn the hard way; women should prioritize being mothers and homemakers over their career, and conversely, a woman who is very career-oriented is not a good parent; without a good education, one cannot effectively support a child's education. Pausing to question the assumptions in our actions or judgments of parenting can help us address specific context-related needs of our families.
3. **Teaching** – assumptions of method and mission that shape how we teach. For example, the assumption that the teacher is the expert, and the student receives information and have nothing to contribute; that unless we give grades to everything, students will not be motivated to do the work; that learning is taking in pieces of knowledge given by the

teacher and committing them to memory; that the student who does not speak up in class is not engaged.

Positive Outcomes of Reflexive Practice

1. **Plural thinking and humility in knowledge and knowing.** We recognize that perspectives are not absolute nor stable. And therefore, we are more open, better able to consider, embrace, and integrate different beliefs, values, and perspectives. This supports perspective taking and empathy. We develop a more open, curious mind.
2. **Change and learning.** We are not stuck in unquestioned assumptions and unconscious bias. We are not tightly bound by our contexts and can take a step outside of ourselves to see with new perspectives. Therefore, we can change how we approach and align with shifting contexts.
3. **Creative thinking.** We can think out of the box of our preset assumptions and beliefs and find new ways of knowing and creating. For example, artists question the assumptions of what makes good Art – and innovate new forms; scientists question the assumptions of a human-centered world and develop theories and actions based on an ecosystem with the planet at the center.

Extracts on the WHY of Teaching: What it Means to Educate

You are on a journey to develop your teaching philosophy and approach and shape your mission and practice. These short extracts speak to the authors' philosophies – their deep beliefs and visions of education that ground their work, and from which they derive energy and focus to sustain their practice. As you read them what resonates with you and why, what questions arise. What connections can you find to TD pedagogy and mindsets, to reflexivity, and to the Transmission and Empowerment model of education?

Bettina Love - *We want to do more than survive*. "Education reformers take up space in urban schools offering nothing more than survival tactics to children of color in the form of test-taking skills, acronyms, grit labs, and character education. The barriers of racism, discrimination, concentrated poverty, and access to college - persistent, structural barriers - cannot be eradicated by tweaking the system or by making adjustments. We must struggle together not only to reimagine schools, but to build new schools that we are taught to believe are impossible: schools based on intersectional justice, antiracism, love, healing, and joy" - p. 11.

[Book review](#). [Bettina Love's website](#)

bell hooks. *Teaching to transgress*. "To educate as the practice of freedom is a way of teaching that anyone can learn. That learning process comes easiest to those of us who teach who also believe that there is an aspect of our vocation that is sacred, who believe that our work is not merely to share information but to share in the intellectual and spiritual growth of our students. To teach in a manner that respects and cares for the souls of our students is essential if we are to provide the necessary conditions where learning can most deeply and intimately begin". - p. 13. [Book summary](#). [bell hooks' website](#)

Parker Palmer - *The courage to teach*. **Parker Palmer goes beyond the WHY to ask - WHO?** "... seldom if ever do we ask the 'who' question - who is the self that teaches? How does the quality of my selfhood form - or deform - the way I relate to my students, my subject, my colleagues, my world? [p. 4] ... 'When I forget my own inner multiplicity and my own long and continuing journey toward selfhood, my expectations of my students become excessive and unreal. If I can remember the inner pluralism of my own soul and the slow pace of my own self-emergence, I will be better able to serve the pluralism of my own students at the pace of their young lives. By remembering our mentors, we remember ourselves - and by remembering ourselves, we remember our students" [p. 25].

Paulo Freire - *Pedagogy of Freedom. Ethics, Democracy, and Civic Courage* connects teaching and learning. "There is, in fact, no teaching without learning. One requires the other. And the subject of each, despite their obvious differences cannot be educated to the status of object. Whoever teaches, learns in the act of teaching, and whoever learns teaches in the act of learning. ...the process of learning, through which historically we have discovered that teaching is a task not only inherent to the learning process but is characterized by it, can set off in the learner an ever-increasing creative curiosity." p 31-32

Read: Freire Chapter 1 and 2. [Pedagogy of the Oppressed link to ebook at Claremont Colleges Library](#)

Paulo Freire was a Brazilian philosopher and educator. His *Pedagogy of the Oppressed* (1968) strongly influenced movements in critical and liberatory pedagogy development around the world. Following Frantz Fanon's (1961) *The Wretched of the Earth* with its call for an education beyond the cultures of colonization, Freire analyzed colonization through education. He proposed an education that developed a self- and other-awareness – *conscientization*. This includes a critical understanding of self and social realities through the integration of reflection, recognition or awareness, and action. **Chapter 1** presents many of Freire's key themes about freedom and education. **Chapter 2** presents his concepts of "banking" and "problem posing" models of education and outlines key elements of his pedagogy.

Look out for his concept of revolution as a "dialogical" process central to problem-posing education. Consider connections to elements of transdisciplinary principles of multiple perspectives and plural thinking, co-creation, and reflexivity.

Watch: [The Transdisciplinary Approach](#) [3:50 mins]

This video brings together the voices of people from different countries sharing their perspectives on TD research and practice. Their contexts are in sustainable development. What connections do you see that apply to the world of education and leadership?

Reflect:

Transdisciplinary mindsets: Consider the extent to which you embody the 5 transdisciplinary mindsets. Where in your life (professional and personal) have you had the opportunity to practice these ways of thinking. Which are more prevalent, and which do you think you need to intentionally develop? How might these mindsets help you flourish as a scholar, educator, leader, and member of society?

Reflexive thinking: Consider the process and the benefits of reflexive practice. Where in your life do you engage in reflexive thinking or double-loop learning? How would you and others benefit from explicitly bringing it in as part of your work? Consider each of the areas below:

- As a scholar and researcher:
- As a learner:
- In your professional practice:
- In any social or caregiving life role:

How does reflexive practice support a transdisciplinary approach to scholarship and practice?

Further Exploration

Lotz-Sisitka, H., Wals, A. E., Kronlid, D., & McGarry, D. (2015). [Transformative, transgressive social learning](#): Rethinking higher education pedagogy in times of systemic global dysfunction. *Current Opinion in Environmental Sustainability*, 16, 73–80.

Bettina Love. (2020). *We want to do more than survive. Abolitionist teaching and the pursuit of educational freedom.* Beacon Press.

bell hooks. bell hooks's writing is powerful in offering direct and sharp critiques of the legacy system while at the same time offering a compassionate and healing approach that brings joy into learning. Some great titles to look for:

- [Teaching to Transgress: Education as the Practice of Freedom](#) (she writes that to educate is a practice of freedom in teaching that anyone can learn)
- [Teaching Community: A Pedagogy of Hope](#), about the power of education in and beyond classrooms,
- [Teaching Critical Thinking: Practical Wisdom](#), about the power of critical questioning and awareness to work purposefully with the essence of democratic education and decolonization, as well as with practical matters like lecturing and large classes, and in maintaining one's essential integrity in the process.

Patricia Cranton. Cranton was a scholar of transformative education, integrating science and philosophy masterfully to explain the dynamics and potential for transformative teaching and learning.

- Becoming an authentic teacher in higher education
- Understanding and performing transformative learning.

Ira Shor (Ed.) (1987) [Freire for the classroom. A sourcebook for liberatory teaching.](#)

A collection of essays by teachers using Freire's methods in the United States – full of practical application of principles. The book also includes Freire's Letters to North American Teachers.

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Chapter 2 - Systems and Complexity: Identifying Power Dynamics

Chapter Overview

In this chapter, we explore the foundations of TD pedagogy in taking a systems and complexity view of teaching and learning. This big picture thinking helps us to locate education today in relation to its past and in preparation for the future.

“Life can only be understood backwards; but it must be lived forwards.”
— Søren Kierkegaard

This quote by philosopher Søren Kierkegaard connects with a time-oriented and dynamic systems- and complexity-based process. To work intentionally in an ethical approach to education, we must clearly see the legacy system within which we do this work, and that has been around for a long time. Seeing and recognizing the system as a whole, we are better able to identify where inequities happen and why. This makes us effective in transforming the microsystem within our classrooms and other learning spaces toward being more inclusive and equity-minded in supporting a diverse range of learners.

This is part your development of a reflexive and explicit living philosophy as a teacher-scholar and leader, so you coherently connect and practice your values and goals in your teaching and leadership work.

Task

Do this task before reading the notes on systems thinking and legacy education so you can see what you are bringing from your prior knowledge and lived experiences to this chapter.

Answer these questions before moving to the next page. It's much more revealing! So, no peeking!

1. Exploring and activating prior knowledge and perspectives.
2. What do you already know about systems thinking?
3. List some "systems" - think of Natural, Social, and Machine systems.
4. What do you think makes them systems?
5. What have you heard about "systems thinking"?
6. Why is this important - and growing in importance?

Compare the examples you brainstormed with these images of systems.

Human-made systems



Nature-made systems



What makes all of these examples - and your examples - systems?

How would you now define systems and their characteristics, and explain why systems thinking is important?

In the rest of the Chapter, you will explore:

1. Systems thinking. A complexity orientation.
2. Human social systems.
3. Legacy education. Difference and a system of domination.
4. Mapping education as a system.

Systems Thinking. A Complexity Orientation



Photo credit: Nathan Dumlao <https://unsplash.com/photos/kME9jbKd--s>

Systems Thinking reveals complex pictures of lives at large and micro scales. Our planet is affected by elements of the Solar System (and other systems beyond). Within this, we are part of Earth's environmental systems. We live in multiple interconnected social systems spanning the globe or that are local to our communities. As individuals, we are a microsystem of many embodied systems - physiological, neurological, cultural, historical etc. Each system can be regarded as a paradigm or set of interacting norms within which we live.

Systems thinking is a more natural and common way to think than we might assume.

"On the one hand, we have been taught to analyze, to use our rational ability, to trace direct paths from cause and effect, to look at things in small and understandable pieces, to solve problems by acting on or controlling the world around us ... On the other hand, long before we were educated in rational analysis, we all dealt with complex systems. We are complex systems — our own bodies are magnificent examples of integrated, interconnected, self-maintaining complexity. Every person we encounter, every organization, every animal, garden, tree, and forest is a complex system. We have built up intuitively, without analysis, often without words, a practical understanding of how these systems work, and how to work with them." - Donella Meadows. 2008.

Watch. [What is Systems Thinking?](#) **Peter Senge** [1:08 mins]. Peter Senge, author of *The Fifth Discipline: The art and practice of the learning organization*. 1990, defines systems thinking. As you watch, ask how you are a systems thinker. Listen for these key ideas:

- "The web of interconnectedness within which we always live and act"
- "The connections in any situation"
- "How things unfold over time"

Where in your life do you see this happening?

Read. Thinking in Systems. Donella Meadows – Introduction and Chapter 1. [33 pages] [Donella Meadows](#) (2008). *Thinking in Systems*. [if you are interested to dive into systems thinking, this is an excellent primer.] [Thinking in Systems eBook available at Honnold Library](#)

The nature of systems: Complex dynamic interconnections

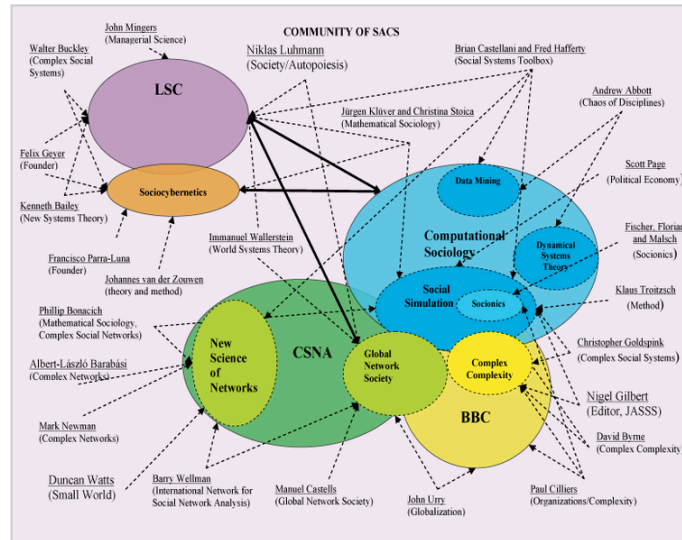
“A system isn’t just any old collection of things. A system is an interconnected set of elements that is coherently organized in a way that achieves something. If you look at that definition closely for a minute, you can see that a system must consist of three kinds of things: elements, interconnections, and a function or purpose.” - Meadows (2008) [Thinking in Systems](#)

“It is a very hard thing to turn off once you learn how to think in systems. ... I never look at something in an isolated way anymore and I always try to understand why something might be the way that it is” - Roison Dillon. Map the System finalist.

1. Systems have a complex diversity – there are multiple elements.
2. Systems reveal the complexity and beauty of multiple perspectives.
 - There is no center. The center is subjective i.e., defined by the point from which the perceiver looks. Different people will see different patterns and connections.
 - We see different elements and gain different kinds of information and understanding at every level of a system and from different locations in it.
3. The elements are interconnected.
 - Each element might be connected to more than one other element, and many elements might connect to a single element.
 - The elements are in dynamic flow. The elements in the system are in constant interactions of causality, contradiction, amplification, dampening.
 - Interaction or flow is non-linear and non-sequential. There are feedback loops that amplify or dampen elements and situations or maintain balance. There can be multiple outcomes from one source and multiple sources leading to single outcomes.
4. There is an overarching organization or function, either inherent in the system (natural systems) or intentionally designed for the system (human-made systems). A natural system like a forest is organized in order to keep adapting to perpetuate itself. The neuro-physiological system of our body functions to keep mind and body connected and working. A digital system, like a computer, functions to enable users to engage in knowledge work.
5. Systems have emergent properties; new interaction patterns and relationships arise as the system functions and adapts to its own dynamic interactions and especially with interactions with other systems and factors.
6. Systems themselves are not singular or isolated; all systems are part of other systems and themselves contain many systems.

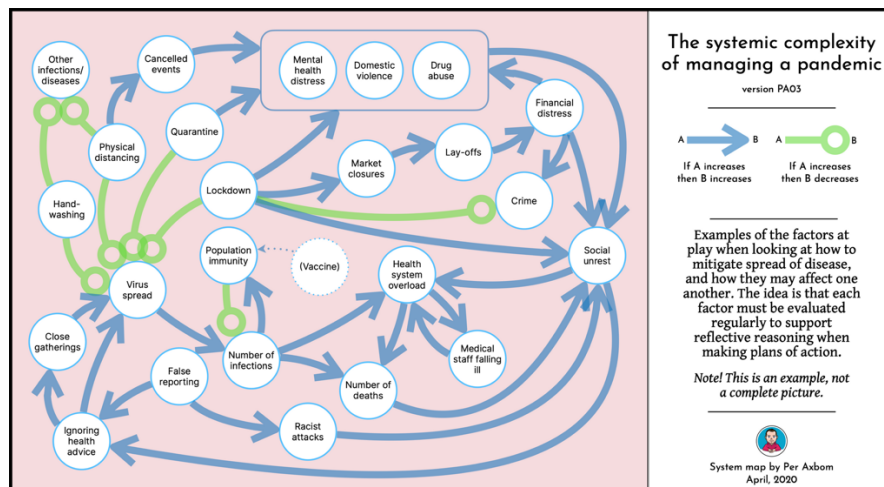
*"A system is never the sum of its parts. It's the product of their interaction." -
Russell Ackoff 2003*

Images of systems thinking maps



[Image source.](#) A systems map showing the landscape of sociology.

Imagine visualizing a literature review!



[Image source.](#) A systems map showing the partial complexity of managing a pandemic. The map shows both amplifying and dampening feedback loops.

[Map the System!](#) An initiative at Oxford University and a global competition in partnership with other institutions around the world. The goal is to change conversation and strategy in social impact education toward a co-creative understanding of complex problems as part of transformative change. In this competition, participants from multiple disciplines use systems

thinking to explore a complex issue in the world and share their findings in a meaningful way. The website has a [video of the final presentations](#) where participants share their maps and discuss what they learned. You might be interested to apply to participate with your research.

Here are some extracts about systems and complexity from different fields. What ideas from them resonate for you in connection with teaching and leadership?

Poetry – Contemplative Practice

No man is an island entire of itself; every man is a piece of the continent, a part of the main; if a clod be washed away by the sea, Europe is the less, as well as if a promontory were, as well as any manner of thy friends or of thine own were; any man's death diminishes me, because I am involved in mankind. And therefore never send to know for whom the bell tolls; it tolls for thee. - John Donne. [Meditation XVII](#). 1624

Evaluation Science

"A complex system is characterized by a large number of interacting and interdependent elements in which there is no central control. Patterns of change emerge from rapid, real-time interactions that generate learning, evolution, and development – if one is paying attention and knows how to observe and capture the important and emergent patterns. Complex environments for social interventions and innovations are those in which what to do to solve problems is uncertain and key stakeholders are in conflict about how to proceed." - Michael Quinn Patton. [Developmental Evaluation](#). 2010

Systems Science

"Let's face it. The universe is messy. It is non-linear, turbulent, and dynamic. It spends its time in transient behavior on its way to somewhere else, not in mathematically neat equilibria. It self-organizes and evolves. It creates diversity and uniformity. That's what makes the world interesting, that's what makes it beautiful, and that's what makes it work." - Donella Meadows. [Thinking in Systems](#). 2008

Philosophy and Complexity

"It has been justly remarked that it is not the cells, but the actions taking place among the cells, that constitute an organism. Now, the set of these interactions constitutes the organization of the system. Organization is the concept that gives constructive coherence, order, regulation, structure, etc., to the interactions. In fact, the notion of system comprises three different concepts:

- **system** (which expresses the complex unity and phenomenal character of the whole, as well as the complex of relations between the whole and the parts);
- **interaction** (which expresses the set of interwoven relations, actions, and reactions which collectively create a system);
- and **organization** (which expresses the constitutive character of these interactions as forming, maintaining, protecting, regulating, governing, and regenerating the system-in short, the thing that gives the idea of system its conceptual backbone).

These three terms are indissoluble; each one implies the other two, and the absence of any one seriously mutilates the macroconcept of system. The idea of system without the notion of organization is just as defective as the notion of organization without the idea of system. We are dealing with a macroconcept.” Edgar Morin. From the concept of system to the paradigm of complexity. 1992.

In applying systems and complexity thinking for ethical practice, we can intentionally transform legacy systems or paradigms toward positive outcomes and futures. Here are a few examples of why systems thinking helps us work transformatively (how many more can you think of?)

- **Ecology.** In becoming conscious of human impact on natural planetary systems, we make a choice to work for sustainable human systems of commerce, industry, and living. We shift the paradigm of linear non-sustainable economy toward a circular, sustainable economy.
- **Racism.** In learning about systemic racism and oppression, we choose to understand and take action as allies, advocates, and activists in our own spheres of influence however modest. We shift the paradigm of single-narrative dominance toward a paradigm of plurality and justice.
- **Women’s rights.** In becoming conscious of systems of subjugation of women in patriarchal societies, we make a choice for equitable inclusion of women in all aspects of life. We change the paradigm of women as “less than” toward women as empowered members of society.
- **Political revolution.** In becoming conscious of political corruption and hegemonic rule as domination systems, we make a choice for revolution and new government. We shift from a paradigm of totalitarianism toward a paradigm of shared governance.
- **Medicine.** In becoming conscious of the interconnections between cultural identities and health, we develop practices to understand and integrate socio-cultural information in diagnosis and treatment. We shift from a paradigm of isolated medical practice toward a paradigm of culturally informed medical practice.
- **Education.** In becoming conscious of the inequities and oppressions and the misalignment of the legacy system to current world needs, we make a choice to

transform teaching and learning. We shift from a paradigm of Eurocentric transmission teaching toward a paradigm of future-focused culturally relevant teaching.

Systems thinking along with reflexivity develops deep awareness of the elements, interconnectivity, and hidden patterns that shape and drive a system without getting caught up in a single story. In working with the legacy education system, we can trace patterns of inequity, which is the first step toward making intentional choices to change teaching and learning toward equitable and just outcomes for all.

Human social systems

Natural and human social systems share basic characteristics – the elements, interconnections of dynamic relationships, and an overarching organization or function. However, natural and human differ significantly:

In nature, systems shift and emerge into new patterns when new elements enter for example when a new creature enters an ecosystem creating a different interaction of flora and fauna, or when weather patterns change, when extensive logging happens. As new elements bring new interactions and connections, the pattern of the system shifts - or re-equilibrates - to maintain its fundamental organization or function of the system. The imperative of the system is to maintain its organization through adaptation into new forms and patterns. For example, logging removes trees, opening up forested areas to different levels of light. This changes interactions and dependencies among the plants and animals in the area which in turn shift the forest ecosystem. But as a whole, the system has no conscious volition in this complex adaptive process.

In social systems, while similar things happen, we have the added elements of consciousness and volition.

- A system shifts when new elements enter - an influx of new trade, new technologies, refugees, new laws, social trends like parents deciding to homeschool, etc. These new elements create new contingencies and interactions that move the system so the paradigm shifts. We see this at the macro level of society when crisis-based elements come in (a pandemic, social unrest, political strife, a natural disaster). We also see it in the normal ebb and flow of microsystems - think of fashion elements entering in and disrupting how we think about clothes, for example the radical entry of trousers for women, or the stopping of foot binding in China etc.
- However, unlike natural systems, elements in the social system include people and hence consciousness and agency, as well as lack of agency. The resulting dynamics play a significant role in how our global social systems as a whole respond. Different levels of access, information, choice, and power allow different groups to respond to shifting contexts in different ways. We can accept or reject refugees, use digital tools to

continue education in a pandemic, create food banks to support hungry students. We can allow unhealthy feedback loops to amplify injustices for some because it sustains power and privilege for others. With long-perpetuated systems, we often do not even realize the imbalances for some people if we ourselves do not experience the negative outcomes. Working in human systems therefore demand an ethical lens that helps us use intention and conscious choice for justice and human flourishing.

Education as a system is a human-created process and practice. In working intentionally and ethically, we must understand the system as it currently is. Where did it come from and what deep assumptions and perspectives underpin the system as a whole? Seeing the big picture, we are better equipped to move intentionally toward transforming education, dismantling oppressive and outdated practices, and reimagining teaching and learning to create equity-minded pedagogies that honor all learners and support them in flourishing. Taking a systems view of education helps us to intentionally shape the evolution the system toward social good.

In the next part, you will explore how difference lies at the heart of key power dynamics that have shaped our legacy education system.

The primacy of difference: Systems by their nature contain interactions of great diversity and difference. However, humans have marked responses to differences.

Explore “Different” Does the word “different” evoke negative or positive responses in you? Does it evoke different responses in different contexts?

Here are synonyms for “different” arranged alphabetically. Which seem negative and which seem positive? Most of them are neutral; what contexts make them seem negative or positive?

- Aberrant
- Alien
- Contrasting
- Deviant
- Dissimilar
- Extraordinary
- Foreign
- New
- Novel
- Odd
- Other
- Strange
- Unalike
- Variant
- Weird

Have you experienced any of the following responses to difference?

- Difference as Threat
 - Many of us are wary or afraid of the concept of “different”. Different – means unknown, not like us, not like the life or ideas or practices we know. Different – means things might be changing and destabilizing us. To be “different” is to be an outsider, alien, unaccepted, suspect We work hard to “fit in.”
- Difference as Richness
 - And yet, “different” is also wonderful and positive. Different is – unique, innovation, creativity. To be different is to bring new ideas and perspectives. Differences mean variety, richness, multiplicity of possibilities, and potential. We revel in and appreciate a range of cuisines, art forms, languages, stories. Without variety, we’re bored. We know difference is critical to life – the diversity of eco-systems is essential to planetary sustainability against the threat of monocultures; diverse fauna and flora are sources of nutrition and medicine.
- Difference as reframing
 - Sometimes, encountering something different stops us in our tracks and disrupts our autopilot thinking and response. This pause – even momentary – creates a focused moment of attention where we see from a different perspective and reflect on assumptions. For example, seeing PhD holders teaching kindergarten disrupts assumptions that teaching children is “child’s play”, seeing child soldiers in Sierra Leona shocks us into awareness of the impact of war and the loss of childhood.

Artists use difference - defamiliarization or making strange - to disrupt habituated thinking and expectations of reality through which they create a heightened state of perception, attention, and thought in their audience.



How does Ai Wei Wei's installation (2017) of refugee lifejackets on a classical European building in Berlin use defamiliarization to disrupt and heighten awareness and perspectives on current affairs?



What are your responses to the strangeness of blue trees (2011 – 2018) by Konstantin Dimopoulos? What might this difference be disrupting and calling into focus?

Legacy Education: Difference and Systems of Domination

Difference – and our responses to it – have played a key part in human history.

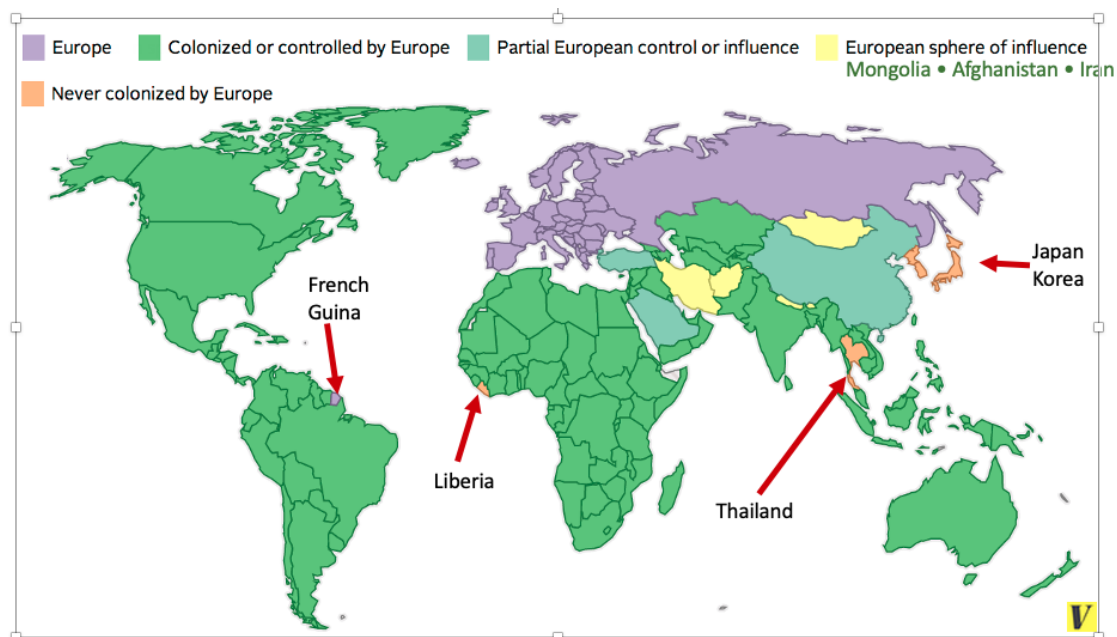
Cultural and scientific innovations have come from people who dared to think and explore in the realm of difference, where difference and new ways opened up thinking to possibilities. But differences have also led to oppression and domination of others. While oppression and domination of others have been motivated by a desire for power, territory, resources, and control, it is often also fueled by a perception of difference as signifying an Other – less than human (as defined in contrast to oneself), or as signifying threats to power. This sense of “different” lies at the heart of racism and subjugation of others as a fundamental structuring principle at the root of systemic inequities.

Difference-Based Power Dynamics

The world has developed in waves of interactions rooted in perceived differences. As people come into contact with another group, the differences immediately set up a binary structure (US-THEM) articulated in power dynamics. Those who are not like us are Other, and sadly often, less than us.

Conquest and subjugating of the "Other" is millennia old and part of global cultural histories.

In the modern world, one pattern has been European subjugation of all others. The map below shows colonization in modern times through the 20th century. Only the 5 indicated countries were never colonized or significantly influenced by European power. Note that there are different perspectives on which countries were not colonized depending on different definitions of “colonize”. If colonization is complete governance, then nations like Iran, Afghanistan, and Ethiopia were not colonized. This map shows colonization and partial control or influence and illustrates the magnitude of European impact on the world.



[Map Source](#)

Legacy education – Grounded in a Eurocentric metanarrative.

The magnitude of European expansion, economy, and military power through the 18th and 20th centuries brought with it a single perspective that defined progress, development, and modernity through a Eurocentric lens and established current global infrastructure and interaction. This idea of progress is rooted in European developments of science and industry from the Enlightenment period that played a large role in the emergence of our industrial production economy and global social systems and infrastructure. Hence, current world "norms" are based on Eurocentric perspectives and European exceptionalism, the idea that European ideals, values, scholarship, science, industry, and arts are singular truths and hallmarks of human achievement, thus defining "mainstream" and "normal".

But this is just one story or perspective. There are other stories that reveal a different reality.

Early innovations and leadership of other civilizations seeded much of the world's collective knowledge and wisdom. Here are a few other examples of innovations and developments from non-European parts of our world – do you know of other cultures and their knowledge innovations?

- China (paper, printing, gunpowder, compass ...)
- India (medicine, the concept of zero, astronomy ...)
- African nations (metallurgy, medicine, mathematics ...)
- Middle East (glass, philosophy, music, the first university ...).
- South Americas (astronomy, calendars, architecture ...)

The first university in the world, Al-Qurawirynn, was established in 859 CE in Fez, Morocco and still runs today. The founder was a woman, Fatima al-Fihri. In Europe, the University of Bologna was founded in 1088 CE, and Oxford in 1096.

There is a telling irony in knowing that the Holy Crusades between the 11th and 13th centuries created contact, exchange, and trade with non-European civilizations that expanded knowledge and technology development in Europe as part of its flowering or Renaissance. Medical knowledge, the concept of zero and the Arabic place-based numbering system were among some of the many ideas integrated into European thought from as a result of the Crusades.

And yet, much of this is absent in narratives of science and innovation. The dominant mapping of human civilization has been a cartography based on European epistemology and ontology. This led to a model of "modernity" and "progress" rooted in concepts of European exceptionalism which set up binaries of perception and power, othering and marginalizing notions such as blackness, indigenous, and primitive. The "third world" or "developing nations" are seen as less than the rest of the world as measured by currency, technology, and industrial infrastructure, but this ignores and negates the highly developed richness of cultures, histories, and non-European modes of living and being. Singular, hegemonic narratives effectively devalue, marginalize, silence, and erase other perspectives. And this goes on long after overt colonization might seem to be over. Dominant stories or systems of thought and assumptions impose a way of thinking that erases a sense of self, agency, and imagination.

What do you think have been the consequence of this in the contents and methods of scholarship and teaching in your discipline?

Watch: [The danger of a single story](#) [19:16 mins] – Author Chimamanda Ngozi Adichie speaks to the effect of dominant narratives and the importance of taking a plural view.

"Stories matter. Many stories matter. Stories have been used to dispossess and malign. But stories can also be used to empower and humanize. Stories can break the dignity of a people. But stories can also repair that broken dignity. When we reject the single story, when we realize there is never a single story about any place, we regain a kind of paradise."

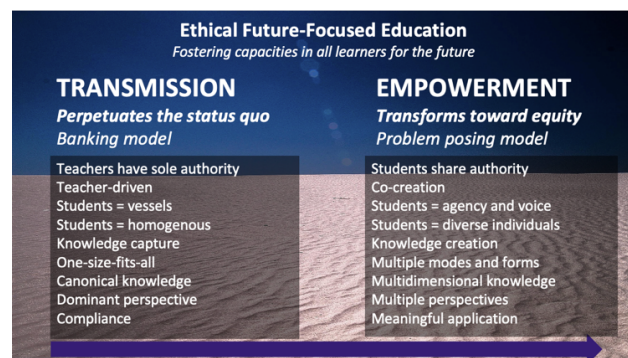
The stories we experience – in the contents of our subjects, the methods used, the perceptions of learning and learners – shape how we engage and learn.

Legacy education – Reflects an industrial model of schooling.

The structures and processes of legacy education also reflect an industrial model of efficiency, homogeneity, linearity, and compliance, leading to a mechanistic transmission approach to knowledge and learning.

Watch: Music Video. [We don't need no education](#). [6:00 mins] British rock group used the factory metaphor in their music video critique of education in their album *Another Brick in the Wall*. 1979.

While this is more starkly the image of K-12 education, many assumptions about teaching and learning from the transmission model shape college teaching practices.



[Image source](#)

Legacy education – Inertia and misalignment to current and future contexts

“Even as all this change occurs, there are those who argue that the core concept and method of universities will not radically change. They argue that mostly unfulfilled predictions of significant improvement in the effectiveness and wider distribution of education accompany every major new communication technology. In the early days of their evolution, radio, television, personal computers—and even the telephone—were all predicted to be likely to revolutionize formal education. Nevertheless, the standardized knowledge-transmission model is primarily the same today as it was when students started gathering at the University of Bologna in 1088.”

Anderson, J., Boyles, J. L., & Rainie, L. (2012, July 27). [The future of higher education](#).

Legacy education is deeply rooted in the status quo in assumptions of teaching and learning and misaligned to current and future contexts:

- It perpetuates narratives in its contents and practices based on a mostly Eurocentric canon.
- Infrastructure, policies, practices, and the assumptions underpinning them are not congruent to the diversity in current student populations and their lived experiences and contexts.
- Many practices are based on industrial age assumptions of efficiency, homogeneity, mechanization, and compliance in learning and teaching.

Even as many elements change in all the systems within which education is embedded – architecture, technologies, new services, policies etc., - and especially technologically mediated global systems that are rapidly shifting and changing, the system of education has been slow to respond and adapt.

Significant paradigm shift: The decentering of Eurocentric narratives

European exceptionalism and domination marked the 19th and 20th centuries. However, (and somewhat ironically), the 18th century European industrial revolution and resulting developments in the 20th century set the stage for significant paradigm shifts away from this Eurocentric centrality.

The game-changing technology was the digital revolution and the internet. Digital tools connect us in an inextricably linked global network of diverse identities, histories, ways of being and becoming, thinking, connecting, communicating, and acting. This together with social and political movements for human rights and freedom have de-centered and dismantled Eurocentric models. Having access to a plurality of ontologies and epistemologies, we can question the paradigm of a single story. In *the Postmodern Condition* (1979), [Jean-Francois Lyotard](#) described this stance as “an incredulity toward metanarratives”.

In questioning dominant narratives - racism and colorism, capitalism, anthropomorphism etc., we take a systems view, recognizing a decentered, non-binary, and interconnected set of perspectives and possibilities. we see a decentered system of diverse possibilities that can help

us flourish in new social-global ecosystems if we can overcome our fear of difference and change, and our historical hunger for singular dominance that creates a seeming stability.

As a result of this decentering, we can recognize and embrace multiple identities that people around the world embody. Here is an alphabetical list. Can you add more dimensions?

- Ability – Disability
- Class
- Citizenship
- Ethnicity
- Generation
- Gender
- Language
- Physicality
- Race
- Religion
- Sexuality
- Social Roles (given and chosen)

We will explore identities and complexity further in a later chapter.

Story: Here is a story about change and the misalignment of education with current times. This story was told by Professor Alan Luke, Queensland University Australia, at the International Reading Association Conference in 2001.



Imagine a time traveler, plucked out of the 1650s and thrown in an instant into the middle of Times Square, New York City. Looking through his eyes and mind, there is nothing at all that is familiar; the city sounds of traffic, smells of automobiles, the pace of movement, the materials in steel and glass clad buildings, the colors and textures of people's clothes, the shapes of bags, the alien vehicles moving at what will seem like dizzying speed. Even the gaze and faces of people will seem alien.

This person could very easily go instantly, screamingly, mind-crushingly insane.



BUT What if this time traveler by chance happened to be flung into a classroom in the Bronx? The clothes would still be different, and maybe there is a woman instead of a man up front. But there would be enough there to recognize the scene; tables and chairs in rows, authority figure up front (must be teacher), people in the seats facing forward (must be students) ... I'm in a school room!

The world has changed radically in 300+ years, but schooling ... not so much!!

Why is this? Why is there such a resistant force in education? What would it take to change fundamental assumptions, values, and beliefs?

Mapping Education as a System

In this section, you will begin applying your understanding of systems to unpack and analyze legacy education as a system.

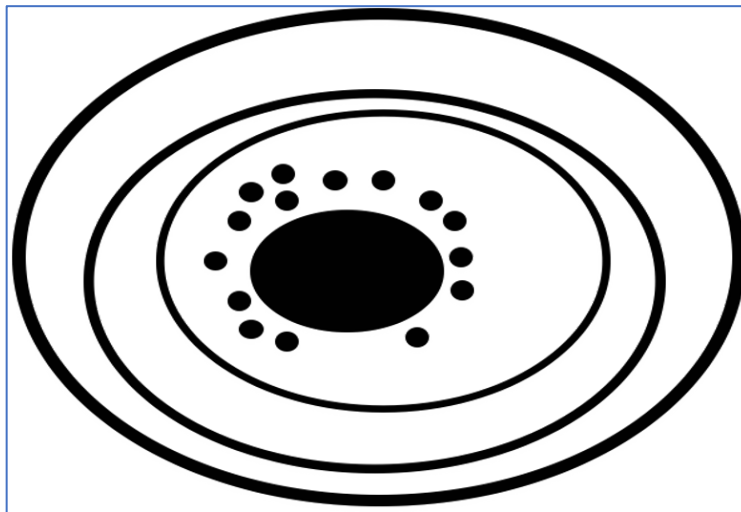
Elements in a System

“A system isn’t just any old collection of things. A system is an interconnected set of elements that is coherently organized in a way that achieves something. If you look at that definition closely for a minute, you can see that a system must consist of three kinds of things: elements, interconnections, and a function or purpose.” Meadows (2008) Thinking in Systems

Think of education as a system. Keep in mind the key nature of the legacy system of education – it’s been around for over 200 years for a population of learners that no longer represents current learners, and it was designed to prepare people for a very different world.

Task 1. Visual storytelling: Represent the elements in a system

Here is an abstract sketch of a system. Use this as a representation of the system of education. Label the parts (the dots and lines) and the white space.



- **Begin by naming the central large dot.** Remember that there is no actual singular middle in systems – we are using this structure as an exercise to pin down what we each as perceivers would put in the center.
- **Name all the other elements** – what are the smaller dots, what do the lines mean? What about the white space between the lines?

For this task, do not add or remove anything from the abstract framework you have been given.

Task 2. Visual storytelling: Map and analyze the education system

Now that you have explored the elements in the system, go on to create a systems map. As a systems thinker, analyze the parts of the education system to understand it as a whole and to analyze where the barriers now are for different populations of learners.

1. **ELEMENTS** - the things or "stock" in a system. These comprise objects, living beings (people, animals, plants), spaces, ideas (law, policies, social norm), assumptions, practices etc.

Make a list of the elements in the system of college education.

2. **INTERCONNECTIONS** - the ideas, relationships, rules, norms of how things work that link elements to each other. In a system, everything is fluidly connected to many other things as cause-effect, or to block, amplify, enable etc. As one element affects another, that causes a "flow" or reaction among all the connected elements, which creates further shifts and adjustments. Larger and smaller reverberations travel through the whole system.
 - Sketch the interconnections between the stocks in the college education system. Sketch a mind map. Trace how they affect each other - which elements affect others, what positive and negative outcomes happen. What barriers and inequities does this map reveal? What assumptions and practices dominate? What does the map NOT show? Whose stories and contexts are erased?
3. **PURPOSE.** "As important as purpose and goals are, we almost always take them for granted. When you change them, systems fundamentally change."- [Andrew Hening. Systems Thinking Part 1. The Medium.](#)

Each system has a function, often to seek equilibrium and sustain itself. In nature, ecosystems respond to change to rebalance and find new equilibrium. Social systems are "mission driven", though for the most part, the purpose is taken for granted, deeply conditioned, and assumed - why play if not to win the game, why argue if not to win the debate, why teach if not to test that they have learned? But these are not *a priori* logic; they are assumptions from contexts, histories, and lived experiences. So, it's possible to have a different purpose. For example, in some cultures, the real purpose of playing a game is interconnection not winning. Players might help the other team as needed -which is mind-boggling to those from a western culture where the purpose of playing a game is to win.

What is the mission (or missions) of college education? Consider aspirational ones (what we think it ought to be) and the actual purpose the system seems to have. What deep conditioning or assumptions drive the system? If you could determine the purpose of education, what would that be, and what of the current conditioned thinking must change? Looking at the elements and interconnections you brainstormed; what is missing, what can be added, or must change to reimagine and transform the purpose of education?

Systems thinking and mapping reveal the complexities inherent in any context or issue and prevents us from over-simplifying something by linear, sequential thinking.

In education, systems maps help us identify the multiple sub-systems and elements of the system. This helps us to analyze and reveal the deep conditioned assumptions and practices that cause inequities. As a result of engaging in systems thinking, we are better able to dismantle transform elements and processes that exclude, marginalize, and oppress learners and learning.

Systems thinking informs our developing philosophy of practice. When we can see the big picture of the work that we do, the existing legacy education system within which we work, we can develop our own intentional purpose and method in response. When we recognize and can identify injustices as a network of interconnected causes and contingencies, we are better prepared to work transformatively to address injustice.

Systems thinking is also a useful transdisciplinary skill to learn beyond this course. Thinking in systems and visualizing how elements and ideas are located in relation to each other and how they connect is useful for scholarship and professional practice. Think for instance how a literature review might be approached and illuminated by mapping the research landscape around a big question.

Systems Mapping Tools

Here are some useful resources to help you explore methods and tools.

Creating Systems Maps

- **About systems mapping. Leyla Acaroglu** is a systems thinker and teacher of systems thinking. This webpage on [Medium has some very useful tips and approaches to drawing a systems map.](#)
- **Drawing Systems Maps. Open University.** These [video tutorials explains how to draw spray diagrams](#) (like mind maps) to explore ideas. This webpage also has a list of other short videos on systems thinking and mapping.

Mapping Tools.

There are some excellent mind mapping tools out there ... many free! A good one to use is

An [article on Medium by Darko Atanasov](#) reviews some other tools and presents what they do and their pros and cons. He looks at: iMindQ, Coggle, Mindomo, Mind42, Bubbl, Mindmeister. Check them out and think about which one you can use easily.

Resource: Six Ways of Thinking and Acting in Systems in Teaching

Systems Thinking helps us look holistically at situations to engage deeper structures, interconnections, and purpose as part of creating significant change. Here are some characteristics of systems thinking by that are useful in thinking of pedagogy transformation.

1. **From parts to the whole:** You might know this as the whole is greater than the sum of its parts.

In pedagogy: Rather than focusing on elements alone - the students' grades or behaviors - we can consider the full contexts of the students' complex identities, histories, and lived experiences. This shifts perceptions from the simple labels we attribute to certain behaviors (a 1-1 causal logic) to a holistic contextual analysis (a many-many inter-causal logic) that enables us to surface and address hidden barriers.

2. **From elements to interconnections.** Systems thinking focuses on relationships and interactions between elements – to interaction norms, dependencies, and inter-effects. This reveals where injustices happen and therefore where potential for significant change resides.

In pedagogy: For example, a legacy norm we use in thinking of class participation as speaking up in class. But systems thinking shows this is not just about ability and motivation, but affected by patterns of language, culture, social acceptance, shyness etc. This helps us shift assumptions about participation and find different ways to engage learners. On a larger scale, the linear connection between SAT scores and college admissions has been shown through systemic analysis to be a complex interaction of multiple social factors and not just ability. This has moved many colleges to take a multi-factor admissions approach rather than a heavy reliance on test scores.

3. **From objective knowledge to contextual knowledge.** The above 2 principles lead to placing importance on context in all aspects of education from course design to policy change.

In pedagogy. Contextual thinking disrupts homogenous thinking; we see there is no such thing as a “typical” student or class. Contextual knowledge is fundamental to seeing, embracing, and working with diversity. Therefore, we seek pedagogies that disrupt and abandon the one size fits all model with teacher as central expert. We develop pedagogies that create context meaningfulness, student autonomy and agency, with the teacher as guide and facilitator of a diverse set of unique individuals.

4. **From quantity to quality.** Dominant western science privileges quantification of measurement. [Brene Brown](#) famously said that she was taught to think - if it cannot be measured, it does not exist. And yet, much of human experience is phenomenological, embodied, and unquantifiable. Systems thinking integrates quantity and quality as co-existing phenomena.

In pedagogy. Systems thinking in teaching moves toward including qualities like curiosity and imagination, learning joy, risk-taking as critical capacities. This means we ask how we can put aside traditional testing and use other means to make these capacities visible, for example through portfolios, observation, reflections, art expression, and conversations.

5. **From structure to process.** Systems thinkers prioritize processes within structure as the space for real learning. Structure is important as a guide. But the focus of action is in the processes within the structure.

In pedagogy. In equity-minded teaching, systems thinking regards learning-teaching processes as context-bound, developmental, and emergent. Learning and teaching includes trial and error, agile response, feedback and transformation. Especially important in process-approaches is attention to students' identities and contexts, agency in learning, and multiple modes of expression, communication, and representation.

6. **From contents to patterns.** Systems thinking is attuned to patterns and rhythms of interactions and connections such as cycles and feedback loops because we know there is never one single cause for a problem.

In pedagogy. In equity-minded practice, systems thinking helps us see patterns of contexts, history, and practice that amplify barriers for some learners. Understanding patterns helps us strategically shift them to remove barriers. For example, in understanding issues of STEM education access and success for transgender girls of color, we see intersecting patterns of gender, sexuality, race, STEM culture, history, stereotypes etc. Systems thinking can help us address this pattern at multiple points (teacher education, STEM curriculum contents, interventions with cisgender white men, STEM policies, STEM industries) rather than linear interventions (such as teaching grit to girls of color to survive math culture!).

Reflect: On being a systems thinker

1. In what ways are you already of systems thinker – how aware have you been of the large patterns of systems in general, and the legacy education system in particular?
2. As a scholar, professional, and educator, why is this knowledge of systems as dynamically interconnected and shaped strongly by power dynamics and interpretation important? How might it be useful your research and practice?

Reflect: The legacy education system

1. What assumptions, values, and practices did you experience in your own schooling that are characteristics of the legacy education system?
2. What are some ways in which your schooling experiences – especially in college - were in the industrial, transmission mode? What are some key areas education needs to adapt to be more aligned to current and future contexts?
3. What do you think have been the consequence of the Eurocentric narrative in the contents and methods of scholarship and teaching in your discipline?

Further Exploration

Meadows, D. (2008) *Thinking in systems. A primer*. Chelsea Green Publishing.

A great primer on how to develop your ability as a systems thinker in approaching and addressing complex issues in the world. This book also is great in developing skills in creating systems maps.

Capra, F. & Luisi, P. L. (2016) [*A systems view of life. A unifying vision*](#). Cambridge University Press

This book integrates theories underlying systems view of life into a strong framework that illuminates complexity, networks, and patterns in multiple disciplines. It offers a history of the emergence of systems thinking and the interconnectedness of all life.

Capra, F. (1997) *The Web of Life. A new scientific understanding of living systems*.

One of the early books that integrated complexity and chaos theory, ecological sciences, and social systems research to present a perspective on the intricate and undeniable interconnectedness of human and natural systems.

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Chapter 3- Intentional Systems Change

Systems and complexity thinking to disrupt dominant narratives for transformation and innovation

In Chapter 2, you explored systems thinking to understand the complex, interconnected nature of human systems, especially with the insertion of consciousness and volition into systems dynamics. You looked at how human responses to difference created systems of domination and power that perpetuate dominant narratives that resist change. In education, this created legacy system misaligned in many ways to current and future learners and contexts. A systems view helps us avoid and disrupt singular dominant narratives.

In this chapter, explore paradigm shift to understand legacy systems and the dynamics of change, resistance to change, and transformation. You will meet a reflexive analytical framework – Cynefin (pronounced *KE-NE-FIN*) – that will help you understand multi-ontology thinking or the ability to sense-make the type of order and change in a situation in order to make decisions and respond. Cynefin is a great tool to help us engage in reflexive thinking to question our habituated and conditioned thinking, to understand how and why people resist change, and how we can work adaptively and responsively in shifting the legacy paradigm or system.

Paradigm

Your paradigm is so intrinsic to your mental process that you are hardly aware of its existence, until you try to communicate with someone with a different paradigm. - Donella Meadows

A paradigm is a deep perspective, a way of thinking, or lens through which we view the world and that affects our responses and actions and understand. “Paradigm” comes from Greek *paradeigma* – meaning “pattern, model, or precedent”

- **Our paradigms comprise established and bounded knowledge and sets of rules or norms** that we learn through explicit instruction and/or lived experiences. Scientific paradigms are learned through instruction within a bounded set of ontological-epistemological principles. The paradigm of positivism is grounded in an ontological-epistemological position of a single objective reality that can be measured, while constructivism comes from an ontological-epistemological position that there are multiple realities that must be interpreted. Socio-cultural paradigms shape our social roles and norms for example the paradigm of parenting, or practices surrounding birth and death, or determinations of what is Literary or Artistic.
- **Paradigms have a gatekeeping process that perpetuates it** and keeps it stable. These can be formal disciplinary experts or informal social opinion and actions. Experts validate approved methods, research studies, and ideas through formal structures such as journals and conferences, and scholarly or expert positions. Informal gatekeeping is done through cultural and social opinions of social leaders like fashion and music experts, public opinion, and institutionalized cultural structures such as religious

institutions, museums, and cultural rituals. This gatekeeping is also responsible for the perpetuation of dominant paradigms such as the legacy education system, or paradigms of what constitutes good art, or “proper” language.

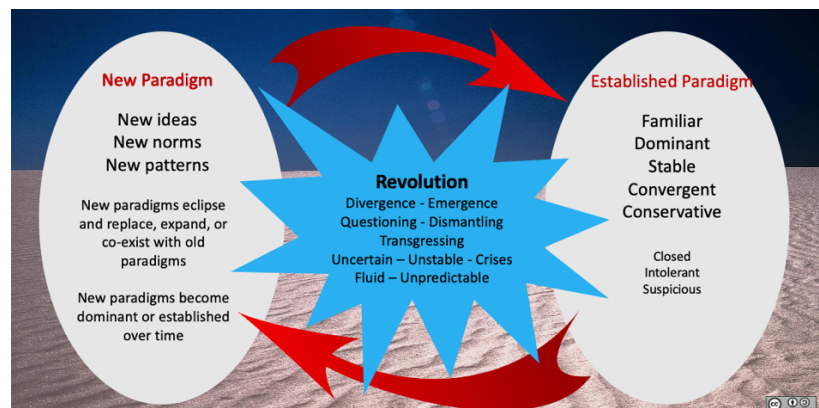
- **Paradigms can be viewed as worldview systems that can change.** A paradigm is made up of multiple ideas and concept that are interconnected dynamically to create a coherent way of thinking and responding. In this sense it is a thought-system. Therefore, in changing the thought-system around something, we can engage in a kind of paradigm shift.

Paradigm Shift and Transformation

A paradigm shift is the best a scientist can hope for. Whenever I smell an opportunity like that, I go after it. You have a new discovery that something's working in a different way than you thought. E. O. Wilson

Thomas Kuhn, physicist and philosopher, presented the concept of paradigm shift in his 1962 work [*The Structure of Scientific Revolutions*](#). A paradigm shift is a fundamental or profound change that dismantles the foundations of method/practice and basic concepts or ways of thinking. While Kuhn applied this to the practice of scientific method, the concept can be broadly applied to social systems of thought and practice. Paradigm shifts could have a physical cause (natural disasters, wars, pandemics etc.), or result radical shifts in thought and knowledge (discovery of quantum reality, emergence of antiracism and other human rights, new methods in art - Impressionism, Modern Dance, Jazz etc.).

According to Kuhn, there are 3 phases.



Note: For our purposes, we do not need to get into the weeds of the philosophical debate between Kuhn and Karl Popper, another philosopher. If you are curious, you can read a [summary of the debate](#). A useful perspective is that Popper saw science proceeding via falsification while for Kuhn, science proceeded through exemplars within the established paradigm until challenged – entering “revolution” that yields a new paradigm. Can you see how these views are related?

A dominant and established paradigm or “normal” phase.

- Functioning in what Kuhn defined as the “normal” paradigm, we work within bounded or disciplinary norms that are established, where we do not question assumptions of practices. We go by “how it’s always been”, “what the experts say”. We can think of as the dominant story, the legacy narrative, or the status quo. We learn and use research methods, medical treatment, social practices without too much questioning. In some ways, we are conditioned to the deep assumptions underpinning our thought and practice.
- Gatekeepers maintain the dominant paradigm – experts, those in authority and positions of power, those with social influence. These gatekeepers in positions of authority establish rules, norms, and processes within which we live and work.

A “revolution” phase.

- Paradigms can be destabilized. This happens when new perspectives and practices come into play, for example discoveries and new inventions, creative processes, or crises. These new elements call prevailing perspectives and methods into question. For example, Copernicus challenged the geocentric perspective in the 16th century, quantum physics problematized assumptions about space-time and matter, the Civil Rights movement disrupted deep social and political assumptions about race and human rights, Gandhi resisted the paradigm of colonization, Van Gogh and other Impressionists questioned the paradigm of Realist art.
- A common resistance to difference is that the established narrative or paradigm is defended as correct by those who have power in it – the gatekeepers and the dominant majority – and to reject the new or contradictory as “abnormal” –aberrance, anomaly, or just wrong. Pioneers of new ideas and perspectives are often rejected.

“[p]eace that was based on oppression was defended as neutral and natural, and the disruption that was based on justice seeking was seen as the problem” - Kimberle Crenshaw. 2021 [ACLU Interview](#). Kimberle Crenshaw is one of the creators of Critical Race Theory.

A new paradigm phase.

However, if the challenges and counter stories persist and grow, the paradigm reaches a sufficient level of destabilization or fluidity that allows new ideas or methods to take root, We then have a new or expanded paradigm, or co-existence with the old paradigm.

- The geocentric paradigm of the solar system was replaced by the heliocentric paradigm, Newtonian physics was expanded by Einsteinian physics
- Impressionist art became an accepted paradigm co-existing with Realism.

It’s not always so neat in social systems – and it can be dangerous and violent.

- The Civil Rights movement gave rise to a new paradigm for human equity and equality that continues in tension with old paradigms of difference and power.
- Gandhi and Martin Luther King were assassinated.
- Paradigms of women's roles and rights are in continuous tension so that while women in some nations walk easily into education, Malala Yousafzai is shot in the head just trying to go to school in Afghanistan.

The revolution phase as the constant new normal defining the 21st century

The 21st century is an era of significant and complex social changes. A transformative perspective to adopt is that the persisting global paradigm of human interaction is in fact characterized by the revolution phase. This is the new normal, where stability as we used to know it is truly of the past.

Rather than the steady flow of paradigm shift moving from Normal to Revolution to New Normal in succession, change is accelerated to the point where multiple new normals constantly emerge and shift. These different paradigms create a diversity of thought and ways of being and knowing – multiple ontological-epistemological frameworks that jostle together so that we are in perpetual fluid interaction and emergence.

The characteristics of the revolution phase define our new normal paradigm.

Reflect Having read about paradigm shift, what is your biggest takeaway at this point? What resonated for you? What surprised you or was a new thought? What do you bring to this information from your own discipline and lived experiences? What ideas emerge for you about education – justice – and paradigm shift?

Transformation and Social Narratives

Transformation begins in transgressing and transcending old paradigms or dominant narratives, and then actively, mindfully finding new stories – new visions and metaphors based on perspectives for a positive future - that we can put into action.

Stories = Social Narratives

Defining “story” - We “story” our world; our governing patterns of thought shape how we sense-make and act in the world. Our perceptions of reality are not objective; reality is not a given. Rather, what we know and understand are filtered through our subjective selves so that knowing is an embodied phenomenological process. We are immersed in the world as a part of multiple systems - not separate from it - and we construct (or “story”) our realities. Meaning making is not just cognitive - it's an outcome of our whole embodied lived experience that comprises our physical, social, emotional, and cognitive dimensions (Chandler, 2007; Merleau-

Ponty, 1945/2000). Schank (2020) describes this as “reality invention”. For example, when you recount a camping trip, you create a coherent story based on salient events, omitting what you think is irrelevant.

Stories take different forms. They are not always narratives. Socio-cultural stories are contained in images and metaphors, explicit laws and policies, tacit norms of behavior, themes in cultural texts such as books, films, artwork. Architecture is a “text” and story - for example, the symmetry and size of imposing Roman columns used in European buildings for centuries tell a story of heritage and power. Open plan, glass clad homes tell a different story of lifestyle and values compared with cottage style houses with small windows and multiple rooms.

Legacy stories - singular metanarratives

Legacy stories or dominant metanarratives shape society over time, for example, the imposition of Eurocentric metanarratives through colonization and global expansion. In Chimamanda Adichie’s TED talk, she refers to the “danger of the single story”, where dominant stories constrain boundaries and norms for human interaction. As we have seen, dominant stories are established over time, historically rooted in power dynamics based on differences.

Multiple stories or narratives

Postmodern scholars present new narratives about how we know the world, integrating epistemological and ontological diversity (multi-ontology thinking). The idea of multiple narratives especially challenges Eurocentric metanarratives rooted in Enlightenment ideas of the centrality of man, European exceptionalism, western science, and western industrial development. Jean-Francois Lyotard (1984) described this as “an incredulity toward metanarratives”, a sense that a singular view of anything is not the only truth and could not possibly represent the shifting, changing, complex reality where multiple stories jostle together.

We see this postmodern analysis of legacy systems in liberatory pedagogies, post-colonial literature, feminist theory, and critical theory where critique of metanarratives reveals how dominant stories maintain the power and privileges of a dominant group. Using the Cynefin framework, dominant stories prevail in Complicated domain thinking of governing constraints and gatekeeping, and in assumptions that determine sense-making in Clear domain thinking.

A Metaphor for Transformative Work: Cartography and Counter Mapping

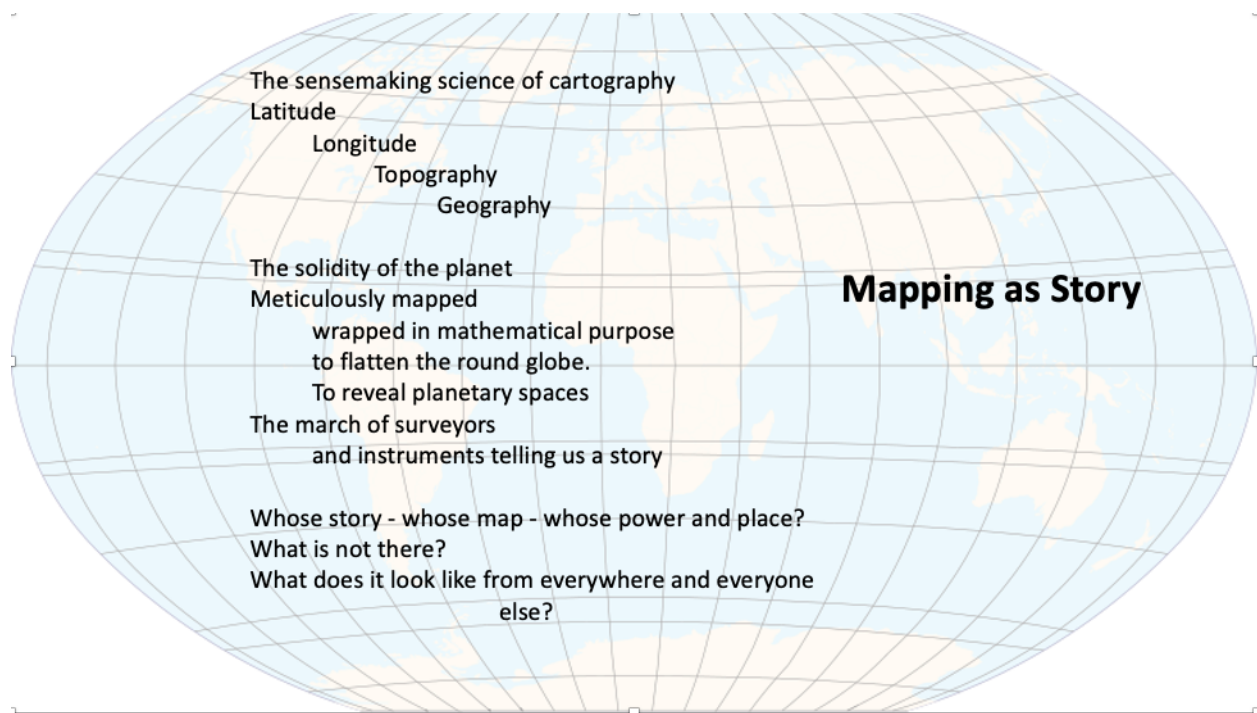
In Chapter 2, you explore mapping the system of education. This section crosses boundaries into Geography to deepen the idea of mapping and counter mapping for transformation, using maps to reflect dominant and alternative stories.

Counter-mapping

Counter-mapping is a way of presenting alternative perspectives or narratives that disrupt and challenge dominant and hegemonic narratives (single stories) that have become status quo, so that we can offer new stories or perspectives.

Counter-mapping comes from Nancy Peluso's (1995) work in contesting official state maps of forests in Kalimantan in which indigenous people were absent. She presented different cartographies of actual land use and perceptions that centered the lives and needs of indigenous forest users. Counter-mapping can inform policy development and governance perspectives. It is used in fields such as radical geography, ethno-cartography, and critical cartography. It is also part of public-participatory mapping and asset mapping in Asset Based Community Development pedagogies that go beyond land. In Critical Race Theory, counter storytelling is a form of counter-mapping.

Here is a poem that tells the story of the hegemony of maps.



[Link to Image Source](#)

Just for Fun Images of Literal Maps and Counter Maps

These counter maps offer new perspectives. By changing the map, we point to what was missing, what could be, a different way of seeing; we bring out a new story.



The long-established Mercator map – is this an accurate representation of the world?

- What “story” does this map tell about land, prominence of nations, and global focus?
- Whose story is it?
- What does it leave out?

Here are some counter-maps or new stories of how we can see the world.



This is the [Autha-Graph map](#) by Hajime Narukawa. It reframes traditional East-West, North-South views, calling attention to the large bodies of water that define this planet and to issues of climate change.



The [Hobo Dyer Equal Area South at Top](#) projection presents accurate land masses and upends the world with the South at the top to query the traditional view that North is always at the top.

If you want to play with exploring the true size of land masses in the world, check out this website: [The True Size Of...](#) created by [James Talmage](#) and [Damon Maneice](#). The app allows you to take a country and move it to compare with another country to get a true sense of size.

Here are some quotes about maps and counter mapping. As you read them, think about the dominant stories of the education landscape and the potential of counter mapping as a way to re-think, reframe, and reinvent education for greater representation, access, and justice.

"Maps... exert a social influence through their omissions as much as by the features they depict and emphasize" - J. B. Harley, 1992

"any effort that fundamentally questions the assumptions or biases of cartographic conventions, that challenges predominant power effects of mapping, or that engages in mapping in ways that upset power relations." This is similar to, but not the same thing as participatory GIS (Elwood 2006). Counter-mapping appears as a response to the consequences of map-based bureaucratic practices and/or culturally derived cartographic conventions.

However, by focusing on the "counter-" this singular definition doesn't highlight the creative, multitudinal central element of "mapping": counter-mapping mixes theory and practice to be productive and generative, a way to open, explore, and realize alternatives to the status quo." – [Dalton & Stallman, 2018](#).

"...cartography and mapping are uniquely sources of power for the powerful ...However, if maps can be seen as one of many "authoritative resources" that states mobilize to consolidate their own power (Giddens, 1984, cited in Harley, 1990:279), then local groups' appropriation of the technology of mapping may help to counterbalance or at least offset the previous monopoly of authoritative resources by the state or capital. This requires understanding the social and political contexts within which maps are used by local groups. Just

as inclusion and exclusion are powerful political tools used by states and state-legitimated organizations to control and allocate resource access ... local groups can claim power through mapping by using not only what is on a map, but what is not on it. One effect of having multiple maps of a single forest, for example, could be to challenge the accuracy of a "standard" map used for planning." - [Nancy Peluso. 1995](#)

"Maps themselves are stories: They're simplifications, distillations, and interpretations of a hugely complex world. Maps provide meaning and context; they reveal patterns and relationships." - [Allen Carroll. ESRI](#)

CASE EXAMPLES: Paradigm shift and entering “new normals” with new stories

The COVID pandemic of 2020 caused radical shifts in multiple domains of life. People adapted. Typical of paradigm shift, many innovations, while addressing immediate problems, also raised new and hidden issues that point to deep assumptions in our pre-pandemic life paradigms.

Work and Home Life

- **Innovation:** Remote work, worker autonomy, home delivery, curbside pick-up.
- **Positive Impact:** Cost savings, increased effectiveness, improvement in work-life balance and time for wellness, more family time, lower commuting costs, lower commuting impact on the environment, lower space and utilities cost for businesses...
- **New issues:** virtual meeting fatigue, professional isolation, home-work space availability, privacy, work-life boundaries, technology access and consistency,
- **Questioning pre-pandemic practices and assumptions:** Definitions of supervision and worker autonomy, efficiency, and effectiveness measures, working hours definitions, expectations of presence at the workplace

Art Galleries and Museums

- **Innovation:** Artists’ online sales and peer support, online exhibits and artists talks, virtual walk-throughs.
- **Positive Impact:** Broader viewership and sharing, community formation, cooperatives and collectives, open access - taking away traditional barriers to art
- **New issues and questioning assumptions** in the process and production of art, audiences, and the role of art. Artists’ workspaces and sustainability of practice, equity - art as an elite practice and industry, definition of art audiences, publicity, and communication methods

Conferences

- **Innovation:** Virtual conferences
- **Positive Impact:** Broader access - Lower prices, diverse audiences – from local to national to global - taking away traditional barriers to scholarly exchange
- **New issues and questioning** assumptions about scholarly sharing, audiences, cost expectations - Conference industry business loss, loss of informal face to face connections in tension with costs savings and broader access

Education

- **Innovation:** Online teaching – integrating multimedia that is easy to access.
- **Positive Impact:** Integrating easy to access digital tools, asynchronous teaching allowing students flexibility in managing workloads, awareness and action for wellness and care
- **New issues and questioning** assumptions that have shaped legacy education

- The relevance and injustice of timed and proctored exams, compliance-and contract-oriented design - student motivation through external factors of punishment and rewards, the primary of read/write modes of instruction and learning

Transformation is not always welcome – Resistance to paradigm shift

The COVID pandemic plunged us first into emergency mode; we had to pivot - move fast and adapt - so that we could continue teaching. We leapt into online teaching and learning.

As with any emergency, many educators adapted effectively and transformed learning and teaching. Many adaptations came not only from the need to pivot to online modes, but from the stark visibility that the crisis created of social injustices and how they impacted education. There was a growing recognition of student diversity, life contexts, and home situations. We saw that many digital age norms some experiences are blocked for others. The central importance of social-emotional wellbeing and care for learners and teachers rose to the surface. Teachers and learners innovated by:

- Creating hybrid ways to learn combining asynchronous and synchronous activities to create flexibility for students and teachers to access and engage.
- Integrating digital tools that are easy and free to access and use.
- Rejecting timed and closed books exams to eliminate intrusive online proctoring.
- Using portfolios and project-based learning to work better with asynchronous modes.
- Using multiple modalities and methods to support students to engage and participate at their comfort level and in multiple ways.
- Integrating wellness and care into learning processes and spaces.
- Using Open Educational Resources because they are easier to access online - which therefore also took away expensive textbooks
- Ending traditional isolation of teachers to collaborate to share ideas for online teaching.
- Ending traditional learn in isolation with group and sharing through social media.

However, as with many social paradigm shifts, new stories of teaching and learning while forming a new paradigm of education, co-exist with the legacy paradigm of education. Many – or more? – teachers who were forcibly moved into online teaching replicated the same legacy methods, not seeing the transformative potential to change the paradigm.

- Maintaining the time structures of full days of classroom attendance – that ignored the critical difference and harm of doing that in constant online video sessions.
- Massive homework loads to “make up” for lost instruction time.
- Maintaining high stakes testing in closed-book timed exams in online spaces using proctoring software that ignored the added layer of digital stress and surveillance.
- Maintaining assumptions and expectations of participation as “speaking up” in class and quiet learners as disengaged.
- Maintaining long lectures with passive listening as the primary mode of teaching.

Can you think of other positive innovations that shifted the legacy education paradigm toward including more learners and taking away inequities? Conversely, can you think of other ways in

which some educators persisted in continuing harmful and ineffective legacy education practices?

Why do you think some educators resist the transformative potential of change?

Connecting to the larger world. Outside of education, the same tension exists between paradigm shift and resistance to change. Here are some examples. Again, ask yourself - why do people resist moving to a new normal and cling to life as it used to be?

1. **The planet.** Our carbon footprint dropped significantly during the pandemic lockdown with less air travel and use of cars, less use of office and retail space, and less impact on the massive utilities' costs of workspaces etc. People shared pictures of smog-less freeways, and cleaner waters around the world. But do we have the imagination to keep our carbon footprint down or return to old levels of massive consumption? Will we keep offering virtual and hybrid modes in many sectors of life to maintain broader affordable access and reduced travel? Will previously costly conferences involving time commitment for travel maintain their pandemic options of virtual presentations and attendance at lower cost? Will organizations move toward new ways of remote and in-place work conditions that are more holistic while also being productive?
2. **Families and communities** found ways to connect and interact using both virtual apps and innovative use of community spaces. Will we have the imagination to continue this and maintain connectedness and neighborliness even as we return to physical social connections? Will community meetings offer a range of options for those unable to engage in traditional ways?
3. **Business-community interaction.** Businesses showed a greater social responsibility in supporting homeless and hungry people during the pandemic. Will they now integrate some of this as they go forward as part of normal business practice? Or will social responsibility decline as we get past the pandemic?
4. **Social issues.** Businesses, governments, and people in communities saw the dark sides of racism and other oppressions revealed through the social protests and activism along with the pandemic and many joined in solidarity to support a movement for change. The massive crisis of conflict and refugees created awareness of forced human mobility that galvanized efforts to help. Will we continue the effort for a new paradigm of social awareness and responsibility with collective social action without being distracted by a false sense of "return to normal"?

The paradox of change and the opportunity to transform for justice

A desire to “return to normal” exists in tension with paradigm shift and transformation. A common phrase we hear in a crisis is “getting back to normal”. This is a natural and immediate thought as a crisis ebbs away and we emerge from functioning in crisis-mode. We are tired and feel eager to get back to the comfort and stability of how things were, to restore what we had. And yet, change is a constant pattern of existence, attributed in Greek thought to Heraclitus’s metaphor of a river and his concept of *Panta rhei* – everything flows, and in Buddhist thought to the doctrine of *anicca* or impermanence and constant change.

Our attraction to and fear of change comes from its paradoxical nature:

- **Change can be exciting and exhilarating.** It opens new spaces for thinking, new ways to do things, the potential for innovation and growth. It means exploring and discovering, connecting with new things. It invites imagination and creativity.
- **Change can be discomfiting and frightening.** It means uncertainty and instability, the dissonance of letting go old, familiar, tried, and tested things we’ve always done. New ways might be uncomfortable and tiring. It can feel threatening.

However, in resisting change and going back to things as they were we ignore the following.

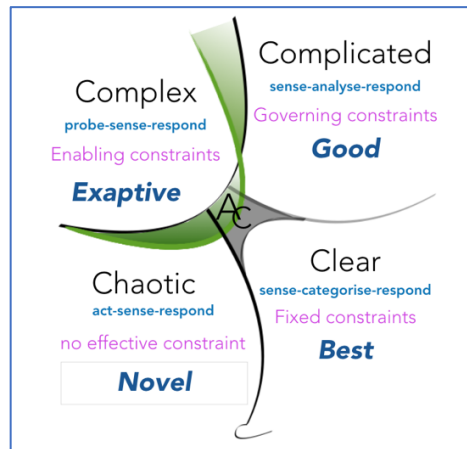
- Irreversible shifts. We and our worlds are no longer the same. In education, the pandemic crisis illuminated and sharply surfaced another crisis – the long, slow-burning crisis in education, of injustice and misalignment that has been taking place for a long time in ways that were invisible to many. The crisis of climate change is similar; it’s not yesterday’s phenomenon but has been unravelling since the middle of the 20th century.
- Crises open up new possibilities. The innovations in handling crises reveal things we did not think of before, questions how and why we did things in a certain way before, opens imaginations to new potentialities, and brings innovations in how we think and act.

Indian author, [Arundhati Roy](#), writing about the pandemic and its resulting changes, uses the metaphor of a portal, a threshold through which we walk into a new world

“Our minds are still racing back and forth, longing for a return to “normality”, trying to stitch our future to our past and refusing to acknowledge the rupture. ...But the rupture exists. And in the midst of this terrible despair, it offers us a chance to rethink the doomsday machine we have built for ourselves. Nothing could be worse than a return to normality. Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it.” – Arundhati Roy. [The Pandemic is a Portal](#).

Cynefin. A Framework for Transformative Work

In this section, you will explore a framework that explains how legacy systems and deep paradigms of thought work and why we have so much transformative resistance. This framework also clarifies how complex thinking generates innovation and transformation and gives a powerful tool for reflexive, transformative work that is adaptive and context sensitive.



The framework is called CYNEFIN – a Welsh word that best translates as “habitat” or a ground. It means a place from which we know or “ken” our world. Cynefin was developed by Dave Snowden, a researcher and change management expert who developed this framework for sense-making and decision making that engages interpretation from multiple perspectives. If you work with evaluation sciences, you might recognize a version of this framework developed by [Michael Quinn Patton in his approach to developmental evaluation](#).

The framework is both ontological and epistemological:

- **Ontology** – what there is out there in the world
- **Epistemology** – how we come to know.

Watch: [An Introduction to Cynefin](#). [4:07 mins]

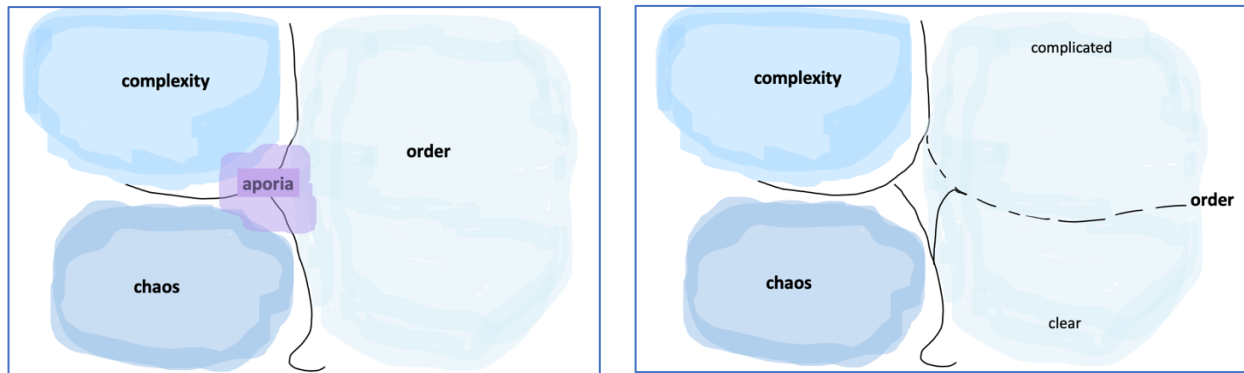
Jennifer Garvey Berger explains Cynefin as a framework for leaders in decision making. Note that she uses the term “Obvious” for one of the domains in Cynefin. Dave Snowden recently changed this to “Clear.” However, the principles remain the same.

Cynefin helps us develop multi-ontology sense-making so that we can draw on appropriate ways of making sense of the patterns of thought in a situation and respond appropriately. It’s a great reflexive practice and change management tool, helping us understand and avoid habituated or deeply conditioned thinking in our work and in working with others and especially with legacy systems.

Cynefin – one domain at a time

The following notes expand from the video to take you into each domain – Aporia, Clear, Complicated, Complex, and Chaotic in turn.

First, meet the 3 types of ontological systems we encounter in the world – Ordered, Complex, Chaotic – each one defined by the level to which it is bounded or constrained, i.e., predictable cause and effect.



Order – There is established knowledge with clearly bounded or constrained norms. There is predictable cause and effect. Things are repeatable and generally consistent and stable. It is easy to set goals with predictable outcomes. There is a conserving logic that resists change.

Order can be divided into 2 domains:

- **Clear:** Characterized by rigid constraints; cause and effect are fixed, repeatable, predictable. There is complete stability. We can easily sense – categorize – respond. Our responses are self-evident. Here, things seem to be context-free; we do not change anything even if contexts shift.
- **Complicated:** Characterized by strong governing constraints of well-established knowledge and practice. Causal relationships are present but not as self-evident, hence often needing experts and analysis to trace them.
- **Complexity** – Everything is dynamically interconnected. This domain is characterized by high uncertainty and unknowns, less predictability (surprise and the unexpected), multiple possibilities. Things do not repeat in the same way. The interconnected and potential nature of this domain are enabling constraints, parameters within which things adapt and emerge. Creativity, change, and learning are part of the dynamics of this domain.
- **Chaos** – Things seem random with no constraints – intense periods of crisis. This domain is characterized by very rapid change, no seeming predictability, and unfathomable uncertainty. We have to act immediately and decisively first to contain the situation; this is a space of crisis and triage.
- **Aporia** – is a liminal space that is part of transitioning between domains. It is where we are aware that we do not know which domain we're in, hence a space of

reflexivity where we stop assuming and begin questioning assumptions to understand where we are and what we can bring to our decision making.

- **Note that this is a framework – not a model or method.** The framework helps us recognize that thought and actions – especially in addressing problems - are embedded in contexts. We use the framework to determine how we should act, what methods or approaches to use that align with and are effective for the contexts at hand rather than blindly applied.

Aporia



It is “where we are betwixt and between the familiar and the completely unknown. There alone is our old world left behind, while we are not yet sure of the new existence. That’s a good space where genuine newness can begin. Get there often and stay as long as you can by whatever means possible” - [Richard Rohr](#), Founder. Center for Action and Contemplation.

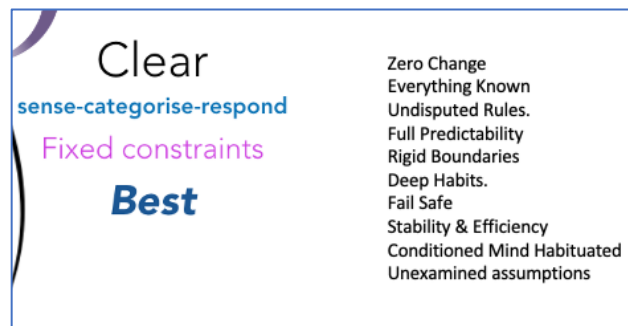
Aporia is a liminal space. “Liminality” comes from the Latin – “limen” meaning “threshold”. It signifies a point of starting into exploration, discovery, and learning. In a liminal space you are in transition, entering something unknown and waiting as part of moving into exploration.

We often begin in Aporia or enter Aporia in problem finding and problem solving – because this is where we are when we first attempt to sense-make a situation – we are aware that we do not have all the information, possibly no information. And things might seem entangled and contradictory.

This is a liminal space, and we are aware that we do not know. We embrace contradictions or paradox rather than try to avoid them or force contradictions to make sense, i.e., we allow the messiness of a situation to emerge. This reflexive openness enables us to explore from multiple perspectives, modes of thinking and knowing, in order to find new ways of thinking. This liminal reflexive pause enables us to remain open and determine the most appropriate kind of sensemaking and response in action.

Pausing in aporia heightens “epistemic humility” – an awareness that knowledge and knowing are embodied interpretations of the observer rather than direct grasp of reality as it is. Aporia is therefore a necessary bewilderment that helps us – if we embrace bewilderment for a time – to engage in double-loop thinking to surface and question habituated thought patterns and paradigms; we can engage in critical introspection and consider the assumptions and norms that are playing out.

THE CLEAR DOMAIN – Fixed Constraints



1. **Fixed Constraints – Best Practice.** There are clear rules and a self-evident way to act. There is no ambiguity. Rather there are set rules: “Never do”, “always do ...” Everything is known. Causality is predictable and repeatable. If you do X – you always get Y.
2. There is no dissonance. We feel fully stable. Safe. Comfortable. We like this space because we do not need to think too much; we can just go on autopilot. We feel we know the rules and boundaries and structures that allow us to get things done as we have always done them.
3. We sense-make easily in a sense-categorize-respond pattern. Here are some examples:
 - *Sense:* Red traffic lights. *Categorize:* Red = Stop. *Respond:* Apply brakes and stop.
 - *Sense:* It is raining. *Categorize:* Rain = Protect from getting wet. *Respond:* Take umbrella.
 - *Sense:* Go to class. *Categorize:* school = passing tests. *Respond:* test anxiety. Rote learning.
4. **Challenges with Clear Domain.** It is easy to get into “pattern entrainment” or sense-making in conditioned ways, almost with autopilot thinking. We can become complacent or conditioned thinkers because we have unconscious, pre-conditioned, categories or assumptions and implicit bias about how things work.
 - a. In education – teachers and students often operate in this space. We do what we’ve always done because “it’s how it’s always done”, “it’s what we are used to”. For example: expectations of what teaching and learning are supposed to be, assumptions about assessments and grades, roles and responsibilities. This is where the legacy system maintains and perpetuates itself.
 - b. There is no learning or growth – no shifting of the paradigm - because we are just following automatic pre-established “rules” for thinking and action. work transformatively, we have to learn to recognize when a situation or action is using Clear domain thinking so that we can pause and engage in reflexive double-loop thinking.

COMPLICATED DOMAIN – Governing Constraints



Governing constraints – Good Practice. We operate within tightly bounded paradigms that govern what is accepted and appropriate. Knowledge and ways of knowing are established and we have relatively stable levels of causality, with good predictability and repeatability.

We sense-make in this domain with a *sense-analyze-respond* pattern in using accepted and prescribed ways of working. For example, *Sense* – sales numbers are dropping. *Analyze* – consult with sales experts on strategies for increasing market share.

Knowledge and practice are bounded and governed by gatekeepers; they have authority and power. We depend on them for knowledge, guidance, and acceptance. Learning happens in knowledge transfer from experts to learners. Experts help us deal with what we do not know, and we accept that they know and will teach us.

Change happens slowly with gatekeeping. Innovations are accepted within established paradigm. A new poem still recognizably within an accepted genre is accepted and published. But a very different format might struggle for acceptance. Innovations that are too far beyond the current paradigm – i.e., seen as too radical – are rejected by gatekeepers. Mike Csikszentmihaly developed a systems theory for creativity that shows this - [Systems Theory for Creativity - Domain and Field](#) - if you are interested you can read his [The Systems Model of Creativity](#) book.

Challenges with Complicated Domain.

We feel belonging and acceptance when we fit within the dominant paradigm or narrative. But are marginalized, excluded, or oppressed when we do not fit.

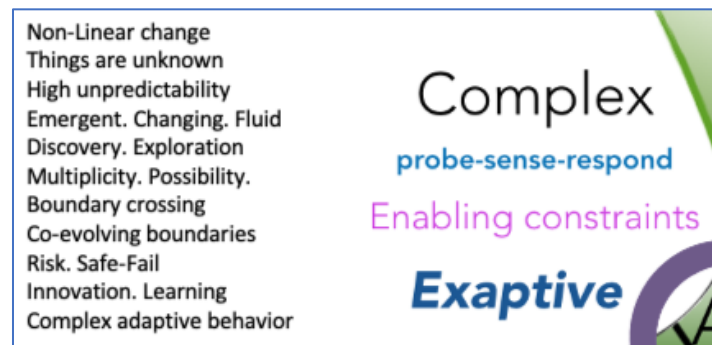
We can become over dependent on our experts and abdicate exploration and thinking differently. We conform unthinkingly missing the potential to see alternatives.

- “Paralysis by analysis” - experts stall because they cannot think outside the box in problem-solving and are stuck analyzing the situation using established tools. ((Audre Lorde’s idea that you cannot dismantle the master’s house with the master’s tools).
- Innovation barriers. Ideas too far from established paradigms are rejected by gatekeepers (Van Gogh was never recognized, Galileo was persecuted, activists

are rejected, children are told “don’t get too big for your boots” and made to comply).

- c. Paradigm silos. We can be over-entrenched in our disciplinary and social paradigms, that we reject different ontological and epistemological perspectives, are suspicious and blindly critical of methodologies and approaches that are different (“alien” to our way of thinking). We refuse to cross boundaries and engage with differences.

COMPLEX DOMAIN – Emergent and Multidimensional Change



Things are unknown and emerging – There are many unknowns, and we do not know what we do not know (“unknown unknowns”). There is high uncertainty, information and perspective diversity and interconnectedness. Cause and effect can only be deduced from experience.

Enabling constraints – Dynamic interconnections and unknowns can work as enabling constraints to seed adaptation, creativity, discovery, and transformation. These constraints are fluid and co-evolve with the emerging context. For example: The constraints of a new market can lead to novel advertising approaches that reveal new constraints and opportunities, the constraints of large class size can lead to creative community building.

Exaptive practice – Responding to unknowns and emerging factors, exaptation means a radical repurposing of an idea or object for a different use than its original purpose. For example, gardeners create breathable domes for plants from plastic bottles to deter slugs, in education, we can repurpose the counter-mapping from geography as a tool to dismantle legacy systems.

We act by engaging in a probe - sense – respond process. *Probe*: Experiment, explore, ask, listen. *Sense*: Look for patterns and trends, pay attention to experiences and emerging input, critically introspect to question our assumptions and prior norms (reflexive thought). *Respond*: Use our discoveries to act, actively build new knowledge; innovate and learn how to learn. This also describes the elements of responsive teaching and learning.

Not stable. Not predictable - high dissonance (cognitive, social, emotional). We are socialized to dislike instability and be uncomfortable with errors (ours and others) which are natural to exploring, discovering, and learning. Hence, to flourish in the Complex domain we need:

Permission and Safety – a sense of sense of community with trust and mutual respect.

Growth mindset - exploring and ok with failing focused on process and discovery.

Curiosity and openness to new and different things rather than fear and a closed mind.

Imagination and hope to see oneself succeeding and making sense of new territory.

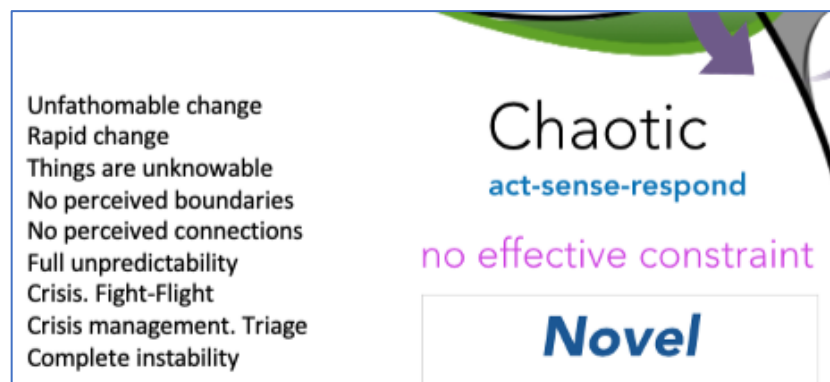
Autonomy to explore and discover - choices, metacognitive knowledge, and regulation.

Competence to explore and discover - a sense of self-efficacy in an unknown space - foundational knowledge, skills, and capacities.

Formative feedback that makes learning visible and provides information about where we are with scaffolding to support competence and autonomy.

Without the above capacities, we might perceive ourselves to be in the Chaotic domain instead and fall into a crisis mode of thinking where we could easily go into a fight or flight response.

CHAOTIC DOMAIN - Unfathomable Change and Crisis

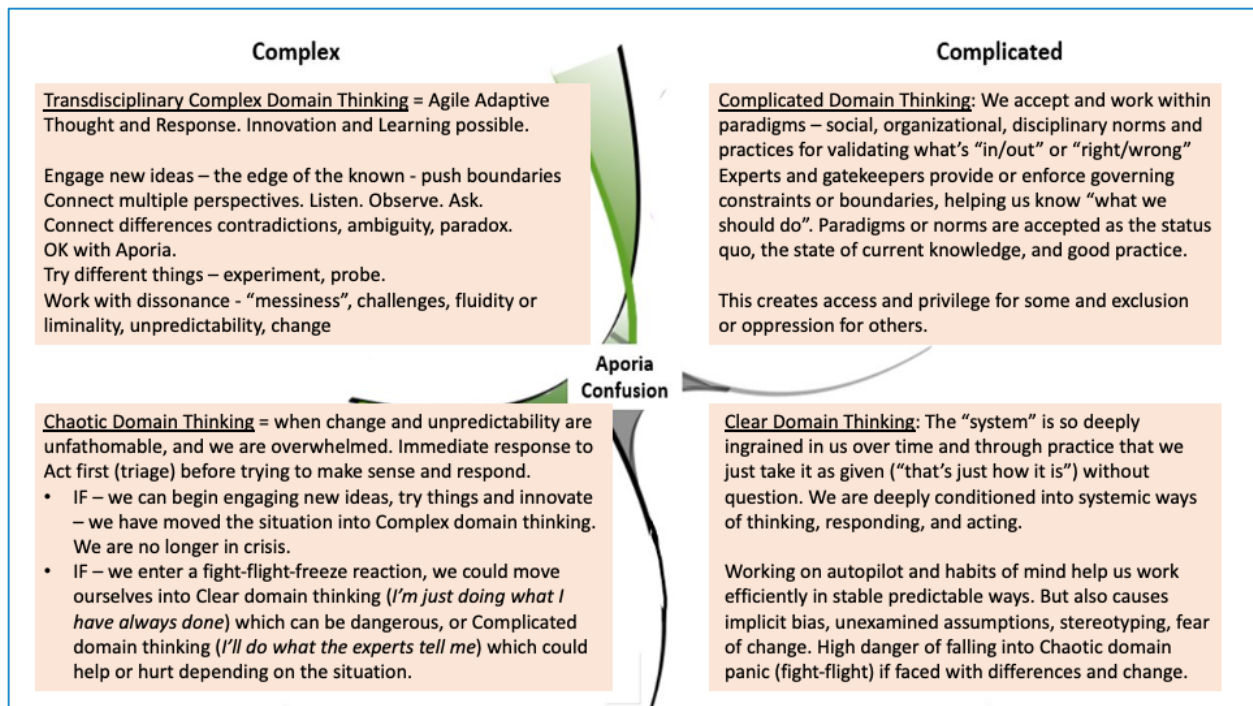


Nothing can be known. There seem to be no constraints – change is rapid and seemingly random; we cannot actually pin anything down or discern patterns and connections. We feel overwhelmed and nothing is connecting or coherent. This can be caused by physical, social, and emotional crises, for example, tsunamis, social protests, pandemics, violence, sudden loss of leadership, emotional breakdowns etc.

1. A typical crisis response is fight or flight. We might disengage and freeze or move back to Clear domain response (dig our heels in and continuing to do what we've always done) or Complicated domain (wait for the experts to tell us what's what and how to respond). In both cases, this can easily lead to paralysis and harm.
 -
2. Novel practice. We can learn to develop a better response if we recognize we're in Chaos in decisive novel action.
 - a. *ACT* first to contain the situation. For example, stop bleeding and stabilize vital signs in an accident, move everyone to a storm shelter as a typhoon hits, immediately intervene to stop bullying in a class. Action and communication is immediate, direct, and unilateral – there is no time to ask for input (yet). Hence trust in leadership is essential and must be pre-established before the crisis.

SENSE-RESPOND. On the heels of containment, we can decide the most appropriate thinking domain. Often this means intentionally using Aporia to move into Complex domain thinking in order to engage with the crisis with creativity and innovation. Sometimes this leads to a movement back to Complicated domain solutions, using expert interventions. Reflexive thinking is part of sense-making so that we do not respond through pattern entrainment, for example hastily rush to “go back to how things were” if the context does not warrant it, and in crises, it rarely does.

Visual Summary of Cynefin



Overview of Cynefin Principles

The Cynefin framework shows us that there are many ways to make sense the world and respond, depending on the kind of contexts in which we are doing that sense making. That is:

There are different types of reality (ontological spaces). Cynefin presents 4 types of sense-making domains: Ordered (Clear, Complicated domains), Complex, Chaotic, and Aporetic. None of these are better than others – they merely are. What’s critical is our ability to locate a situation accurately – to interpret a situation as being governed by Clear

Each reality or domain is defined by different levels of stability and predictability and our perception of cause and effect. Ordered causal effects, predictability, and stability put us either in the Clear domain (hard and fast, unvarying norms) or Complicated domain (governance of norms by experts). A high level of unknowns and unpredictability put us in the Complex domain (cause and effect are not clear, emergence of effects in unpredictable ways, discovery) or the Chaotic domain (things change too fast to see any discernible patterns).

There is no one-size-fits-all response. The way we sense-make and respond to situations therefore depends on what kind of reality we believe we’re working with.

Sense-making or interpreting a situation is subjective. Two individuals might find themselves interpreting the same situation very differently. For me moving house is old hat – I’ve done it many times and so when I have to move, I locate this in the Clear domain – I know the “rules”, exactly what I must do and how that will turn out. Someone else moving for the first time in their life feels everything is destabilized and changing under their feet. They locate their feelings of panic and being overwhelmed in the Chaotic domain. They might give up entirely.

The Cynefin framework helps us question ourselves or contexts reflexively if we apply double loop learning. We can look at our practices in Clear and Complicated domains and question if they do in fact have clear and predictable governing norms. For example, our habituated thoughts and actions that are located in the Clear domain might in fact be rooted in overly rigid norms and/or are misaligned to the world without us having noticed. Or long-established practices like SATs and GREs that have long been accepted as fair comparative measures to college entry college entrance exams, are in fact deeply unjust.

The Cynefin framework helps us understand the danger of single ontology thinking, applying the same thinking, assumptions, expectations, and “rules” to all situations we encounter. It connects with Adichie’s notion of the danger of a single story.

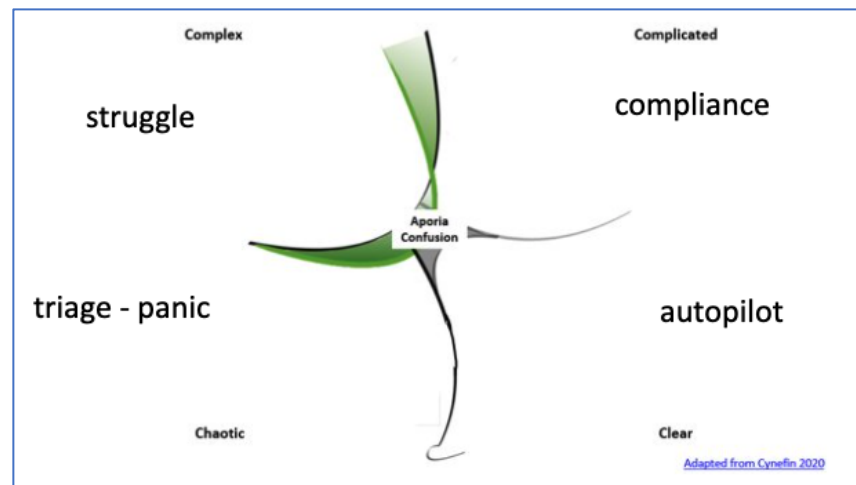
Business: Blindly applying methods that worked in one market to a new market can cause critical failure.

Organizations: Clinging to processes and policies despite significant changes in populations and contexts leads to barriers and oppression for those who do not fit the old parameters.

Education: A system that began based on a racially and socio-economically homogenous population is unjust and no longer fits a diverse demographics and complex contexts. It thus creates privilege for some, perpetuates racism and other oppressions for others.

Key Characteristics of Thinking in Different Ontological Spaces

Here is a way of understanding Cynefin in terms of modes of thinking in how we respond to situations – **Autopilot, Expert Compliance, Adaptive Struggle, and Triage-Panic.**



AUTOPILOT – Clear Space Thinking and Response

Clear Space sense-making is working on autopilot based on pre-established, often unconscious, and rigid norms or constraints. We think that everything is known and there is full stability and predictability. In some contexts, this is a good thing. When we have stability and predictability in physical and psychological safety, we can focus and give attention to our work. We drive on the right side of the road in the USA and on the left in the UK – no questions, no discussion. With stable, predictable routines, e.g., work or classroom structures, or algorithms. we work efficiently. We depend on this in operating machines – computers, industrial production etc.

But autopilot thought and becomes dangerous in changing contexts, new situations, where there are differences and divergences, or individual needs and practices. Here, the rigid constraints of deep-seated, implicit assumptions, beliefs, expectations lead to missteps, misunderstandings, and often, clash, conflict, and injustices.

How does this apply in parenting, social or community relationships, workspaces, education?

EXPERT COMPLIANCE – Complicated Space Thinking and Response

Complicated space thinking is compliance with governing constraints defined by paradigms - established theories, norms, closed systems. Individually, we might not have absolute cause-effect certainty, and there are people in authority who shape norms. They might not all agree, but for the most part, they work within similar norms of practice or governing constraints. This is reinforced by the pressure of time establishing disciplinary and social norms and peer pressure. For example, what can be published, what counts as art, what good science is, definitions of the "educated" person, of "success" etc.

Governing constraints support efficiency, protect the robustness and validity of bodies of knowledge, and ensures effective social process. Cultural traditions and practices are governing constraints that define and support cultural continuity. Hence, there are in-groups and out-groups. In-groups have cultural capital (they know the "rules"), and thus access, power, and privilege according to the established paradigm. Out-groups do not have cultural capital, are different to the established paradigm, and lack access, power, and privilege.

How does this apply in parenting, social or community relationships, workspaces, education?

ADAPTIVE STRUGGLE & EMERGENCE – Complex Space Thinking and Response

Complex space sense-making is adaptive struggle in relation to changing and emerging situations. Complex space situations have unknown unknowns – i.e., we do not know what we do not know! We meet new and different ideas, things, contexts, or people that might contradict or call into question our experiences, what we already know, our expectations and beliefs etc. There is therefore a sense of instability and unpredictability. For example, encountering customs completely new to you, the world experiencing COVID for the first time, learning something for which you have no previous experience.

But this also makes it a space of potential - expansion of knowledge and connections across differences. Emerging information and experiences might call previous assumptions, expectations, norms, and theories into question or present multiple “truths” and ways of doing things –multiple conceptions of God, or different cultural foods and customs etc. We find why not and what if questions – what if the earth goes around the sun, why not votes for women, why can’t people of color have the same rights as others, what if bread was baked in the sun, is rationality really the center of human experience?

Potential, possibility, emergence cause destabilization, and so this is also a cognitively and emotionally dissonant space that unmoors us from certainty, and brings discomfort, even distress.

However, if we have capacities and skills to engage with dissonance, emergence, and potential, we can respond adaptively. Adaptive struggle or response is allowing oneself to be in the liminal space of not knowing and staying open to discovery – through probing (listening, asking questions, exploring), connecting and creating a new understanding which then enables us to move forward. Notice that this is what we do as scholars as researchers. Do we also do this in life encounters?

How does this apply in parenting, social or community relationships, workspaces, education?

TRIAGE – PANIC – Chaotic Space Thinking and Response

Chaotic space response is rapid action in response to unfathomable change. Chaotic space situations are crises, where it is not possible to know anything and where immediate action is imperative. This is like triage - we might not know the context or causes, but we act first to stop the bleeding, or rescue someone. Having done this, we can move into Complex space thinking to explore and discover more about the situation and then respond adaptively or return to Complicated space thinking to work within governing constraints. Think of natural disasters, hospital Emergency Rooms, war zones.

A common response when we perceive ourselves to be in crisis and feel overwhelmed is the fight-fight-freeze response. (Note that this is subjective; what is overwhelming to one might not be for another).

Relationship dynamics overwhelm me

- **Flight** - Retreat to loneliness – which at least I know well
- **Fight** - Blame the other person each time.
- **Freeze** – Do nothing and allow the situation to continue.

Mathematics makes me feel crushed.

- **Flight** – Walk away from math. “I will never get it”
- **Fight** – Blame math. “It’s a useless subject anyway”
- **Freeze** – Avoid practicing math ... leading to a self-fulfilling prophecy of failing math.

How does this apply in parenting, social or community relationships, workspaces, education?

Example: Locating Teaching Approaches In Cynefin Spaces.

Teachers using Clear domain thinking.

Clear domain sense-making is very useful when there are established and self-evident best practices that help us function effectively and efficiently.

But when working with rich, complex contexts, Clear domain sense-making is dangerous. Here we see habituated thought of rigid unquestioned assumptions and beliefs about teaching and learning used in a fixed sense-categorize-respond mode:

- Struggling to learn – indicates lack of ability and aptitude.
- Girls are bad at math - You should not study aeronautics
- Student does poorly on a test – tests measure learning - you are not smart, or you did not study.
- These types of parents are not interested – I won’t bother reaching out to them.
- Students who do not speak up in class - not interested in learning – lose participation points.

- If we do not assign grades, students won't do the work.

Clear domain sense-making in education enables implicit bias and deep social conditioning to guide thought and action. It also makes us resistant to change and innovation in teaching. We cannot see the point of change and can easily become overwhelmed if asked to change how we work. Clear domain sense-making views the status quo as it has always been as desirable. The system works fine; if some students are left out, that's just how things are.

Teachers using Complicated domain thinking

Complicated sense-making works with established and governing paradigms of knowledge and practice. Again, this helps us function in systematic and efficient ways.

In teaching, our governing constraints are institutional, departmental, and classroom rules and policies that determine what will be learned, what the processes are, and how students ought to conduct themselves. Many experts have contributed to this so that we have good, shared practices. It is possible to standardize many aspects of education.

- The curriculum is prescribed. Authors and texts have been determined by experts. Curriculum can also be developed state and nation-wide. If we change a textbook, it's because someone in authority approved it.
- There are prescribed norms in disciplinary discourse and communication – definitions of what good writing, speaking, and classroom participation are supposed to be.
- Assessment of learning and mastery are standards experts have determined that I must follow.
- "You should know ... "- students are expected to know how to navigate institutional space and the hidden curriculum. These are things like knowing how to use office hours, how to speak to professors, know about and use resources, get in with the right crowd, ask the right questions. Those who are unable to do this are deemed to be not capable or good enough to take the rigor of the discipline or college level learning.

In Complicated domain sense-making, we will accept change hierarchically as it comes from points of authority. We are not comfortable with change but can handle it with guidance from experts and a relatively measured pace.

Teachers using Complex domain thinking

Complex domain sense-making in education comes from awareness of a problematic legacy system as a governing constraint and the discovery of the hidden crises in education – foundations of Eurocentricity and racism that otherize, marginalize, and oppress learners, inequities of access and success, our own positionality, and the alarming misalignment between the legacy system, current contexts, and emerging futures. From Aporia, where we discover what we don't know in a reflexive process that examines our own conditioning, we are able to move into Complex domain sense-making.

Complex domain sense-making is also a disposition to embrace the diversity, plurality, and complexity of learners and contexts and to use the fluid potential of dissonance as a process for

change. We explore the interconnected and entangled nature of education to question, expand, dismantle, and transform the paradigm intentionally so all learners can engage and flourish. We consider multiple possibilities and divergent ideas. We are curious, open, and imaginative – asking “What if ...?” and “Why not?” These are the seeds of transformative teaching helping us to try things out, seek input and feedback to co-create learning that is meaningful and useful to our students, and to be ok with things emerging as we teach.

We are reflexive – thinking critically about who we are and what we bring to teaching and learning constantly with the purpose of constant improvement and relevance.

- Who are my students – how do I ensure that their identities, histories, goals, and lived experiences are invited and included in the learning space I design?
- Who am I as an educator – what is my purpose or mission, and what values and beliefs guide that purpose? How does who I am (my identities, history, and lived experiences) affect the way I approach teaching?
- My curriculum and course design cannot remain static because my students and contexts, and who I am, are always changing. How can I expand, change, and present the curriculum so that it is relevant and meaningful to the learners in my classroom?
- What opaque words and processes in teaching should I examine and unpack so that I work more intentionally to make teaching and learning meaningful and useful?
- What do I know from trends in education and research on learning that can help develop my teaching?
- What feedback can I get from my students, self-observation, and peers to develop my teaching?

Reflect: Beyond the microlevel of the classroom and classroom teachers, what are some ways institutions or the whole system of education engages in Clear and Complicated domain thinking? Think about SATs and college access, institutional policies, residence life, abilities/disabilities, approaches, etc.

Connecting Cynefin with Adichie’s Danger of the Single Story

Humans are storying beings – we story ourselves and our lives because we naturally seek coherence and meaningfulness. Connecting this to Adichie’s danger of a Single Story, here is a way to look at Cynefin.

- **Clear and Complicated sense-making** court the danger of the single story. Through long years of habituation, we sense-make with single stories – assumptions and beliefs deeply embedded in us that rigidly constrain our thought and action. Single stories created and determined by experts and gatekeepers in disciplines and social contexts are governing constraints within which we think and act. Those that fit into these single stories have access and privilege and want to maintain the single story. Those that do not fit are excluded and oppressed. The Single Story shows Clear and Complicated modes of thought that work harmfully in social processes in history such as slavery,

colonization, industrialization, use of the environment etc.

- **Complex sense-making** seek out multiple stories. This way of thinking sees reality as comprising many truths and perspectives and therefore we must seek out, be open to, and work with multiple stories, as well as with emerging new stories. Complex domain thinking is necessary in contexts of increasing diversity of identities, histories, and experiences, and in contexts defined by constant and rapid change (each change is a new story).
- **Those able to work with Aporia** can sit with stories that cause a paradox of multiple truths. This is a powerful ability – to see different stories that are in direct contradiction, i.e., to contemplate multiple truths, not to resolve them by choosing one or the other, but to allow multiple stories/truths to co-exist, knowing that you do not know. From Aporetic modes of thinking, it is easier to move into Complex modes of thinking to then ask questions about the contexts of different stories, how multiple truths can connect and work together. Aporetic thinking begins Complex modes of thinking and prevents us falling into Chaotic modes of thinking.
- **In Chaotic sense-making**, there seem to be no stories, or the stories are changing too rapidly in unfathomable ways. Stories do not cohere or make sense ... they seem not even to be stories. Too much information that is unrecognized or coming too fast. This is crisis and stories are irrelevant and hence we feel overwhelmed and fall into a fight-flight-freeze response. If we are able to engage in some triage – we act first to contain the situation – we might be able to push into Aporetic and Complex modes of thinking to sit with the information, letting different stories emerge, and then find connections and pathways. A good example of this is when a natural disaster takes place like a hurricane – we deal with the crisis first in triage mode. Then we start gathering the stories (emerging data from multiple sources) to assess the situation, seek out help and find solutions for recovery. Often the actions and solutions are innovative rather than following old ways of doing things.

Watch: [Kimberle Crenshaw on Confronting America's Racism](#). [6:30 mins]

Kimberle Crenshaw is one of the founders of Critical Race Theory (CRT). Here, she explains why CRT seems a threat to some people, and how it is in fact a way to move the nation forward. As you listen, see if you can spot the thought patterns Clear, Complicated, and Complex domain thinking, and why some people might fall into Clear and Chaotic domain thinking in response to CRT.

Principles for Change and Transformation in Education

“For the master’s tools will never dismantle the master’s house. They may allow us to temporarily beat him at his own game, but they will never enable us to bring about genuine change.” – Audre Lorde (1983)

[Audre Lorde](#) (1983). The master’s tools will never dismantle the master’s house. (pp. 94-101). In C. Moraga and G. Anzaldua (eds.), [This bridge called my back: Writings by radical women of color](#). Kitchen Table Press. - The essay is based on Lorde’s speech made in 1979 at a feminist panel at NYU. Note that Lorde was offering a critique of white feminism. Her idea however broadens into all actions for transformation.

Growth and human development, in essence, is predicated on change. For educators, embracing change is an opportunity to create pathways that transform teaching and learning toward a more human-centered and just process that includes all learners and takes away barriers that have traditionally blocked flourishing in education. However, change and transformation contain the tensions described above as we navigate between what we know and emerging new ways of doing things. This is often hard for us, our students, and colleagues with whom we work. Here are some overarching principles for transformative work:

Think about the following areas. Use your understanding of paradigm shift and multi-ontological thinking with the Cynefin framework to respond to the reflection questions. You do not have to write these in your Journal ... although of course, we encourage you to do so.

Difference and diversity as fundamental. There is a diversity of norms at every level and dimension of society. Multiple perspectives, identities, and ways of being. We really cannot speak of the “typical.”

Reflect On Education: Is there such a thing as a “typical” student, assignment, curriculum etc.? Why do you think we often still operate as if there are many “typicals”?

Simultaneity and interconnectedness. We cannot avoid differences and pluralities. The world enters our lives – in our communities, through the internet - in a cacophony of interconnected information. This makes it important to develop curiosity and openness rather than suspicion and defensiveness when we encounter new and different people and experiences.

Reflect On Education: What does a curriculum look like that brings together a multiplicity of voices and perspectives? How do we design assignments and activities that cultivate curiosity and openness?

Change and emergence. In addition to multiple paradigms co-existing, rapid change and innovations are part of a global, technological, interconnected world. Therefore, there is less predictability and stability; we cannot expect things to remain unchanged. This is especially hard because we are deeply conditioned by the legacy system’s norms and structures.

Reflect On Education: What capacities must we cultivate to be able to work with change? What kinds of activities and assignments can I bring to help students become comfortable with taking learning risks, learning how to learn, and develop growth mindsets?

The end of a singular social contract. The idea of “contract” implies a power dynamic that is often a contract to comply by one dominant set of rules. The existence of multiple paradigms and narratives points to new metaphors for social interaction and sensemaking.

Reflect On Education: How do we get past the idea of teacher-learner contracts toward alignment of values for learning, toward listening to and acknowledging all learners? What metaphors might work better – for example, journeys, weaving, dance.

Reflect. Connections with Teaching Philosophy

Understanding the world from the perspectives of change and complexity is key to understanding transformations in education and our practice, to shift from a factory-model transmission approach to teaching and learning toward an empowering student-focused process of meaningful engagement for diverse learners.

What is the impact of these ideas about paradigm shift and educational transformation on your teaching philosophy? Given the characteristics above, what are your guiding lights – values, principles, and goals – that support your work as an ethical educator seeking to transform your classroom into an empowering space for all learners?

Chapter 4 - Design Thinking for Diversity Inclusion, Equity, and Justice

In this chapter, we continue with systems and complexity thinking applying it to designing for diversity, inclusion, equity, and justice. We will explore the microsystem of complex intersectional identities and how we locate this within the macrosystem of education.

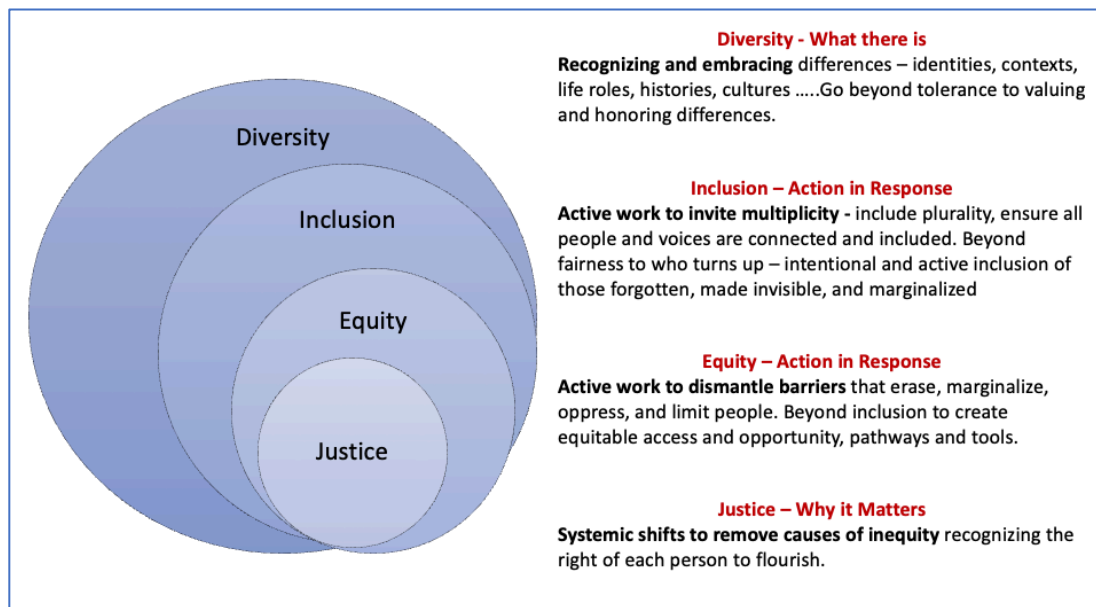
- **We define and clarify what we mean by JEDI:** Justice – Equity – Inclusion – Diversity, connecting this with TD pedagogy values and principles
- **We unpack diversity of identity and contexts** through the framework of complex intersectional identities, informed by a socio-ecological model of identity development. This helps us to understand each individual as a micro-system of intersecting identities shaped by physiological, neurological, socio-cultural, historical elements and lived experiences. We apply this to develop awareness of our own positionality with respect to education.
- **We then learn the Design Thinking framework.** This is a framework (and a method and mindset) from design science helps us take a systems and complexity approach to inclusive, equity-minded work. This method centers people and contexts as essential in how we select and design our approaches and strategies in our work, whether that is a course syllabus, leadership strategy, or methods to facilitate engagement and learning.

“It’s not ‘us versus them’ or even ‘us on behalf of them.’ For a design thinker it has to be ‘us with them’” -Tim Brown, CEO and President of IDEO

“Human-centered design is a philosophy, not a precise set of methods, but one that assumes that innovation should start by getting close to users and observing their activities.” – Donald A. Norman, Co – founder of Nielsen Norman Group

“We can’t solve problems by using the same kind of thinking we used when we created them.” - Albert Einstein. This connects with Audre Lorde’s idea that you cannot dismantle the master’s house with the master’s tools.

Justice: Integrating Diversity, Inclusion, and Equity



JUSTICE guides transdisciplinary pedagogy and gives us our larger mission from which we develop our individual philosophy and approach. Justice guides us in thinking of why we teach, why is it important to engage in reflexive practice to question assumptions in legacy systems. Justice also orients us in selecting our approach to designing teaching and learning.

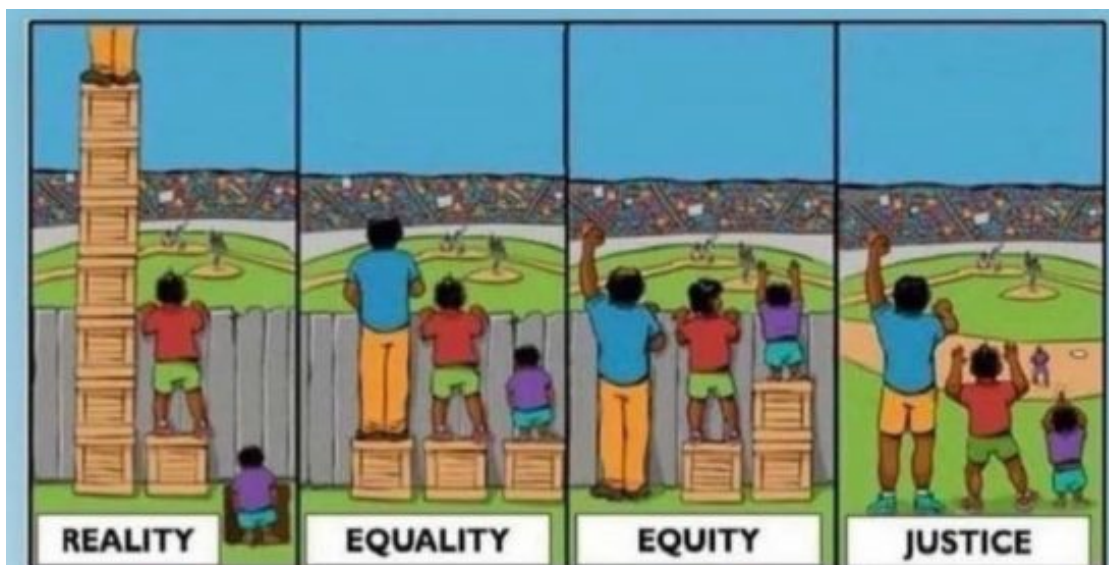
Diversity, Inclusion, and Equity integrate toward a justice-oriented practice:

- **DIVERSITY: Recognize and embrace differences, plurality, and complexity.** Systems and Complexity mindsets help us see the diversity of identities, contexts, life-roles, histories, cultures that are dynamically interconnected in a vast global system, and that permeates all systems. Therefore, we go beyond tolerance to delighting in and honoring differences, recognizing diversity as a rich asset to be sought rather than avoided.
- **INCLUSION: Invite and include multiplicity.** This goes beyond being fair to those who have turned up, and proactively designing something to recognize and invite those who are often invisible, forgotten, marginalized, and erased.
- **EQUITY: Remove barriers and support flourishing.** Inclusion is not enough. It gets you through the door, but it does not automatically translate to success. We have to proactively identify barriers that create inequities and remove them. For example, including more first-generation students of color in college is just the first step. They face many inequities, for example textbook costs, expectations of digital access, having to work full-time to go to college, etc. How do we design proactively to address these points of inequity?

AWARENESS: The term JEDI was coined with the integration of Justice into DEI work. It's a cool acronym of the fight for justice from *Star Wars*. However, we should also be mindful of potential associations of the *Star Wars* subtexts – “(white) saviorism and toxically masculine approaches to conflict resolution” – [if you're interested, read more on JEDI work.](#)

Clarifying Equality – Equity – Justice

We can use this popular cartoon to clarify the difference between equality, equity, and justice. The cartoon uses the metaphor of a playing field where a game is going on, surrounded by a wooden fence. There are people standing outside the fence (systemic barrier) that blocks their view depending on their height (access depending on identity).



From [@restoringracialjustice](#) – Jorge Santos

Reality – different people have more and less than is needed for success as a result of their history, biology, and lived experiences.

Equality – the assumption that everyone will benefit from the same supports, therefore there must be an equal distribution to all. This helps some but not others as it does not account for different circumstances and identities that are still blocked from success.

Equity – differentiating support by considering what is needed for different people to overcome barriers to success. In this case, the short person needs a different strategy compared to the tall person. Equity takes a people and context centered approach; it involves embracing the complexity of differences.

Justice - through work that is inclusive and equity-minded, transforms the system altogether. Reframing happens; in this case we are aware of and embrace the diversity of people, moving the “problem” out of who they are – their different heights are not an issue - and instead addressing the systemic issue of the wooden fence. We question the assumptions of the fence - is it there just because it is historical? Do we actually need it? Can we remove it altogether? By questioning assumptions and reframing the system, we design a more flexible environment that is both inclusive and equitable. *You will explore this in a later chapter on Universal Design for Learning (UDL)*

Here is another cartoon telling the same story. This graphic is inspired by Shel Silverstein's story of *The Giving Tree*.

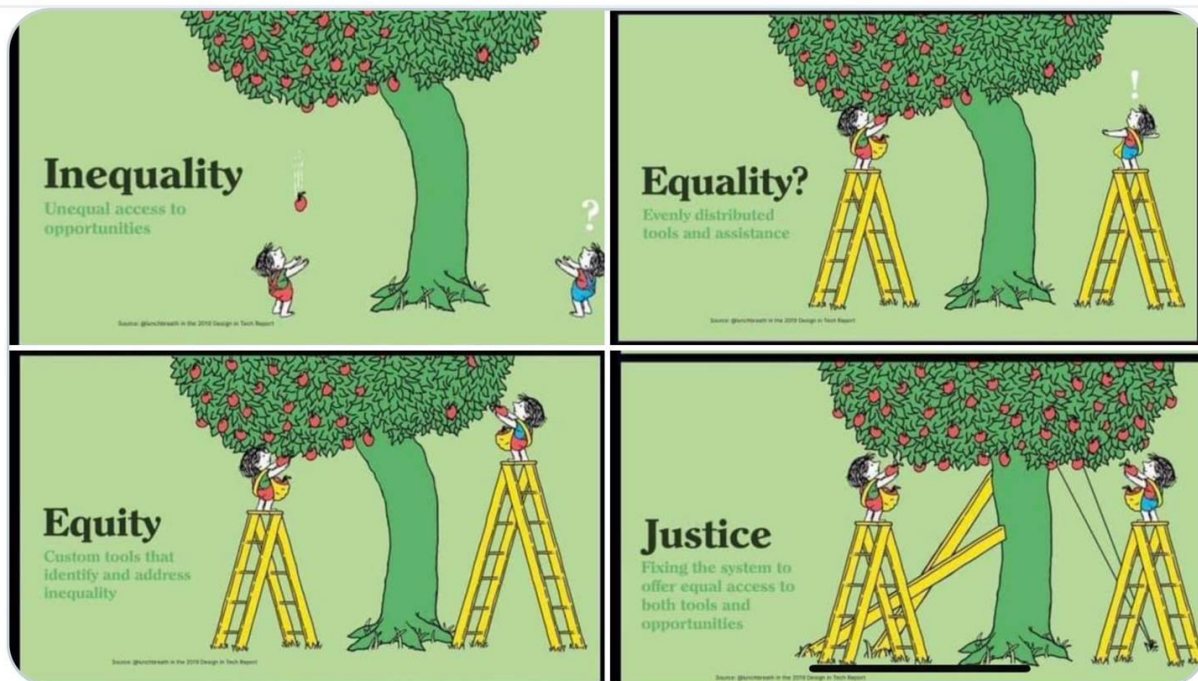


Image: [Tony Ruth](#) and Avinash Kaushik – inspired by Shel Silverstein's *The Giving Tree*

In this metaphor the reality of inequality is the unequal access to opportunities (apples). Equality is attempting an even distribution of tools to get to the apples. But the tree (the system) is skewed away from some people who still remain without access in spite of the tools; ironically those who might not have needed the tools have even better access. Equity recognizes inequities with differences and creates custom tools that identify and address unfairness and inequalities. This seems to help everyone, but still ignores the system. Justice addresses the skewed system and acts to change it. Together with equity it shifts the system to be open to all.

There must exist a paradigm, a practical model for social change that includes an understanding of ways to transform consciousness that are linked to efforts to transform structures. – bell hooks

In the next section, we explore models or frameworks that helps us first understand and transform our own consciousness as well as use as tools to transform systemic structures within the sphere of our practice in classrooms or other learning environments.

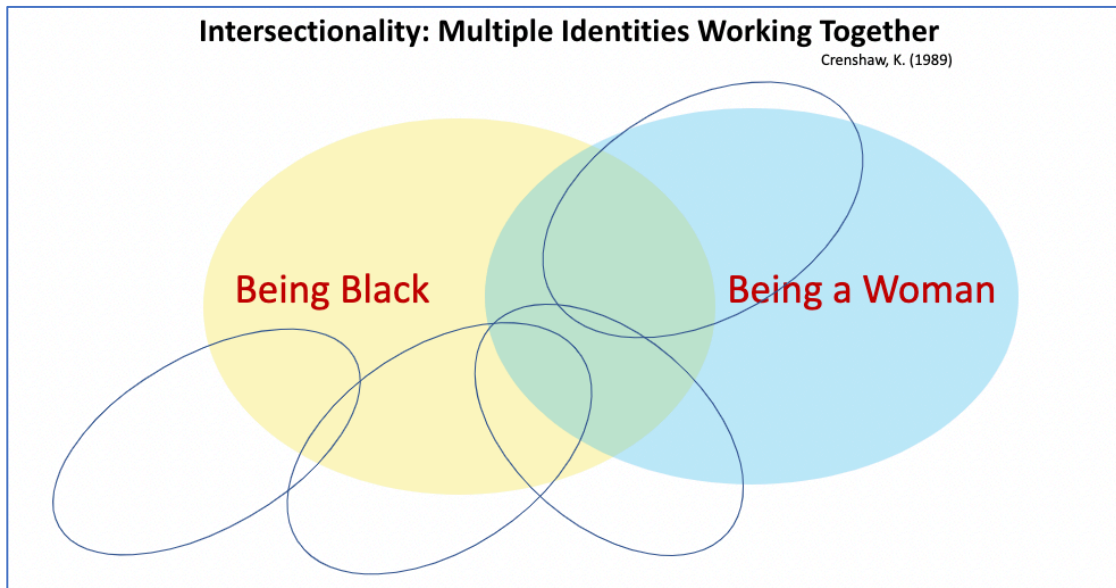
Frameworks for Justice: Complex Intersectional Identities

Complex Intersectional Identities

The concept of complex intersectional identity was developed by legal scholar [Kimberlé Williams Crenshaw](#) arguing for a holistic and authentic understanding of the experiences of Black women within the framework of critical legal studies. Here is how she describes what it is:

"It's basically a lens, a prism, for seeing the way in which various forms of inequality often operate together and exacerbate each other. We tend to talk about race inequality as separate from inequality based on gender, class, sexuality or immigrant status. What's often missing is how some people are subject to all of these, and the experience is not just the sum of its parts." ...

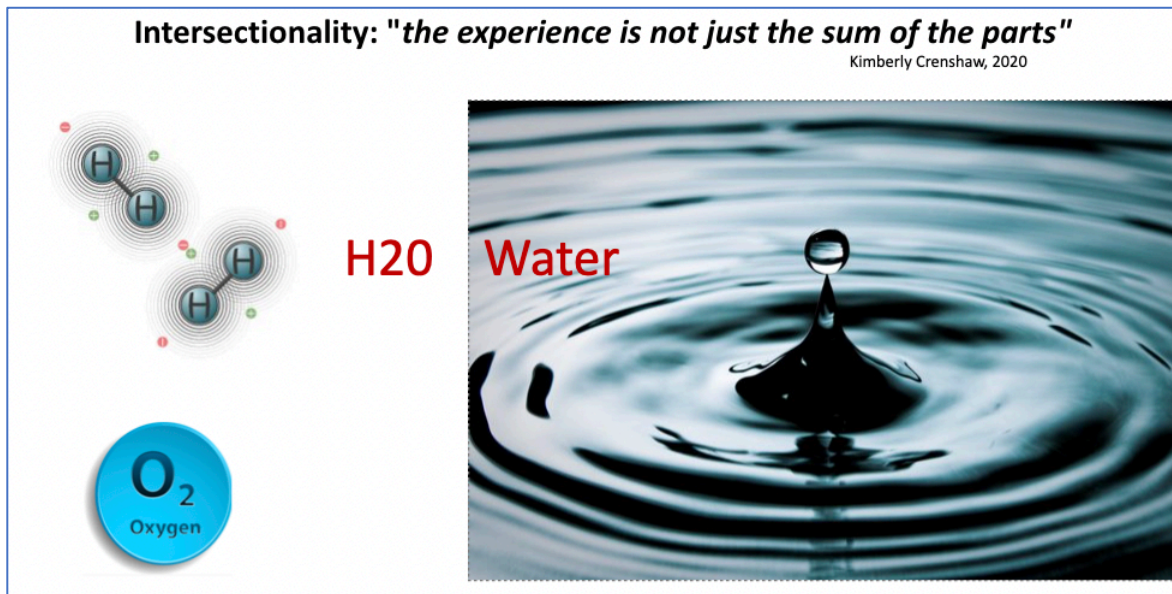
"Intersectionality is simply about how certain aspects of who you are will increase your access to the good things or your exposure to the bad things in life." [Crenshaw, 2020. Interview by by Katy Steinmetz](#)



[Crenshaw, K.](#) (1989) Demarginalizing the intersection of race and sex. A Black feminist critique of anti-discrimination doctrine, feminist theory and antiracist politics. *University of Chicago Legal Forum*, 11(8).

Drawing from feminist and Black feminist critique of multiple systems of power, Crenshaw (1989) described how the experiences of a Black woman's oppression was more than the sum of the marginalization and oppression of women (sexism) and the marginalization and oppression of Black populations (racism). She points to the "problematic consequence of the tendency to treat race and gender as mutually exclusive categories of experience and analysis ... to contrast the multidimensionality of Black women's experience with the single-axis analysis that distorts these experiences" (p.139). That is, not seeing the microsystem of identities an individual embodies fails to capture the ways in which multiple social identities shape the lives of oppressed individuals.

"Because the intersectional experience is greater than the sum of racism and sexism, any analysis that does not take intersectionality into account cannot sufficiently address the particular manner in which Black women are subordinated," (p. 140).



[Patricia Hill Collins](#) has described intersectional identities as an interdependent phenomenon of oppressions based on multiple factors like race, class, gender, sexuality, abilities, nationality and other socially defined categories.

Here is a granulated description of intersectionality by [Museus and Griffin](#) (2011). (This is a good article to read in full you are interested in the use of intersectionality in educational research).

"Intersectionality can be defined as the "relationships among multiple social dimensions and modalities of social relations and subject formations" (McCall, 2005, p. 1771). In simpler terms, it can be defined as the processes through which multiple social identities converge and ultimately shape individual and group experiences (Shields, 2008)."

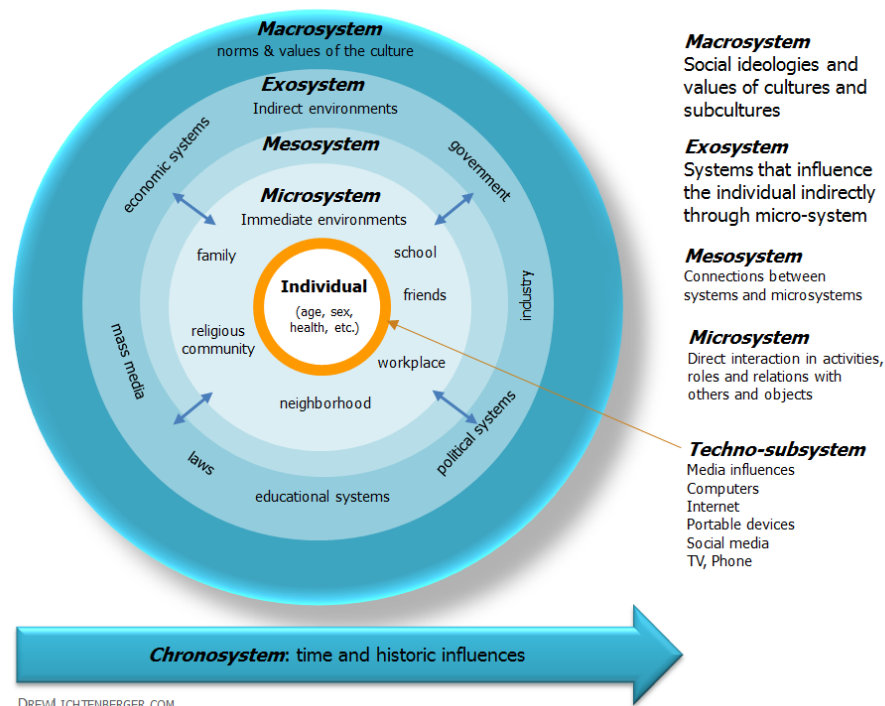
- "Structural intersectionality refers to how multiple social systems intersect to shape the experiences of, and sometimes oppress, individuals (Crenshaw, 1991). In higher education, for example, structural intersectionality can be used to make sense of how both racial and gender inequities converge to shape the experiences of women of color in higher education."
- "Political intersectionality refers to how the multiple social groups to which an individual belongs pursue different political agendas, which can function to silence the voices of those who are at the intersection of those social groups (Crenshaw, 1991). For example, political intersectionality would explain a case in which racial minority students refuse to address

discrimination against lesbian, gay, bisexual, and transgender (LGBT) students of color to avoid having those issues become public and risking tainting the image of those communities of color.”

Socio-Ecological Determinants of Learning: Integrating Bronfenbrenner’s Theory

Uri Bronfenbrenner’s theory of the bioecological systems model of human development helps us visualize and contextualize the microsystem of interactional identity within a social-temporal system of experiences. He explained human development as shaped by interactions between the individual and multiple “ecological systems” at different levels of social and historical or temporal structure.

Bronfenbrenner’s Bioecological Model of Human Development



[This is from a blog post by Drew Lichtenberger.](#) He gives a very succinct explanation of the idea of bio-ecological systems that shape human development.

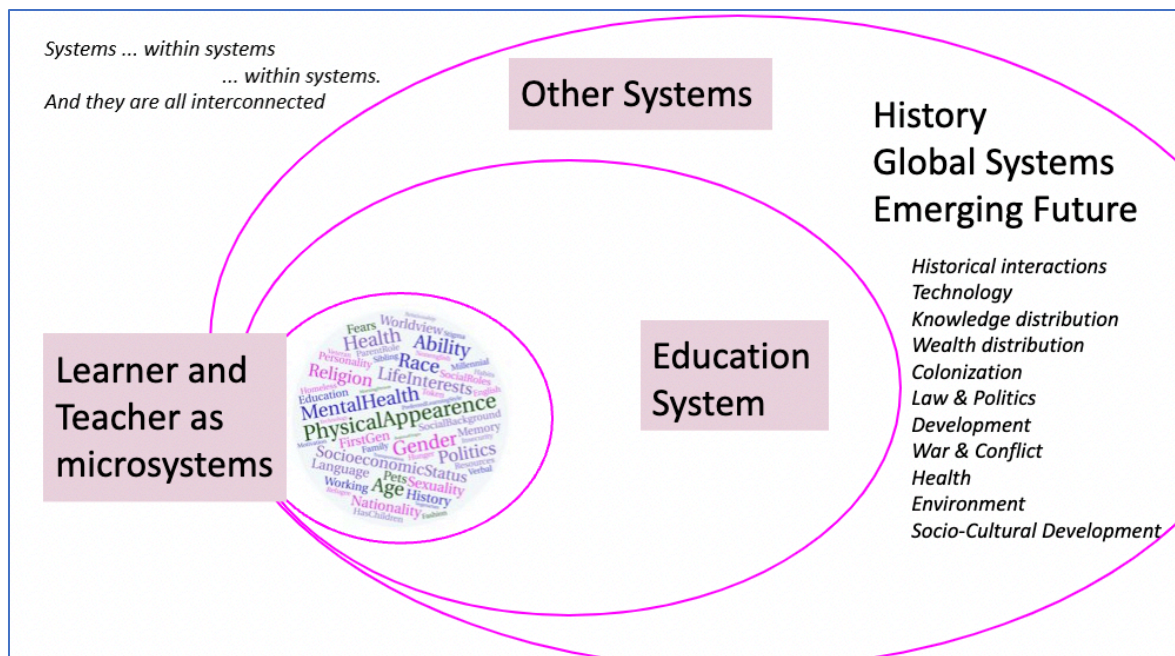
“The inner circle represents the most direct interaction with parents, friends and objects. Family plays the most prominent role in the development of a child. A healthy family v. one of dysfunction has a significant impact on the way a human develops. Next are the various environments of that individual’s family and area in which they live. The outer circle considers the most dominant societal norms and values situated in a given point in history, while the circles in between represent various systems which have indirect influences through the microsystem. Finally, the orange ring in the center represents how technology can now mediate many of our direct interactions with our world and one another. The way these various systems interrelate can be rather complex in the way they work in combination on the development of a person.”

Watch: [Brofenbrenner's model applied to college students](#) [6:57 mins]

In this video, Rachele Tannenbaum, a college professor explains the model and also gives an example of how it applies to a college student.

Systems and Complexity Integration: Intersectional Identities as Microsystems

We can integrate intersectionality with an ecological systems-approach to understand its complexity in how it affects educational processes on a systems and individual level.



We are microsystems. From a systems- perspective, identity is not a linear construct of multiple additive identities treated separately. The whole of who I am and how I experience the world is a set of inextricably woven strands and cannot be explained by my separate identities and roles. We each are a microsystem of identities and experiences, some biological (skin color, height etc.), but most defined socially and historically (language, culture, history, social roles etc.). Thus, we are more than the sum of different parts; we are defined by a gestalt whole of the myriad identities we embody that intersect to create our unique experiences. For example, being a Black Female is uniquely different to being a White Female or a Black Male. Being Transgender Black American is different to being Transgender Korean, or Transgender Nigerian, and being a Pakistani Muslim Female is different to being an American Muslim Female.

Therefore, we must consider all intersections simultaneously, seeing individuals as embodied microsystems of experiences, connections, identities, histories, assets, who in turn interact with others of equally complex intersectional identities, all of whom are embedded in multiple complex social and physical systems that are interacting as well.

Positionality and complex dimensions of identity

Watch: [Positionality and research. How our identities shape inquiry](#) [2:20 mins]

This video clip defines positionality and how it enters into scholarship. The same principles apply to teaching. As you watch, think about yourself both as a scholar and teacher.

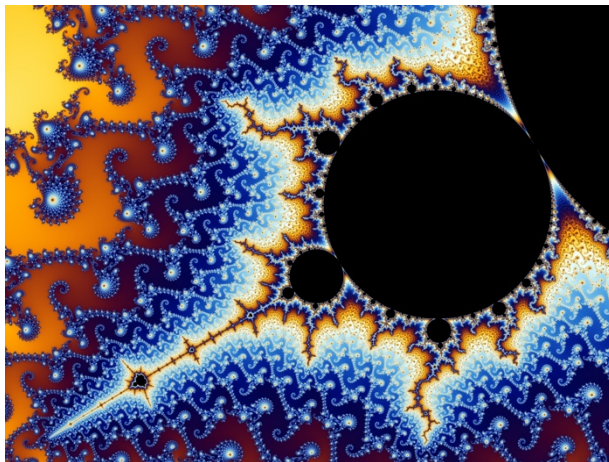
Browse: Website [Inclusive Language Guidelines](#). American Psychological Association. [25:00 mins]

Comprehensive overview of different dimensions of identity with guidelines and further research connections.

Imagination Pause. Take a moment to imagine the layers and entanglements of intersections and interactions. Complexity is quite beautifully mind blowing!

- Each individual is an embodied microsystem of biology, experiences, connections, identities, histories, emotions, assets etc.
- Each one is in dynamic interaction with a complex network of others.
- All these interactions are embedded in multiple complex social, temporal, and physical systems.
- All social systems are embedded and interacting with multiple others, including temporally.

Fractals are a good metaphor: Infinitely emerging patterns at multiple levels. While the individual points – the person – are unique intersections – the larger pattern holds of systems embedded in systems



Fractal patterns.

No matter how deep you zoom in or how far you zoom out, the pattern is repeated. As a metaphor, this illuminates how each microsystem – unique intersections of multiple factors is repeated at larger and larger social and global systems.

[Mandelbrot Zoom Sequence Video](#) [1:45 mins]

[Image source - Wikimedia](#)

Mapping Your Complex Intersectional Identity

We embody visible and invisible identities and roles. From a systems perspective, we are each a microsystem of identities, histories both personal and cultural, lived experiences and circumstances both pre-determined and chosen, goals, interests, abilities etc. These make you uniquely who you are.



Task: IDENTITY MAPS - Make your complex intersectional identity explicit.

Create a "map" representing who you are that shows your complex intersectional identities. Put yourself in the middle of a sheet of paper. From there radiating out, put all the different dimensions of who you are. Feel free to draw and decorate and add images.

Some large social identity categories to consider: Class, Citizenship, Ability, Age, Generation, Race, Religion, Sexual Orientation, Cis/Trans Status, and Gender. Also consider social, professional, and kinship roles: Parent, Caregiver, Partner, Spouse, Child, Sibling, Employee, Supervisor etc. Add other traits or aspects of yourself – especially invisible aspects that significantly shape you and your interactions with the world, e.g., artist, introvert, extrovert, diver etc.

You can do this on a sheet of paper and take a photo or you can do this on a PowerPoint and save it as an image to add to your Journal.

If you want to experiment with a nifty free mind-mapping tool –try [GITMIND](#) – it's easy to use and a great tool for both research (for example sketching literature review notes or research design) and teaching. There are also many other free mind-mapping tools you can use. Basic GITMIND steps:

- When you begin a new mind map it gives you a central or floating node. Put the word ME or your name in that node.
- Use the menu or right-click to add sub-nodes to add words and phrases the present different aspects of your identity, history, and other dimensions of your life that are significant to you. Include both visible and invisible identities.

Design Thinking for Ethical Education. A human-centered, intentional approach

In this section, you will explore how Design Thinking gives us a robust framework to center learners and contexts in any teaching-learning design and facilitation. Design Thinking can be a great framework to guide and actualize equity-minded, justice-oriented teaching and learning.

“Design thinking is in many ways the obverse of scientific thinking. Where the scientist sifts facts to discover patterns and insights, the designer invents new patterns and concepts to address facts and possibilities. In a world with growing problems that desperately need understanding and insight, there is also great need for ideas that can blend that understanding and insight in creative new solutions. Implicit in this notion is the belief that design thinking can make special, valuable contributions to decision making.” - Charles Owens. [Design Thinking: Notes on its nature and use](#) p. 17

Design Thinking came out of the explorations of wicked problems and design science, product design, and architecture. It is especially relevant to Universal Design in architecture and urban planning. While not called Design Thinking, the approach has strong connections to information and communication arts and science and to audience and performance studies.

We will use the Design Thinking framework developed by David Kelly and Tim Brown at [IDEO, a design firm that champions human-centered design](#). This is also the framework used by the [Stanford d-school](#) – “a place, a community, and a mindset” that fosters creativity that was founded by David Kelly.

Read: [The evolution of Design Thinking](#) [estimated 3 mins.]

IDEO website. This overview shows the system of many disciplines from which Design Thinking emerged. It is a transdisciplinary method.

Read: [What is Design Thinking?](#) Blogpost by David Kelly, IDEO and founder of Stanford d-school. [estimated. 5 mins]

As you read, think about designing teaching and fostering learning in your classroom. Which ideas from this post could be equally applied to education? Here is just the first part:

“Design thinking has a human-centered core. It encourages organizations to focus on the people they're creating for, which leads to better products, services, and internal processes. When you sit down to create a solution for a business need, the first question should always be what's the human need behind it? In employing design thinking, you're pulling together what's desirable from a human point of view with what is technologically feasible and economically viable. ... The process starts with taking action and understanding the right questions. It's about embracing simple mindset shifts and tackling problems from a new direction”.

Watch: [What is Design Thinking](#). [1: 54 mins]

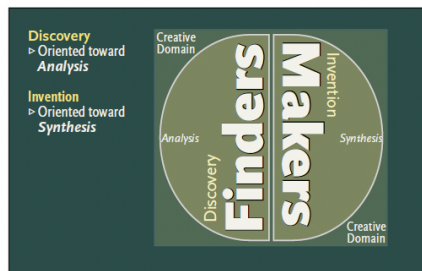
This video from IDEO is introduced by David Kelly and explains what it is and why it is useful. While they do not refer to teaching and learning, engage in transdisciplinary boundary crossing to ask how these ideas are relevant to education, how they might illuminate and affirm things we are already doing, and how they might help us sharpen and shape our strategies toward equity-minded design in teaching and learning.

Watch [1:50 minutes] [Overview of the 5 phases of Design Thinking](#).

Notice that Design Thinking begins with exploration to define problems, rather than assume what the problem is. As you watch, think about education and where this approach would be useful. Why do you think Design Thinking is not prevalent within academia? Or is it in your discipline?

Read: Owen, C. (2006). [Design Thinking: Notes on its nature and use](#). *Design Thinking*, 14. p. 16-27.

[11 pages – with images]



Charles Owen is a leading researcher in Design science and processes. This article is a succinct overview of Design Thinking that explains the creative process inherent in it. This model from the article shows 2 dimensions of creativity – analytic (finding) and synthetic (innovation). Can you see the ways in which teachers embody both Finder and Maker when we work transformatively to shift the legacy paradigm

toward justice?

Intentional • Audience Focused • Reflexive



- In post-anthropomorphic work that starts with planet-centered design, the same process is applied except that we put the complex interaction of people with environments in the center.
- In education, Design Thinking is a transdisciplinary and transformative tool that helps us intentionally design for inclusion, equity, and justice in our classrooms and in larger institutional spaces. It helps us mindfully center learners, learning, and contexts so that the larger systems sense-making guides our innovations for teaching and learning.

How Design Thinking Supports Ethical Education

EMPATHIZE – WHO. Listening and observing. Starting with the learners and learning.

We begin – and always return to – ensuring that we understand the contexts of inclusion and exclusion. Learners are key stakeholders in future-focused education. Understanding the intersectionalities in student identities, assets, histories, interests, and lived experiences helps us take a systems view in creating structures and processes that transgress, transcend, and transform legacy education.

Do not forget yourself – the teacher.

- What is my positionality? How does my complex intersectional identity shape what I hear/see/experience? How have I been and how am I being complicit in perpetuating systems of inequity? This prepares us with awareness of being mindful of opaque language and of implicit assumptions.
- My WHY. What core values, beliefs, and goals inform my work as an educator in making intentional choice to transform how I design teaching and learning to promote equity?

DEFINE – CONTEXTS – Both situational and temporal

Look at defining, constraining, and enabling boundaries that affect the teaching-learning process - physical, temporal, structural, policy and practice, linguistic etc.? What affects students' engagement, motivation, persistence, and sense of meaningfulness and belonging? Consider pragmatic things like course day and time, length of sessions, level of course, as well as social-emotional factors.

- What structures and processes of institutional and disciplinary scholarship practice include and exclude students? What opaque language and discourse hides implicit assumptions, what gatekeeping happens and why? Reflexively understanding the legacy paradigm of education (sense-making using Complex thinking) helps us stand outside of it to ask questions, even though we work within institutions.
- What unthinking processes and expectations in institutional practice and disciplinary scholarship include and exclude students? Understanding how systems and deep assumptions and habits work helps us notice deep conditioning and habits of thought and action that cause inequities.

The Empathize and Define phases of Design Thinking help us operationalize Systems Thinking to see the big picture of the diversity of identities, circumstances, needs, opportunities, etc. that we and our students bring to our work together. This reveals:

- Legacy system structures and processes which create opportunities and access for some while blocking others.
- Complex social determinants of learning that support or block learning success.
- Gaps in our perspectives or mental models (shaped by our experiences and assumption) about the identities, contexts, and experiences of a diversity of learners.

A systems-based Empathize and Define process in Design Thinking supports an intentional, equity-minded approach to teaching and learning design. We can discover and reveal inequities at the systemic level that will inform how we design education. Hence, Design Thinking for teaching and learning intersects justice in education with future-focused design that prepares students to flourish in their futures, as well as to be positive global citizens to sustain humanity.

Reflexivity through double-loop thinking is important so that we do not sense-make through our entrained or conditioned patterns of assumptions and beliefs (Clear and Complicated domain thinking).

IDEATE – Intentional Design – Imagination and innovation for equity.

Empathize and Define reveal information at the level of the complex intersectional identities of students and systemic legacy contexts and assumptions. This information helps us Ideate or create transformative structures, processes, resources etc., What kind of practice will engagement, motivation, persistence, and meaningfulness for ALL learners? Do we have equitable ways to check for understanding along the way that will make learning visible and help us and our learners gauge our progress and make adjust for improvement?

PROTOTYPE & TEST – Engage reflexively in the teaching-learning journey.

As we teach, we get feedback, observe effects, troubleshoot, find new possibilities. We observe student engagement and learning formally and informally to critically reflect and check assumptions and identify gaps. This helps us make micro-adjustments as we teach. We might have to cycle through the Empathize and Define phases again to dig deeper, learn more in order to make the necessary adjustments.

The importance of reflexivity in systems-based Design Thinking for justice

Reflexive thinking helps us engage in Complex domain sense-making to critically introspect and question our ideas, to dismantle and adjust misassumptions, values, and beliefs of the legacy system, including what we unconsciously embody. Thus, we work iteratively to refine, get more information, and new insights. We pay attention and are fully present to emerging discoveries; we understand we are working within complex systems in an adaptive and emergent way.

This includes the following principles:

- Fail fast and fail often
- Ask lots of questions - collaborate
- Don't avoid contradictions - Embrace ambiguity
- Break binary thinking - look for multiple points of view
- Errors enrich and are focused points of information
- Reflexivity - question assumptions and thinking - "we've always done it this way"

This mindful attention keeps us agile and creative as educators and leaders. In education, evidence-informed teaching works in a similar way, except that here, the “data” are very broad and include all information, observations, feedback emerging from the teaching process.

Task: Think through the following scenario

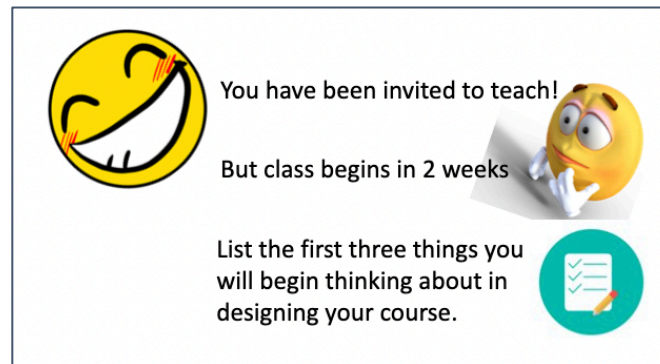


Image credits: [Smiley face](#), [Worried face](#), [Checklist](#)

We often move quickly to Ideate – planning our course.

This could mean that we design courses and teaching that comes out of our own conditioning and implicit biases because we are a product of our schooling experiences.

But if we pause and step back from Ideate, to enter Empathize and Define phases, we can intentionally engage in discovery and reflexive thinking to ensure our design is aligned with students' identities and contexts. This also enables us to work with goals for subject mastery and future preparedness.

Some of the areas we can explore in Empathize and Define are:

LEARNERS. Student intersectionality – identities, needs, assets, interests, and lived experiences.

TEACHERS. Teacher intersectionality - identities, needs, assets, interests, lived experiences.

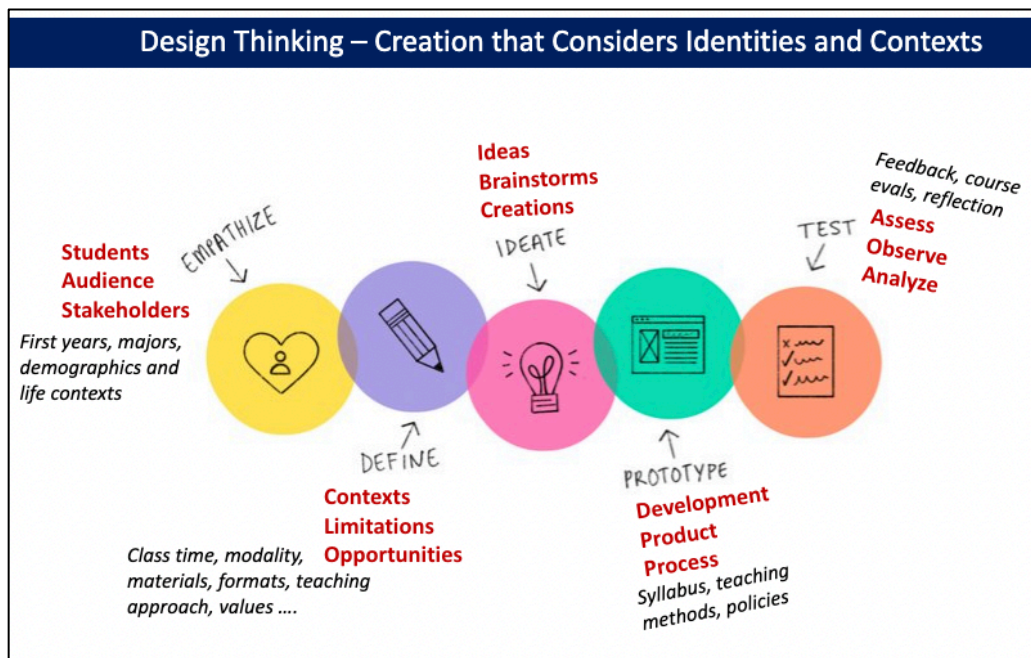
THE SYSTEM. Legacy paradigms – structures, practices, assumptions.

- What are the structures and processes that exclude diversity and limit learning?
- What are the structures and processes that support diversity and learning?

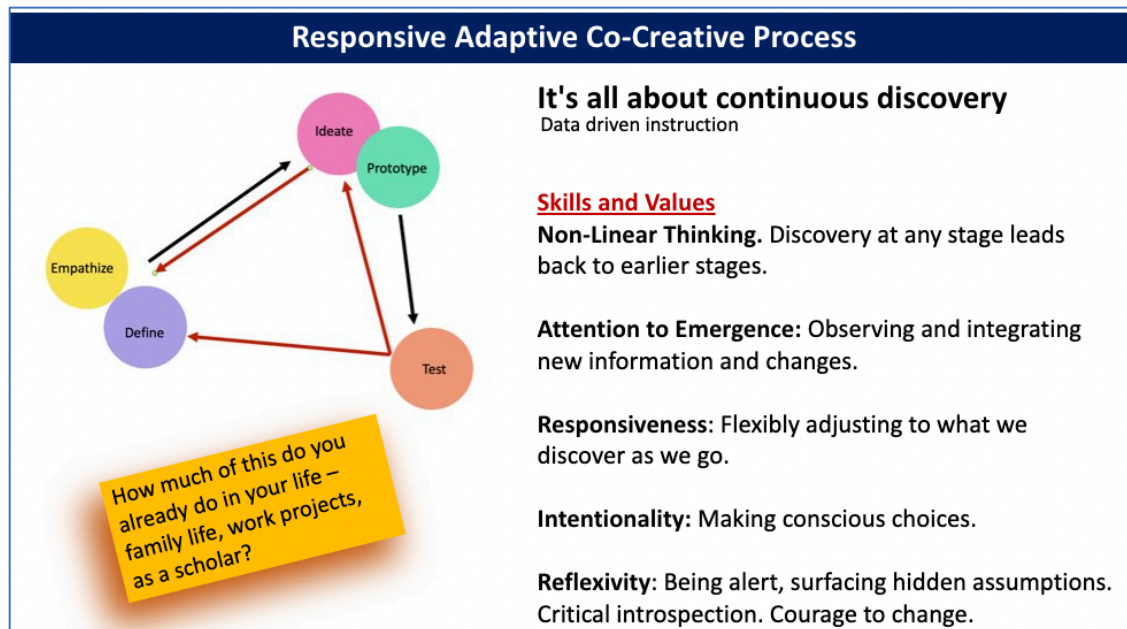
THE MISSION. What core beliefs, values, goals must we intentionally change in these areas?

- Physical spaces – on-ground, digital, learning environments
- Digital spaces, tools, and access
- Policies and practices – class policies, institutional policies
- Co-curricular services, programs, and opportunities
- Language – opaque, punitive, inviting
- Content – curricula materials, authors, topics ...
- Community & belonging – representation, inclusion, mattering
- Time – class scheduling, duration, deadlines
- Methods – lectures, online/on-ground, discussions, modalities (written, visual...)
- Assessments – high-stakes testing, grades, assignment types ...
- Assumptions – definitions of success, excellence, rigor, failure ...

Design Thinking for human-centered education is iterative and reflexive



In practice is often works like this:



Design thinking is not a linear process, which is why we use the concept of “prototype”. Teaching is emergent and moves through a reflexive cycle; we use what we have designed but remain alert for information to improve our prototype.

Reflect: A brief auto-ethnography of your intersectional identities and contexts

1. Use the ideas above from complex intersectional identities and socio-ecological determinants of development and learning. What histories, identities, social roles, and responsibilities do you embody that emerged explicitly in the identity map you sketched? Did anything surprise you and why?
2. What are the privileges you embody and where do you not have privilege or are marginalized or blocked? When and how did you come to be aware of your privilege, power, disempowerment.
3. How did your privilege or lack of privilege play out within your schooling journey, especially at college level? Was it different at different levels of school and why do you think it was (or not)?

Further Explorations

Carbado, D. W., Crenshaw, K. W., Mays, V. M., & Tomlinson, B. (2013). INTERSECTIONALITY: Mapping the Movements of a Theory. *Du Bois Review: Social Science Research on Race*, 10(2), 303–312. [Link to Article](#).

Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics. *University of Chicago Legal Forum*, 1, 31. [Link to Article](#).

Jacobson, D., & Mustafa, N. (2019). Social Identity Map: A Reflexivity Tool for Practicing Explicit Positionality in Critical Qualitative Research. *International Journal of Qualitative Methods*, 18, [Link to Article](#)

Owen, C. (2006). Design Thinking: Notes on its nature and use. *Design Thinking*, 14. [Link to Article](#).

Panke, S. (2019). Design Thinking in Education: Perspectives, Opportunities and Challenges. *Open Education Studies*, 1(1), 281–306. [Link to Article](#).

Website [Inclusive Language Guidelines](#). American Psychological Association. Comprehensive overview of different dimensions of identity with guidelines and further research connections.

Chapter 5 - Future-Focused Vision and Mission

In the earlier chapters, you have explored key mindsets and frameworks from TD pedagogy:

1. The principles of TD pedagogy and the overarching goal to move from a Transmission to an Empowerment approach to teaching and learning.
2. Reflexive thinking through double-loop learning
3. The nature of systems, and power dynamics in human social systems rooted in difference as “less than.” Specifically, we explored the misalignment of the education system with current and future contexts
4. Multi-ontology thinking using the Cynefin framework to engage reflexively in sense-making and adaptation, especially the power of Complex domain thinking.
5. The process of paradigm shift as an expansion and transformation of dominant paradigms or narratives, principles for transformation work, and the resistance many have to paradigm shift and the power
6. Justice framework based on Diversity, Inclusion, and Equity work, a systems-based approach for understanding diversity using the frameworks of complex intersectional identities and socio-ecological contexts of identity that present individuals as microsystems embedded in and moving within multiple social systems. The use of Design Thinking as an iterative tool or process to intentionally design teaching and learning using Empathy and context Definition to inform design.

In this Chapter, you begin to look forward into the future of education and the part you can play in shaping that future. This is a chapter that we hope will engage your imagination and actions for transformation. The first step in transforming the legacy system and developing a new journey into the future is to intentionally define our destinations. What is our transformative vision and what specific outcomes or goals do we set?

Your exploration will take you through the following sections:

1. Re-imagining education to articulating a future-focused vision and mission development.
2. Explore outcomes taxonomies – Bloom, Fink, and the Essential Learning Outcomes – as part of our toolkit to formulate goals and outcomes to activate our vision and mission.
3. Backward Design as a process – starting with the ends in mind – as an application of Design thinking in developing courses.
4. Develop a transformative teaching metaphor.

Counter Mapping the Education Story: Imagining the Future



An overarching goal of TD pedagogy is to shift education from a Transmission model that perpetuates the legacy system by bringing in new stories of teaching and learning toward an Empowerment model that reimagines education by embracing the diversity of learners and contexts.

Counter mapping using systems, complexity, design, and reflexive double-loop learning looks at what there is in the system that is unjust as well as what is NOT there. What would equity-minded course design look like, what are new goals and outcomes for justice in learning and preparing for the future, what would inclusive, equity-minded assessment and teaching practices look like? We can counter map many aspects of our teaching to create a new – just – normal. Much depends on our ability to always center learners and contexts, and to embrace the dissonance of Aporia and Complex domain thinking.

So much depends on a vision – a re-imagination – of the future.

Exploring Outcomes Taxonomies

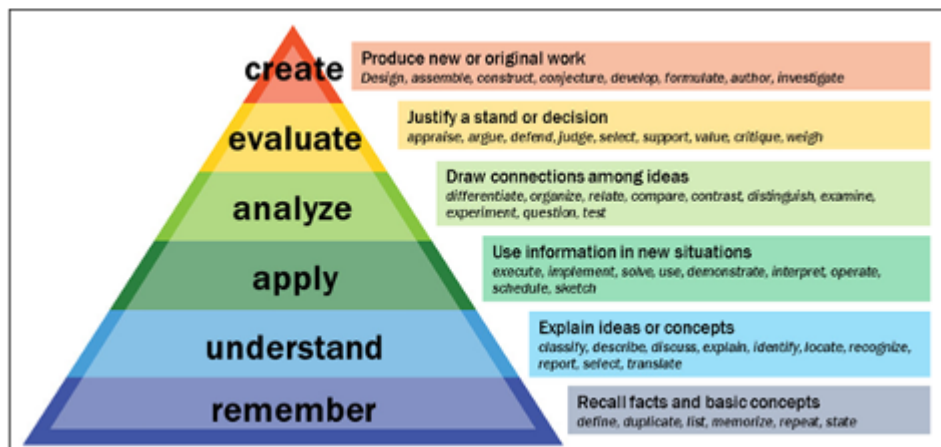
Outcomes taxonomies categorize cognitive, social, and emotional dimensions of learning that help us design teaching and learning destinations toward which we can intentionally guide learners. Please remember these are convenient categories but they are not sequential or linear and that they overlap.

Bloom's Taxonomy

Bloom's taxonomies are named after Benjamin Bloom who chaired a committee of educators in creating a set of taxonomies or learning objectives in the early 1950s. Their aim was to improve curriculum design and assessment. They categorized educational objectives as Cognitive, Affective, or Psychomotor outcomes. Anderson, Krathwohl, et al. revised the taxonomy in 2001.

- **Cognitive:** Remembering, Understanding, Applying, Analyzing, Evaluating, Creating
- **Affective:** Receive, Respond, Value, Organize (accommodate), Characterize (adopt perspectives)
- **Psychomotor:** Perceive, Sets (ready to act), Guided Response, Mechanism, Complex Overt Response, Adaptation, Origination.

The most well-known is the Cognitive Taxonomy, not surprising as education and assessment in particular in most subjects have focused on cognitive skills. The other two taxonomies were not as well developed and later research in psychology and pedagogy developed different models that focus on affective and psychomotor aspects of learning. However, it is good to know that even as far back as mid-20th century, educators were concerned about these areas of learning. See below for a list of references that address this more specifically.



This taxonomy is presented hierarchically based on the tradition of transmission-teaching, where the instructor transmits or provides information that the learner passively accepts and learns. Therefore, it made sense to have a progression from lower order to higher order thinking. We now know that depending on our methods of teaching, these cognitive dimensions can be engaged, activated, and developed simultaneously.

An alternative way to think about Bloom's taxonomy



Is learning hierarchical?

The lower levels of “Remember” and “Understand” predominate in transmission approaches to learning and assessment, where the assumptions include a canon of knowledge that is imparted by the teacher. However, we know from research in learning theory, active learning, and learning motivation that learning is not hierarchical. The cognitive processes of creation, evaluation, analysis, and application can be

used to help learners construct knowledge – to know and understand.

In addition, we teach in a world where information is widely available. The teacher is not the only source of input; the transmission model begins to give way to an empowerment model where learners need agency to seek information and build knowledge that connects meaningfully with their lived experiences. We can, in fact, work less hierarchically to address “remember” and “understand” areas of learning through integration of the other categories in this taxonomy.

Understanding this raises questions, for example: Why do we still need closed-book, timed exams when knowledge seeking, gathering, and construction in the real world is more often collaborative, consultative, and uses resources from multiple sources? Why must we use a single textbook when learners can gather information from databases and web searches, while developing information literacy skills to do good searches, evaluate sources, and synthesize information?

From the perspective of constructivist epistemology, active learning methods using projects, peer-based learning, portfolios, arts-integration etc., can integrate higher order thinking from the start. We can support students in using the create, evaluate, analyze, and apply levels to build knowledge and skills, while developing useful life and work capacities and skills.

Here are 2 examples:

- **Political Science.** Rather than a lecture-test-final paper approach in American Politics – students interview community members, gather and apply ideas from readings and lectures, analyze and evaluate information they gather. Instead of a final paper, they do a multimedia presentation about the meaning of Democracy, thus building knowledge and understanding of a subject area while also developing many other empowering and meaningful skills and capacities.
- **Mathematics.** While learning and practicing problem sets in parabolic curves with the teacher, students explore applications in wider society and in art, or the history of this topic area, creating a public poster presentation of parabolic curves. This integrates higher order thinking with basic mathematical mastery, builds broader critical thinking and collaboration skills in an authentic way that makes learning meaningful.

Fink's Taxonomy



Dee L. Fink's (2003) Taxonomy of Significant Learning addresses education for a diverse, interconnected, and information-saturated world that is in constant flux and hence increasingly unstable and unpredictable. The guiding question this taxonomy addresses is what skills and capacities does an individual need to be ready to encounter and flourish in such a world? It is also a great taxonomy with which we can design for greater inclusivity and equity.

Adapted from: Fink, L. D. (2003). Creating significant learning experiences: An integrated approach to designing college courses. Jossey Bass.

Fink's Taxonomy integrates these 6 areas.

1. **Foundational Knowledge:** Facts, principles, relationships (contents) students must understand and remember Similar to Bloom's taxonomy – Remember and Understand categories.
2. **Complex Application:** Physical and/or cognitive engagement in problem solving, decision-making, creative thinking. Able to integrate and work with complexity, flexibility, and process. While similar to Bloom's category of Application, the focus is not on applying
3. **Integration:** Identify and connect different subjects, perspectives, theories, trends. Inter- and transdisciplinary.
4. **Human Dimension:** Gain self-knowledge. Learn and to interact with others. Empathy and connection.
5. **Caring:** Finds meaningfulness and relevance, a sense of values and interests associated with learning and knowing.
6. **Learning How To Learn:** Metacognition and self-regulation, Reflexivity, Ability to be a lifelong learner.

Significant learning is:

- **Learning-focused** rather than content-centered, hence optimizes active processes.
- **Embodied and transformative** – there is significant change in the learner:
 - Embodied by the learner. Lasts beyond the end of course as applicable knowledge and habits of mind.
 - Transformative - impacts personal, professional, social, or civic dimensions. Changes how students perceive, think, feel, or act in real life.
- **Integrated.** All components work together for significant learning to happen.

The first 3 categories – Foundational Knowledge, Complex Application, and Integration -seem to be similar to Bloom’s taxonomy – Remember and Understand, Application, Analysis and Evaluation. However, the integration in Fink’s taxonomy moves beyond subject matter mastery to human development even as we facilitate learning the subject. This is a significant shift that brings meaningfulness and preparation for ethical engagement with the world into the heart of teaching and learning design and facilitation.

The last 3 categories – Human Dimension, Caring, and Learning How to Learn – bring teaching and learning even more clearly into the space of meaningful learning for life. Here we have a holistic guide to teaching design that looks at identity and capacity formation in learners. In learning our subject matter, say Chemistry, Psychology, English, how do we also ensure students develop self- and other-awareness, and learning to empathize, collaborate, communicate well with different people and perspectives? How can we build processes that engage learners meaningfully so that the subject comes alive for them with relevance to the larger world in which they live? How can we help them become life-long learners who will be able to learn, unlearn, and relearn in a world of change and uncertainty?

Fink’s taxonomy contributes to inclusive teaching design

Fink’s taxonomy focuses the design of teaching and learning on the learner and meaningfulness in learning. It also connects to a systems and design thinking approach to teaching and helps us move toward transformative, equity-minded teaching.

- **Connecting with Complexity – Systems-Based Design Thinking** – Fink’s taxonomy focuses on learners and contexts and processes of learning. This helps us embrace and integrate the complexity of diverse identities, histories, and experiences learners embody. Fink’s taxonomy is also supported by learning science research on how engagement and learning happen.
- **Holistic, Transformative, Capacity Development** that moves beyond subject mastery. In centering students, Fink’s taxonomy leads toward designing teaching and learning to empower learners in giving them agency in learning how to learn, in developing meaningful connections to the subject, and in fostering inter-personal empathy and skills. Fink’s model moves teaching away from the transmission model toward the empowerment model.

In thinking about diversity, inclusion, equity, and justice – this is a useful taxonomy to ensure that we include diverse learners equitably and meaningfully so that their diverse voices are honored and brought into the learning process. It also helps us think about future-focused equity and how we prepare all learners to enter their futures prepared to engage positively with differences, to care about contributing to a sustainable and peaceful world.

LEAP Essential Outcomes

[Association of American Colleges & Universities \(AAC&U\)](#) created the **Essential Learning Outcomes** (ELOs) as part of their LEAP project - Liberal Education and America's Promise – integrating research, advocacy, and campus work to champion the importance of liberal education for the 21st century.

The ELOs are useful in transforming teaching to put diversity, inclusion, equity, and justice at the heart of teaching and learning. The driving question concerns the contents and outcomes of education in preparing learners in ways that enhance their being and lives while contributing to a thriving democracy. They are responsive outcomes in being regularly reflected on and researched to remain aligned to equity and justice in current and future educational missions.

Essential Outcomes – outcomes for success in life, civil society, and work in the 21st century.

1. **Knowledge of human cultures and the physical and natural world.** Including: Science and mathematics, social sciences, humanities, histories, languages, the arts.
 - **Focused on:** Engagement with big questions, both contemporary and enduring.
2. **Intellectual and practical skills.** Including: Inquiry and analysis, critical and creative thinking, written and oral communication, quantitative literacy, information literacy, teamwork and problem solving.
 - **Practiced extensively** across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance.
3. **Personal and Social Responsibility.** Including: Civic knowledge and engagement local and global, intercultural knowledge and competence, ethical reasoning and action, foundations and skills for lifelong learning.
 - **Anchored** in active involvement with diverse communities and real-world challenges.
4. **Integrative and Applied Learning.** Including: Synthesis and advanced accomplishment across general and specialized studies.
 - **Demonstrated** through the application of knowledge, skills, and responsibilities to new settings and complex problems

Connect outcomes to your emerging philosophy

Teachers most commonly use Bloom's taxonomy. However, Fink and LEAP frameworks offer ways to think about designing teaching that align with an ethical approach to education:

- Moves teaching design from a linear content-based transmission approach toward a student- and learning focused empowerment approach.
- Brings in aspects of learning supported by learning science such as meaningfulness and connections to the larger world and lived experiences, interpersonal dimensions of engagement, motivation, and learning, a range of literacies, as well as identity development for personal and social responsibility.

Reflect: Make some notes about the outcomes that you would choose

1. Review notes and reflections from previous topics in understanding legacy education and the complexity of identities and contexts at the center of teaching and learning. In thinking about transformations that move teaching from the Transmission to the Empowerment approach, what outcomes align with your values, beliefs, and mission or goals as an educator?
2. Which outcomes are least addressed by teaching practices in your discipline? Can you think of innovations to bring them in? For example, how would you bring quantitative literacy into a literature course? Or creative writing into a STEM subject? How do you bring in ethical reasoning into a course in statistics?
3. Which of these outcomes can you use in designing your courses and assignments? Can you ensure that you integrate Fink's Taxonomy as well as the ELOs with Bloom's taxonomy in planning a course?

Backwards Design: Starting with the End in Mind

In Chapter 4, exploring Design Thinking, you did an imaginary course design scenario that showed the importance of pausing before Ideating to Empathize and Define, i.e., consider learners and contexts as integral to any educational process.

In approaching course design, identify your instinct or habit. Are you:

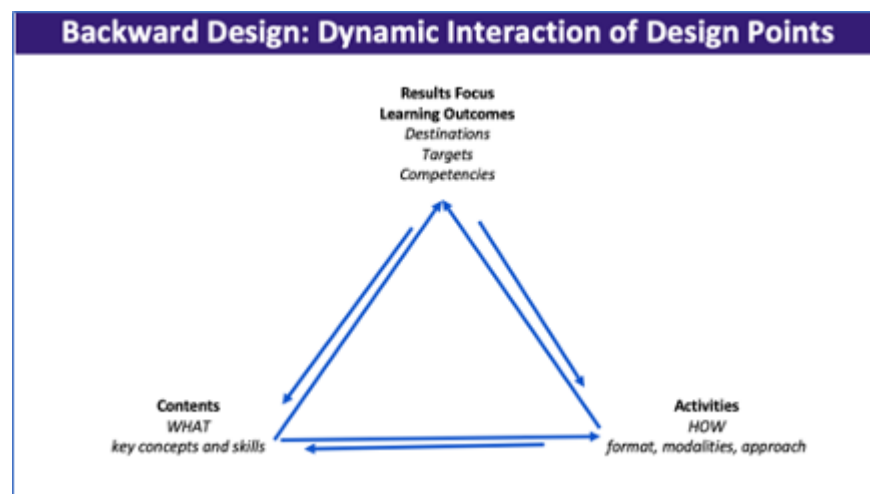
- **Content-focused?** Your first thoughts are about texts or what to cover in the course.
- **Activity-focused?** Your first thoughts are about the kinds of activities you would use.
- **Results-focused?** Your first thoughts are to generate learning outcomes

None of these are wrong in themselves and we need to do all of these in relation to each other.

However, starting with outcomes helps us to work more effectively and coherently in pulling together the contents and activities. We call this BACKWARD DESIGN, a commonsense notion of designing with the end in mind.

- What are the intended outcomes? - destinations, deliverables, results, products.
- How will we know we're moving along well? – progress checkpoints, feedback, and revision.
- What will we do to get there? – plans, maps, tools, coordination, work processes.

We can also represent it in this way, as a triangle of processes for Results, Contents, and Activities in dynamic interaction with each other. Putting RESULTS at the top of this dynamic triangle, positions thinking about results or outcomes as a first consideration, while acknowledging that we might iteratively move between our outcomes and the contents and activities we want to integrate.

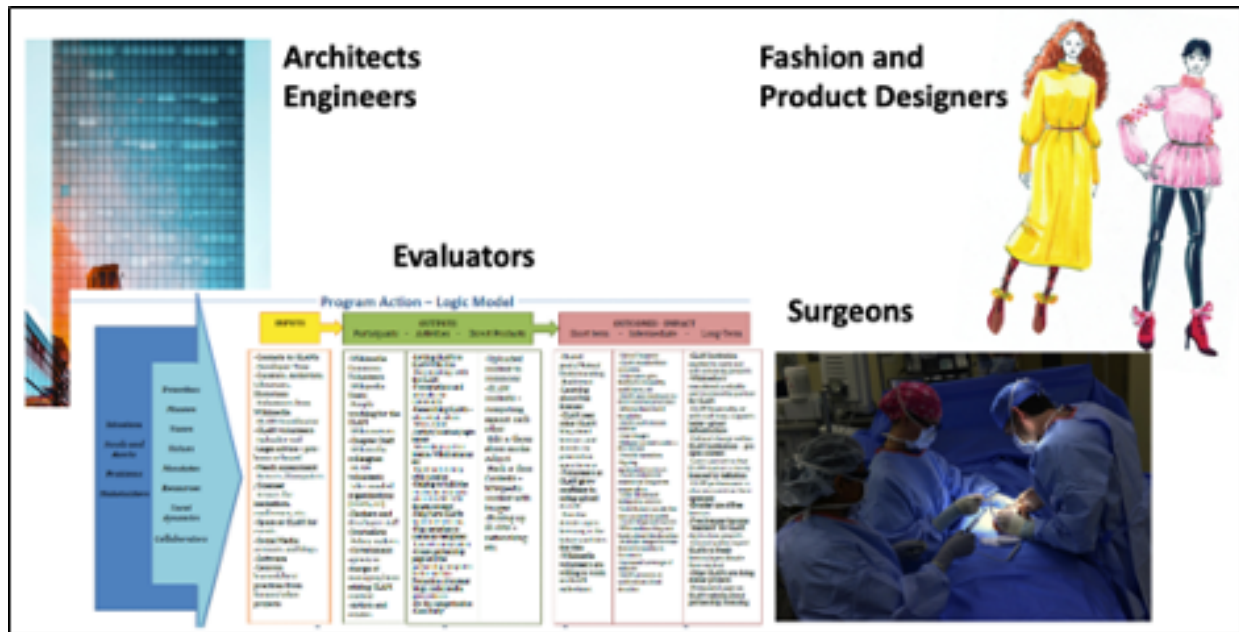


Backward design is more common than we might think.

We engage in Backward Design in many aspects of life - planning vacation trips, weddings, work projects, family events, constructing buildings and bridges, media campaigns etc.

“Starting with the end in mind means to start with a clear understanding of your destination ... to know where you’re going so you better understand where you are now, so that the steps you take are always in the right direction.” - Stephen Covey. The Seven Habits of Highly Successful People

Here are some professions where backward design is integral.



Can you think of other areas of work? Do you see Backward Design as an approach in research?

Backward Design simply means knowing what we want to see happen, then putting plans into place in steps that will get us there.

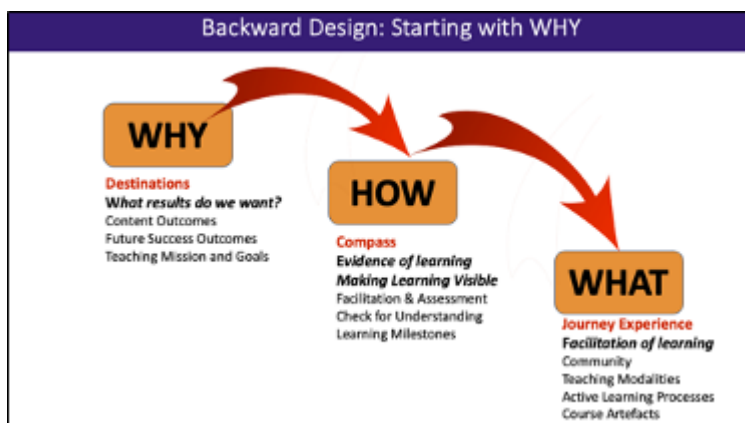
Equity-Minded Backward Design uses Design Thinking to always begin with Empathize and Define to understand and integrate people and contexts in planning.

Responsive Backward Design uses Design Thinking with a reflexive process that stays alert to emerging information and changes in people and contexts and adjusts or adapts as needed, while still navigating toward the intended destinations or goals. Sometimes, situations will warrant that the outcomes or goals are also adjusted.

Backward Design in Pedagogy

Backwards Design in pedagogy has been around for a while, at least since the 1947 publication of *Basic Principles of Curriculum and Instruction* by Ralph Tyler. It was re-conceptualized and made more visible by Grant Wiggins and Jay McTighe in their 1998 book, *Understanding by Design*. Since then, Backward Design has been used widely as a framework in establishing key goals in course design as the start to aligning goals with assessment plans and activities.

Watch: [Shelly Moore explains Backward Design](#) [5:50 mins]



Adapted from Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*.

Using the metaphor of teaching-learning as a journey:

WHY. OUTCOMES = destinations. To what ends are we guiding our students? Therefore, we think about both knowledge/subject outcomes and capacity development to flourish beyond the course and into their futures. We are also guided by our philosophy and approach. As transformative educators seeking new narratives of justice and joy in learning, how do considerations of Diversity, Inclusion, and Equity shape our outcomes? Outcomes development for course design is a powerful place to begin transformative work.

HOW. EVIDENCE OF LEARNING = compass. As we journey, remaining nimble and responsive comes from integrating formative assessments – formal and informal – that make learning visible to both teachers and learners. Again, using Design Thinking’s focus on people and contexts, we create new strategies for inclusive, equity-minded learning milestones to help students adjust to optimize learning.

WHAT. JOURNEY EXPERIENCE = facilitating the journey. These are the activities and modalities for teaching and learning, creating connections with and among students, and the course artefacts or visible signs of learning to indicate getting to the destinations. Again, you have opportunity here to transgress, transcend, and transform the learning journey into one that is meaningful, relevant, and joyful.

Adding An Equity-Minded Dimension to Backward Design

Design thinking and teaching philosophy integration

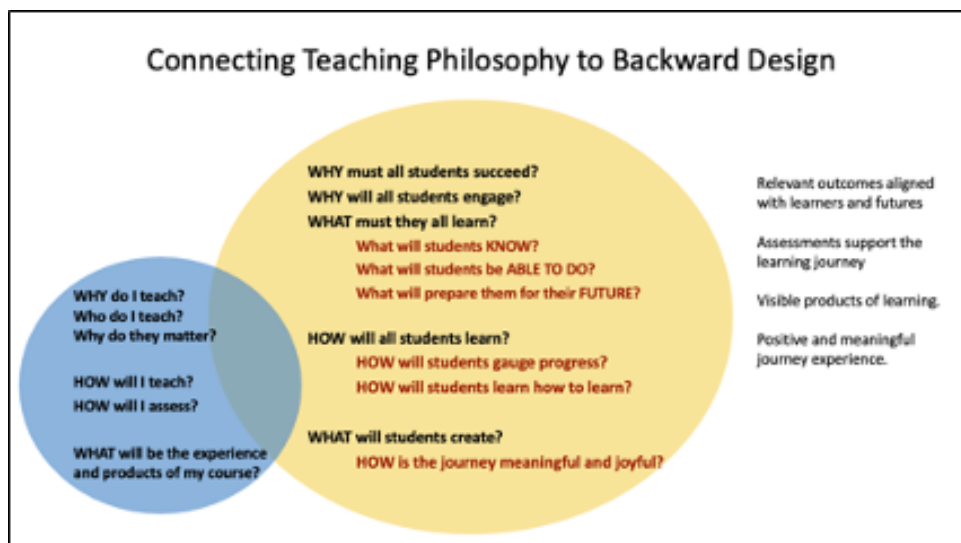
Parker Palmer (1998/2017) describes the embodied nature of teaching – “We teach who we are”, i.e., we bring all of ourselves into the design and practice of teaching. Beyond knowledge of teaching, we bring a philosophy or an integration of values, passions, and goals into the process. Doing this intentionally in course design helps us to ensure that we are working intentionally and coherently.

Recalling the Cynefin framework, we remain alert to the danger of Clear and Complicated thinking in course design which is a deeply habituated area. Courses and course syllabi often are created based on “what we’ve always done”, drawing from canonical knowledge bases and disciplinary methods. We can easily perpetuate non-inclusive and inequitable legacy practices.

As we engage in Backward Design, Design thinking grounded in our teaching philosophy helps ensure we are creating learning environments and processes that are meaningful and relevant to our students and that have an inclusive, ethical focus.

Philosophically grounded Design thinking within Backward Design is a powerful tool.

- Our philosophy (mission and methods) gives us questions of purpose - why I teach, who I teach, and why they matter; questions of method – how I teach and assess learning, and a question of experience; what we will create together in a learning journey?
- These inform how we apply Backward design using engagement and outcome questions – Why must all learners succeed? What must they all learn – what will they be able to know and do? What will prepare them for their future? Questions of learning – how will they know they are learning? How will they learn how to learn?
- The final results we seek are relevant **outcomes** aligned with learners and futures, **assessments** that support the learning journey with visible products of learning, and **activities** or processes that create a meaningful learning experience.
-



Resource: Examples of Inclusive Backward Design.

NOTE: Look out for many of these examples as we go through Phase 2 of this course in developing teaching tools and strategies.

Here are some examples of inclusive backward design elements that you can adopt and adjust for your own course design

OUTCOMES – meaningful to learners - contents and capacities for life. For example:

1. Apply literary deconstruction to analyze Shakespeare's plays to reveal power dynamics.
2. Explain how computer programming is used for both ethical and unethical purposes.
3. Collaborate with a diverse group in a creative project.
4. Demonstrate critical thinking in spoken and written debate.
5. Engage with a community to explore social networks and community assets.
6. Find connections and differences between historical and current events.
7. Use descriptive statistics to explain a social issue.
8. Find and explain examples of calculus used in real world settings.

ASSESSMENTS – flexible and formative of learning. Rather than just mid-terms and finals that are summative in assigning a grade, design flexible assessments that support and facilitate learning in non-punitive ways for a diverse and complex student group. For example:

1. Student choice of assessments from a given range.
2. Explain the “why” of assignments - Give rubrics with assignments (transparent design).
3. Use rubrics as guides for feedback and revisions – teacher, peer, and self-review.
4. Flexible or co-created deadlines.
5. Low stakes or ungraded, multiple attempt tests (checks for understanding).
6. Opportunities to revise for improvement – retake tests, rewrite papers etc.

ACTIVITIES – flexible and invites all learners. Supportive of engagement.

1. UDL and multiliteracies principles in teaching, class activities, and in assignments to integrate multiple ways of engaging, self-expression, representing information.
2. Flexible engagement – students have choices, use synchronous and asynchronous processes.
3. Active inclusive learning activities in class as well as asynchronous activities in an LMS.
4. Use peer-based learning and co-create with students. Invite their contributions.
5. Use multiple modes and forms of engagement and participation.
6. Provide opportunities for peer-engagement in and outside of class.

CONNECTION - Develop a student-focused presence

1. Use relational language (I, you, we) in crafting syllabi, assignments, rubrics etc.
2. Use an inviting tone – move away from compliance and authoritarian language.
3. Reframe course policies as guidelines for success.
4. Seek out and be open to student needs, concerns, choices.
5. Share institutional resources and opportunities to sharpen learning.

Metaphorical Thinking

This section of Chapter 5 covers Metaphorical thinking.

Metaphors are a form of thinking and communication that permeates all languages and cultures. In TD practice, metaphors are powerful tools for crossing and connecting across boundaries and to transform how we think and work. In this course, you have already encountered many metaphors – the industrial model of education and education in the Transmission mode, the notion of a web or network in systems thinking, the idea of stories to represent paradigms so that we can grasp the way stories are shaping patterns. Now, we will explore metaphors more explicitly so that you will be aware of metaphors as stories that shape how we think about education, and how changing the metaphor can transform how we think about teaching and learning.

Overview of metaphors

We are highly visual beings – we drew before we wrote, we dreamt before we spoke. Imagination (IMAGE-ination) is one of our most powerful gifts. Metaphors come from Greek *metaphora* or “transfer” in the sense of carrying meaning over from one word to another. They are essentially a bridge connecting thoughts with a network of associations, values, emotions, beliefs, and lived experiences.

Hence, metaphors communicate more than ideas. They are prisms for clarifying, revealing, and sharing understanding, deep connections, values, and priorities. Metaphors have been at the heart of religions, cultural identities, scientific progress, and social revolutions.

- Gandhi galvanized a nation with the metaphor of the spinning wheel, and salt gathered on a seashore.
- [Martin Luther King](#) spoke of contrasting metaphors that viscerally connected with his audience: “this sweltering summer of the Negro’s legitimate discontent will not pass until there is an invigorating autumn of freedom and equality”.
- Educational debates between teacher-centered and child-centered approaches are illuminated by metaphor; are we molding students who are putty in our hands, shaping them as we see fit, or providing fertile soil and sunshine for a garden of different plants to grow to their own heights and shapes? Each metaphor offers new perspectives and challenges in education.

Metaphors help our minds bridge the gap between feeling and expression. They help us see beyond the ordinary and understand things that may be hard to articulate or communicate. Have you struggled to explain in words the precise color and sensation of your feelings? But use a metaphor, like ‘her words blanketed me from my cold, empty world’, ‘my feet danced a mad jazz riff all the way home’ and you make a bridge that helps another person connect with your thoughts and feelings.

We often associate metaphors with poetry and art. Here is the poet Langston Hughes who in a few short lines, communicates the spirit of hope.

Hold fast to dreams
For if dreams die
Life is a broken winged bird
That cannot fly.

The simplicity of this metaphor is pure magic! These are 4 lines that a child and an adult could understand. In 4 lines we see and feel and know so much more than we might at an hour's lecture on 'The Importance of Actualizing Your Potential'. And we don't fall asleep...

Metaphors in daily language and thought

Metaphors are more than the language of poets. They are deeply embedded in how we think, hence often quite invisible to us. Metaphors abound in ordinary discourse:

- We **weave** ideas together.
- We **build** ideas on good **foundations**.
- We **hit a wall** or exploit **loopholes** in policy making.
- We refer to a **flood** of information and **drown** in email.

Metaphors give us insight into the deep, unconscious assumptions and values that shape our thought, perceptions, responses, and actions (Lakoff and Johnson, 1980) and societies have central metaphors that shape perspectives.

“Metaphor is for most people a device of the poetic imagination and the rhetorical flourish—a matter of extraordinary rather than ordinary language. Moreover, metaphor is typically viewed as characteristic of language alone, a matter of words rather than thought or action. For this reason, most people think they can get along perfectly well without metaphor. We have found, on the contrary, that metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature.

The concepts that govern our thought are not just matters of the intellect. They also govern our everyday functioning, down to the most mundane details. Our concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities. If we are right in suggesting that our conceptual system is largely metaphorical, then the way we think, what we experience, and what we do every day is very much a matter of metaphor.

But our conceptual system is not something we are normally aware of. In most of the little things we do every day, we simply think and act more or less automatically along certain lines. Just what these lines are is by no means obvious. One way to find out is by looking at language. Since communication is based on the same conceptual system that we use in thinking and acting, language is an important source of evidence for what that system is like.

Primarily on the basis of linguistic evidence, we have found that most of our ordinary conceptual system is metaphorical in nature. And we have found a way to begin to identify in

detail just what the metaphors are that structure how we perceive, how we think, and what we do.” (p. 8)

Watch: [Metaphors we live by.](#) [12:05 mins]

An explanation of metaphor based on the work by Lakoff and Johnson.

What metaphors reveal

Lakoff and Johnson examined the concept of ARGUMENT and the conceptual metaphor in the English Language - Argument is war. They found that English is full of variations of this metaphor that reflects battling and that shape our actual actions:



[Link to Image source](#)

Your claim is **indefensible** - He **attacked** every **weak point** in my argument - His criticism was right on **target** - I **demolished** his argument - You disagree? OK, **shoot** - If you use that strategy he'll **wipe you out** - He **gained ground** in the argument - Put up a good **defense** - He **shot down** all my arguments - The **thrust and cut** of debates - **Winning and losing** arguments

In classrooms and workspaces, people often are afraid to put forth an idea because it might be wrong and get shot down, and they might “lose face”.

Here is an excerpt where they explain this metaphor as used in the English Language.

“...we don't just *talk* about arguments in terms of war. We can actually win or lose arguments. We see the person we are arguing with as an opponent. ... Many of the things we *do* in arguing are partially structured by the concept of war. Though there is no physical battle, there is a verbal battle, and the structure of an argument—attack, defense, counterattack, etc.—reflects this. ... The metaphor is not merely in the words we use—it is in our very concept of an argument. The language of argument is not poetic, fanciful, or rhetorical; it is literal. We talk about arguments that way because we conceive of them that way—and we act according to the way we conceive of things.”

“We act according to the way we conceive of things” – our internal, and often unconscious metaphors, that are just part of social-cultural discourse, shape how we respond to the world. The metaphor Lakoff and Johnson examine is locates thinking in a binary space; the options in a discussion or debate are to win (get your point across and persuade the other “side” to accept it) or lose (give up on the point you want to make because you are not able to persuade the

other side to accept it). Notice again the imposition of difference (in this case ideas) existing in binary relationship with each other.

Lakoff and Johnson then examine what might happen if the concept of argument was viewed from the perspective of another culture, where the central or conceptual metaphor for “argue” is dance.



[Link to Image source](#)

Find a balance - Going back and forth and around - Multi-directions - Movement exchange - Supporting each other through movement - Observation and listening - Partner and collaborator - Developing through resonance - Yes ... and - Synthesize and create - Improvise and discover.

“Imagine a culture where an argument is viewed as a dance, the participants are seen as performers, and the goal is to perform in a balanced and aesthetically pleasing way. In such a culture, people would view arguments differently, experience them differently, carry them out differently, and talk about them differently. But we would probably not view them as arguing at all: they would simply be doing something different. It would seem strange even to call what they were doing "arguing." Perhaps the most neutral way of describing this difference between their culture and ours would be to say that we have a discourse form structured in terms of battle and they have one structured in terms of dance. “

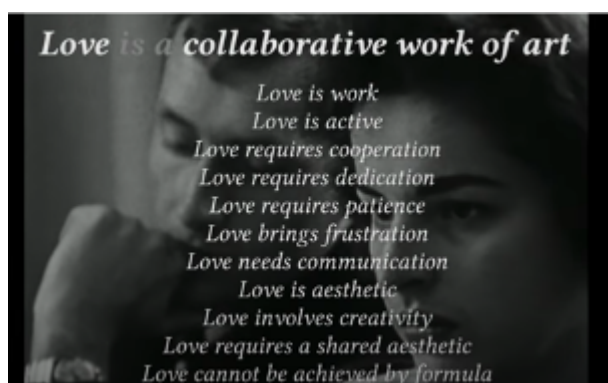
In this culture where the metaphor of dance shapes their sense of argument, the process is less linear and binary - it could be circular, supportive back and forth, or amplifying and extending. An onlooker coming to this culture from the culture of English Language might be confused at the flow of conversation or discussion that seems non-linear, where stories are told that might not immediately connect. Dance is a whole new paradigm, with different values, beliefs, and assumptions about “argument”; one must shift perspectives entirely to make sense of this culture’s notion of argument.

Culture shock and conflict often arises from the juxtaposition of very different central metaphors or cultural assumptions. For example, European settlers in the New World acting from an anthropocentric metaphor could not fathom Indigenous people’s perspective of the human as stewards rather than owners of land. European languages about land and land use were grounded in central metaphors of boundaries, ownership, and power. The Indigenous people’s central metaphor about land use was of kinship with nature.

Here is another common theme in our lives – LOVE. Here are many different metaphors for love, each with a set of embedded assumptions and feelings.

- Love is blind
- Love is a dog from hell – Charles Bukowski, "Love Is a Dog From Hell"
- Love's wing molts when caged and captured, Only free he soars enraptured. – Thomas Campbell, "Love's Philosophy"
- Love is a crocodile in the river of desire.– Bhartrhari, "Śatakatraya"
- Happiness is the China shop; love is the bull. – H.L. Mencken, "A Little Book in C Major"
- They say love is a two-way street. But I don't believe it, because the one I've been on for the last two years was a dirt road. – Terry McMillan, "Waiting to Exhale"

But what happens when we change the metaphor intentionally?



Love is a collaborative work of art? When we unpack that into different aspects of the idea of collaboration in art making, it reveals a set of values and actions of love being an artistic process that can shift how we think about love. Do you find this shift delightful because it aligns with your perspectives of Love? What aspects of this metaphor of love as artistic process surprises you? Or puzzles you? Paying attention to how metaphors connect (or not) with us, reveals our implicit values, assumptions, and orientations to that idea.

Metaphors about teaching and learning

Here are some metaphors about education. Think about the values, beliefs, and assumptions about teaching and learning in these examples:

1. "Education is not the filling of a pail, but the lighting of a fire" – W. B. Yeats.
2. Teaching is like white-water rafting: "Periods of apparent calm are interspersed with sudden frenetic turbulence. Tranquility co-exists with excitement, reflection with action. ... All teachers regularly capsize ... Being aware that we inherently face insolvable dilemmas in our teaching, and that we hurt from these, is an important indicator that we are critically alert." Stephen Brookfield, 2006; p.8 *The Skillful Teacher*

3. Friedrich Froebel, educator and originator of the term “kindergarten” (In German, a child’s garden) thought about teachers as gardeners.

Using metaphors as reflexive tools

Metaphors are not right or wrong – they reveal. Metaphors therefore are good reflexivity tools to surface and examine our values and assumptions.

Metaphors reveal and clarify perspectives. Used intentionally, they help us examine assumptions, deep-seated beliefs, and value. And by intentionally changing a metaphor, we can shift our perspectives. In fact, when we intentionally coin a metaphor (speaking metaphorically!), the metaphor is more salient because they are not the ones that pass unnoticed through long use.

Analyzing to create an intentional metaphor

The most revealing aspect of metaphors are when they break down and no longer apply to a situation or when they reveal things with which we disagree. This reveals what you really care about. Let’s take a look at a common example, and how one teacher used it reflexively to develop a more intentional metaphor.

Metaphor – teaching is growing a garden.



- Many elements of this metaphor aligned with and reflected their values & intentional goals – creating nurturing spaces, providing the right “nutrients” so the “plants” (students) can grow and stretch up in the sunshine. These were values that were explicit in their thinking.
- **However, there was a breaking point.** In this metaphor the plants are passive and are being “done to”, while the teacher/gardener controls everything. This did not align with this teacher’s explicit philosophy of active students co-creating learning with them.
- **Further analysis:** The teacher did some research and reflected on how plants actually grow. This is what they found - plants can be seen to be in a co-creative relationship with the gardener. Each plant has different characteristics and needs. The gardener

must get to know their plants well in order to design a space that invites and nurtures all plants to flourish. This deeper analysis revealed values of listening, empathy, 2-way communication, and responding actively in designing inclusively for diversity. What the teacher realized more explicitly was how important it was for them to ensure students had voice in the learning space and could bring their whole selves in. The gardening metaphor could be accurately reframed to show this.

Reframing the metaphor: The responsive gardener

It was tempting to move away to a new metaphor. But staying with the breakpoint and exploring it revealed more and the teacher reframed the metaphor to integrate what they learned about gardening.



The plants are in a co-creative relationship with the gardener. Each plant has different intersectional identities and needs. The gardener must get to know their plants well in order to design a space that invites and nurtures all plants to flourish. This revealed values of listening, empathy, 2-way communication, and responding actively in designing inclusively for diversity. In this analysis the teacher realized a value they knew they had, but saw explicitly how deeply important it was for them to ensure students had voice in the learning space and could bring their whole selves in.

Paradigm shift: A community garden.



In this metaphor, teaching is a community garden where it's no longer one gardener (teacher in the middle), but all students as gardeners growing their own plants (learning).

This significant shift revealed a deeply tacit assumption – teacher as the central figure. By playing with the metaphor, the teacher was able to see that they held this assumption, and then go on to transform their thinking. What if students had agency to lead themselves in growing their knowledge and skills? The teacher becomes a community garden guide and mentor, sharing knowledge with a young gardeners (learners) about the seeds and soil (contents) and how to garden (learning how to learn). This reflexive examination led the teacher to really think about what they cared about so tacitly that it was not immediately obvious. It also showed a deep assumption that they were then able to intentionally change - and with that also change how they designed their courses. This is how metaphors build a powerful reflexive habit of mind that translates into transformative action in our classrooms.

Distilling your teaching philosophy using metaphors.

Task: Use these guiding questions to analyze a metaphor about teaching to surface and examine your values, beliefs, and assumptions about teaching and learning. What does the metaphor you selected reveal about unconscious values, assumptions, and beliefs that you might have developed through your own journey through legacy education systems? How does this metaphor help you question, shift, and explicitly clarify your values, beliefs, and goals? Would you reframe the metaphor or find a new one?

1. Choose a metaphor for teaching. You can also draw it or paste an image.
2. What teaching and learning processes are represented through the metaphor? What is the role of the teacher and the learners? Consider what the metaphor tells you about elements of teaching and learning such as engagement and motivation, community, student autonomy, inclusion and equity, diversity, opportunities for experimentation or “failure” etc.
3. What does the metaphor imply about relationships - power, trust, authority, etc.?
4. How does this metaphor reveal or challenge assumptions in legacy teaching and learning?

Further Explorations

Explore AAA&U

- [ACC&U's ELOs page](#)
- [AAC&U's High Impact Practices page](#)
- [AAC&U's VALUE page](#)
- **High-Impact Educational Practices (HIPs)** - engaging and challenging students through first-year programs, intensive writing, collaborative assignments, undergraduate research, service learning, internships, learning communities, diversity experiences, and major projects that help students achieve Essential Learning Outcomes.

Backward Design

- Wiggins, G, & McTighe, J. (1998). *Understanding by Design*. ASCD.
- <https://www.edglossary.org/backward-design/> - **Glossary of Education Reform** is by the Great Schools Partnership in an effort to provide a good source explaining school-improvement ideas, frameworks, and strategies to support teachers, but also to create understanding among parents, journalists, and community members.
- **Authentic Assessments** - using students' own work and faculty-validated rubrics, probing whether individual students have developed essential capacities and can apply their learning to complex problems and real-world challenges. AAC&U developed a set of validated rubrics as part of their project, Valid Assessment of Learning in Undergraduate Education (VALUE).

Scholars of interest if you want to follow the thread of critical theory and postmodern thought:

- In education: Augusto Boal, Patricia Hills Collins, Kimberle Crenshaw, Angela Davis, Paulo Freire, bell hooks, Daniel Solorzano, Tara Yosso
- Philosophy and social critique: Michel Foucault, Luce Irigaray, Henry Giroux, Julia Kristeva, Herbert Marcuse, Theodor Adorno

Story and Social Narratives

- Bruner, J. (1988). Research currents: Life as narrative. *Language Arts*, 65, 574–583.
- Carter, K. (1993). The place of story in the study of teaching and teacher education. *Educational Researcher*, 22(1), 5–12.
- Chandler, D. (2007). *Semiotics. The basics*. Routledge.
- Giroux, H. A. (2010). [Rethinking education as the practice of freedom](#): Paulo Freire and the promise of critical pedagogy. *Policy Futures in Education*, 8(6). 715-721.
- Lyotard, J-F. (1984). *The postmodern condition. A report on knowledge*. University of Minnesota Press.
- Merleau-Ponty, M. (1945/2014). *Phenomenology of perception*. Routledge

- Petrilli S. (2015) [Identity Today and the Critical Task of Semioethics](#). In: Trifonas P. (eds) International Handbook of Semiotics. Springer, Dordrecht. Here is Susan Petrilli's website.
- Petrelli, S. & Ponzio, A. (2005). Semiotics Unbounded. Interpretive routes through the open network of signs. Toronto, Canada: University of Toronto Press.
- Schank, J. (2020). Inventing reality. Stories we create to explain everything. Gatekeeper Press.

Semiotics Maps and Counter Maps

- Peluso, N. L. (1995). Whose woods are there? Counter mapping forest territories in Kalimantan, Indonesia. *Antipode*, 27(4), 383–406.
- [Transpacific Project](#). This website re-stories the genealogy and relationships of the transpacific region.
- [The True Size Of..](#) A cool app. created by [James Talmage](#) and [Damon Maneice](#) that allows you to take a country and move it to other parts of the map and see how it seems to get larger or smaller as a result of map projection.
- [AuthaGraph Map](#) - Hajime Narukawa. Accurately represents size and focused on 21st century issues like diminishing polar caps.

Metaphors

- Lakoff, G. and Johnson, M. (1980). *Metaphors we live by*, University of Chicago Press.
 - This is the classic and groundbreaking exploration of how we use metaphors in our daily life.
- Geary, J. (2012). I is an other. The secret life of metaphor and how it shapes the way we see the world.
- Jensen, D. (2006). Metaphors as a bridge to understanding educational and social contexts. *International Journal of Qualitative Methods*, 5(1), 36–54.
<https://doi.org/10.1177/160940690600500104>
- Clandinin, D. J. (1985). Personal Practical Knowledge: A Study of Teachers' Classroom Images. *Curriculum Inquiry*, 15(4), 361–385. JSTOR. <https://doi.org/10.2307/1179683>

Phase 2 - Transformative Teaching Development
Sessions 6 – 12

Chapter 6 – Community: Meaning and Mattering

What is a sense of community? Before you dive into the material in this chapter, unpack your lived experiences in understanding “community”.

Task: Brainstorm: Drawing from your lived experiences.

How do you understand the idea of “community”? Make a list of words and phrases that define what “community” means to you. Or draw (find) a picture to show “community”.

Reflect: Respond to an extract about community

From the perspective of your own scholarly work and your lived experiences in all the spaces you have lived in or travelled through, how does this paragraph from the *Journal of Community Psychology* resonate with you?

"Sense of community is a concept that is primarily psychological: It refers to the personal knowing that one has about belonging to a collectivity. There is an *I-you* sense that differentiates oneself from the collectivity, and there is a *we* sense of belonging together. These are reciprocal aspects of belonging, each requiring the other. The United States is a particularly interesting social experiment, because it has been loosening the *we* sense into much more of an *I-you* sense. And the direction of that has been *I* versus *you* (rather than *I* and *you*), where the dominant process has been one of individuation and ego enhancement. American society seems to allow, even provide, maximum opportunities for the development of the ego. ... There is a yearning for community that has been growing steadily in America ..." Newbrough, J.R. and Chavis, D.M. (1986), Psychological sense of community, I: Foreword. *Journal of Community Psychology*. 14(1): 3-

Read: McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory *Journal of Community Psychology*, 14(1), 6–23.[12 pages] [Link to Article.](#)

MacMillan and Chavis define community as a subjective sense of belonging and relationality (I matter to you and you matter to me, we matter to each other), as well as a belief/faith that all our collective needs can be met through our commitment to be together. They look at communities defined by geography/territory (neighborhoods), by relationships (spiritual, professional) and define a sense of community through 4 elements:

Membership: “The feeling of belonging or of sharing a sense of personal relatedness.”

Influence: “A sense of mattering, of making a difference to a group and of the group mattering to its members.”

Reinforcement: “Integration and fulfillment of needs... the feeling that members’ needs will be met by the resources received through their membership in the group.”

Shared Emotional Connection: “The commitment and belief that members have shared and will share history, common places, time together, and similar experiences.”

Reflect: *“Sense of community is a concept that is primarily psychological: It refers to the personal knowing that one has about belonging to a collectivity. There is an I-you sense that differentiates oneself from the collectivity, and there is a “we”- sense of belonging together. These are reciprocal aspects of belonging, each requiring the other. ... There is a yearning for community that has been growing steadily in America ...”* - **Make some notes on how this is reflected in classrooms.**

Task: McMillan and Chavis have 4 elements of community - Membership, Influence, Integration Needs Fulfillment, and Shared Emotional Connection.

- Based on your reading of the article, draw a visual model representing their concept of community.
- Using your model as a guide, list 3 strategies teachers can use in their classrooms to foster a sense of belonging and mattering as a classroom community. Consider your own experiences, what you have observed, or ideas you think of that you believe would be good to try out.

Aspects of Community

Given and Chosen Communities

There is a tension between a given community – the place you were born and lived in childhood, a workplace – and a chosen community. Sometimes, they align perfectly; we choose our communities from those into which we are born or located by other social-economic forces. Sometimes, we intentionally choose communities that may even be difficult to get to because it is there that we feel we matter and belong. This is similar to the difference some people feel between their biologically given family and an “intentional” family with whom they have built special relationships.

Community As Place

There was a time when a community was physically and geographically defined, the place where we lived, our village, town, city. It was also for a long time, the place where we worked, where we would meet our colleagues and supervisors at the market, at places of worship, at the park, at games, at town celebrations, where our children would attend the same schools and we’d know the same teachers. What are your community places? How have they changed as you have grown into adulthood?

Community As Connections

With social mobility through the late 19th and 20th centuries, globalization through the 20th century, and especially the development of the internet in the last quarter of the 20th century,

“community” is now a more dispersed concept. I might have no community where I actually live and a strong sense of community with my department at work, I might live in one town and attend school in another town or online, I might live in one town but attend a place of worship a 2-hour drive away. My most salient communities might be on social media with relative strangers from around the world but with whom I connect for deeply meaningful interactions. Do you have community that is distant or dispersed online?

Community As Systems

- Taking a systems perspective, we can look at communities at macro and micro scales. An important consideration is at what level or scale does a community become salient and meaningful to an individual? There is a tension in society between the microcosms of identity-based communities and the macrocosm of the whole multi-diverse community called “the society”. The emergence of virtual communities adds a layer of complexity to this tension. How do we define ourselves and where we see our communities? Am I a “citizen” and community member of my city, my country, or my identity group/s? Can I be a member of all these systems? Which ones are more salient to me and how does that impact my participation and my sense of personal and social responsibility?

Mattering as Key

Membership is not sufficient. We might belong – say in official ways of being enrolled in a class – but do we matter? Mattering is a sense of one’s significance and our sense of value or worth in who we are and what we embody and bring to a situation. Mattering is feeling that our presence and actions are meaningful to others, that we are seen. (Costin & Vignoles, 2020; George & Park, 2016; Martela & Steger, 2016).

Institutions and Organizations as Community

Are institutions and organizations communities? And for whom? A college has a mission based on a set of values, and a common purpose uniting and directing the work done across all levels and departments. It is a system of stocks and flows. But is it a community?

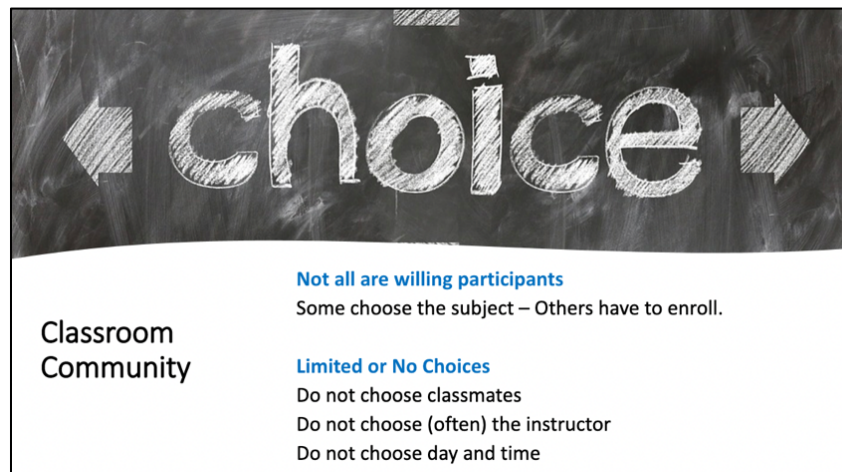
- Within an institution, there are micro systems or possible communities that are both formally established or organically evolved that serve as spaces and resources for different populations of students. If a sense of community comes from a sense of connection, meaningfulness, and belonging, who has that experience? **Remember complex intersectional identities and the socio-ecological model of Social Determinants of Learning circumstances of our students. Who do you think is recognized and who is still invisible in the community infrastructures that exist on a college campus?**
- What elements or processes in institutional life can foster these experiences? In ethically including all student diversities, what might be the limits of an institution? Whose responsibility is it to serve these diverse needs; who is ultimately accountable? How do institutions share the responsibilities and accountabilities of larger social systems? Since all systems are connected, how are educational systems linked with larger social systems; how do they influence each other?
- **The college in the larger social system.** In ethically including all student diversities, what might be the limits of an institution? Whose responsibility is it to serve these diverse needs; who is ultimately accountable? How do institutions share the responsibilities and accountabilities of larger social systems? Systems are connected. What are the stocks and flows connecting an educational institution and the larger social system? **Should/will institutions of the future be integrated with larger social systems in partnerships that can better serve the diversity of student identities and needs? What might that look like ... if you had the power to re-imagine educational institutions?**
- **The classroom as an intentional community.** The classroom is the primary point of contact between educators and students. What can you do to create an intentional classroom community that will make your class a salient, meaningful space for being (and being visible), mattering, and learning? **How is community created in course design, in expectations and protocols for class engagement, in your choice of learning and assessment modalities? How do you create safe and brave spaces and processes for students to be who they are as they learn, to bring in their identities, histories, and lived experiences?**

Classroom Community

“Do I matter to my classmates and my teacher?”

“Does it matter to my life that I am here?”

These existential questions often unconsciously work in the background and impact engagement and success. A classroom is a given community – but for many, it might not be a chosen community.



[Link to “choice” graphic image source](#)

Students are in your classroom (just as we are in our workspaces) from a number of reasons:

- They want to take a class with you
- They have to take this course and you are not their instructor of choice
- This class fits their schedule.
- Their best friend is taking the course ... etc.

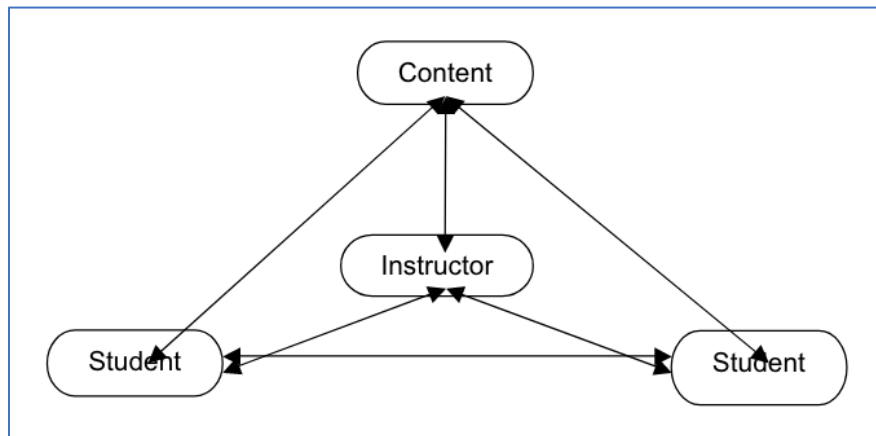
There are other circumstantial factors that affect their sense of community:

- They do not know anyone in the class – they know most of their peers
- Some peers make them feel uncomfortable – they feel welcomed by the peers
- They are in the minority – they are part of a majority group.
- The day and time of the course suits them – is challenging.

So, when we begin with our students, we are a random bunch of people, brought together by a modicum of choice and a great many circumstantial reasons. Yet, the class is often the place of greatest and constant contact between students, their professors, and their campus. From a random gathering of individuals, how can we become an intentional classroom community where students feel that they matter, and that is a meaningful space for learning and bringing one’s full self into the process?

Read: Kay, D., Summers, J., & Svinicki, M. (2011). [Conceptualizations of classroom community in higher education: Insights from award winning professors](#). *Journal of Ethnographic & Qualitative Research*, 5(4), 230-245. [15 pages]

This is a multiple case-study with 16 award-winning professors, across different disciplines and with different demographic backgrounds from 2 major universities to examine their conceptualizations of classroom community. The authors use a systems perspective to present both dyadic and the social system of a classroom.



Reflect: Consider these excerpts from some of the participant's comments. Have you experienced these scenarios in your education journey? What do you think the teacher does to foster these settings?

1. There may be a room full of people who don't have anything in common other than that class right now. You know, they're thrown together or brought together as a result of registering for the same course, and then over the course of the semester, as time passes, there's an opportunity for them to feel a bond or kinship or a closeness with other members of the class that, you know, is very positive, or can be very positive.
2. I love for the people to feel that they are participating in a common intellectual adventure. More a place where they are intellectually stimulated, they seek one another out for this common, um, for this common interest. They're communing with each other! I mean, they're communing in this intellectual arena, which is what I really want them to be doing, is to be talking, you know, with the challenges, having the intellectual challenges be what they do.
3. When everyone is working together cohesively, we are discovering things together. We are sharing information and it is very much a give and take.
4. I also think classroom community involves feeling like this instructor is not on the stage in (name of auditorium), this sort of figure that stands aloft that I cannot approach. I mean, I think community also involves me being willing to learn with them, not just to impart knowledge to them.

Managing or leading classrooms?

What is the difference between a manager and a leader?

We hear a lot about “classroom management” and not so much about “classroom leadership”; we ought to examine why. We are accustomed to using the language of management and compliance:

Policies – control - compliance – rules and penalties – one-policy to rule them all...

How can we transform this to honor and work with a diversity of learners and contexts (Design Thinking – Empathize and Define), and to create learning environments that are meaningful, where we all feel we matter? Can we write guidelines from the perspective of leading and supporting?

Guidelines – agency – motivation and engagement – flexibility – differentiation ...

Metaphors for transformation

We can change the metaphor – and transform deep assumptions toward a more inclusive, equity-minded approach: From the metaphor of POLICY – to the metaphor of JOURNEY



What parts of education in your experience have been a contract?

Rules and conditions, enforcement, compliance, binding, rigid, one-size-fits-all, expectations of perfectionism

What parts of education in your experience have been a journey?

Effort and process, exploratory, emergent, co-creation and dialogic, flexible, open, seeking excellence.

POLICY – RULES – CONTRACT. These are common metaphors used when thinking and talking about courses and syllabi. Consider what unconscious assumptions these contain.

- A transactional relationship – very much in the mode of transmission-based teaching.
- A power dynamic of compliance. Students must play by the rules or face penalties.
- The contract or rules are designed with a singular idea of what is a “good” student. This works against a diversity of learners and those who do not fit within the constraints of the rules will be designated as less compliant and hence not a “good” student.
- Policies, rules, and contracts focus us on controlling management.

ROADMAP - GUIDELINES – EXPECTATIONS. This moves away from the compliance-based approach toward a facilitation and empowerment approach.

- A community-focused relationship. The guidelines are helpful criteria that signal a culture of care toward excellence.
- A co-creative dynamic of flexibility and communication that helps each student get to the outcomes optimally. The teacher establishes flexible parameters for working.
- Guidelines are designed with a diversity of learners in mind. There is no judgment implied of who is a “good” or “bad” student. Guidelines are written with broad boundaries that allow different situations and needs to be met while keeping students engaged toward success.
- Roadmaps, guidelines, and expectations focus us on co-creative leadership.

This is not to say that there are no hard rules needed.

However, intentional design that embraces diversity and seeks to create an inclusive, equitable learning process begins with considerations of identity, contexts, and hence flexibility to support a wide range of learners. Within these flexible parameters, we can have strong expectations and clear boundaries. Flexibility in guidance is not mutually exclusive to excellence in work and development; it facilitates it. The ultimate goal is to ensure that our guidelines support rather than block learning and growth.

Building community supports learning success. Learning requires paying attention to a process in which we use information to construct understanding and rehearse skills toward mastery. This is more than cognitive focus. Students also need social and emotional connection to the learning process so that they can engage without being overwhelmed or distracted by anxiety, feeling marginalized, or disconnected. Belonging and mattering helps learners feel supported by the teacher and by a community of peers.

Watch: [What I wish my professors knew.](#) [7:25 mins]

This video by the Stanford Diversity and First-Generation office features students talking about experiences that made them feel they did not belong, and their ideas for professors to help students feel seen and that they matter.

Reflect: Based on your understanding of community as a sense of belonging and mattering, reflect on how you might create a sense of community in your course design and teaching.

1. How is community created in the language you use to write your syllabus?
2. How can course expectations and policies be designed to help students feel they matter and have a nurturing space to bring their whole selves into learning?
3. What assessment and assignment practices would help students feel included in a safe and brave space for learning and growing?
4. What strategies would create a classroom environment where all voices were welcome and there is a sense of reciprocal respect and trust?
5. What can you do as an educator to help students connect with the larger community of the campus and to build bridges with them to the resources and opportunities that are often invisible to them?

Transforming policies to build a sense of mattering and belonging

Building a sense of community – belonging and mattering - in classrooms begins even before we meet our students, in the undramatic, seemingly prosaic space of our course syllabus. And yet, the principles of our “course policies” and the tone in which we present them communicates loudly how we envision and facilitate our classes. Drawing from the metaphor above, moving from “contract” to “journey”, how might we transform course policies into success guidelines?

The purpose of classroom or course guidelines and expectations

1. **Clarity.** Explicit and transparent information that helps students manage their learning.
2. **Optimizing Teaching.** Policies that help teachers to be effective in ensuring student success.
3. **Optimizing Learning.** Policies that support inclusive and equitable learning for ALL learners.

Apply Design Thinking – Empathize and Define. What diversities of identity and lived experiences will impact your course design? What are the limitations your students might be facing?

Do your policies work for a diverse group, which includes:

- Shy or introverted students
- Socially awkward students
- LGBTQ students
- Students facing stereotype-threat
- Students who are the minority in your class
- Students from different cultures including international students
- Working students
- Students with caregiving responsibilities
- Older students
- Neuro-divergent students
- Students with accommodations.
- Students with needs and disabilities who are not able to get accommodations

Who else might we add to this list?

We hurt the heart of learning when we grade behaviors by assigning points to things like attendance, participation, technology use etc. Grading (which we cover in a later chapter) is a formative process to support knowledge construction and skills development. Grading class behaviors blurs the definition of assessment while creating punitive settings that negatively impact learning.

Oppressive policies signal that only one type of perfect student matters that comes from assumptions of homogeneity in the legacy idea of students. They ignore important realities: working, older, caregivers, language learners, neurodivergent and differently abled learners, international, students of color, gender and LGBTQ identities. While we cannot be all things to all individuals, we can begin with broader, more flexible guidelines for success. These speak to awareness of lived experiences and contexts of being a student and a willingness to work with where they are.

Apply: Explore and transform course policies into guidelines for success

Task: Below are some course policies taken from different syllabi.

Use the metaphors of contract and journey. Do you see legacy education practices of the contract metaphor in the policies? Can you identify Clear and Complicated domain thinking?

What assumptions are being made about students, learning, and classroom conduct?

1. What types of students might experience the policies as barriers to success?
2. How might we adjust the policies to remove barriers and include all learners to support learning with care and meaningfulness?

Technology Policies – each one is from a different syllabus:

1. As we will discuss in class, we are working to create a lively intellectual experience. Unfortunately, cell phones, texting, email, and other social media are a powerful form of distraction. The class is only 50 minutes in length. For a series of complex reasons, the class policy is for students to not use laptops in class. Doodling, daydreaming, and even occasional dozing, however, have historically been part of the university experience; this class will not be an exception to that pattern. There is not a problem with bringing in food or drink.
2. CELL PHONE USE AND TEXTING ARE NOT ALLOWED IN CLASS. Either one will count as an absence.
3. Electronic Devices: Cell phones, laptops, I-Pads, Kindles, and other electronic devices must be turned off and put away during class. Anyone who is observed text messaging or using an electronic device during class will be asked to drop the course.

Who are you excluding and what do you prevent in learning if you do not allow use of digital devices? Consider students with disabilities (who might be spotlighted if they have accommodation to use a digital device while others are not allowed), or language learners who need some translation and look-up help. Also consider that many students might want to look

things up as they engage in class. Instead of an outright ban, what guidelines for digital device use will support appropriate ways to use digital devices?

Late Work Policies – each one is from a different syllabus:

1. Assignments are expected to be completed by due date. Assignments submitted after the due date will not be accepted.
2. For every day the assignment is late after due date, 25% of the maximum will be deducted from the assignment score. No assignments will be accepted once they are three or more days late.
3. The penalty for late homework is substantial: 10 points/day. A late assignment runs the risk of receiving little credit. Penalties may be waived if you have a good reason -- talk to the Professor, before the assignment is due if possible.

Participation Policies – each one is from a different syllabus:

1. This is a class for talkers, so come expecting to participate actively in all discussions.
2. Class presence and participation points are given to encourage your active class participation and discussion. You will be rewarded with a perfect score as long as you frequently come to class and actively contribute to the class discussion during recitations and lectures.
3. Participation in weekly discussions will be graded on the following scale:
 - Unexcused absence = 0 points
 - In class, but asleep or obsessed w/laptop = 1 point
 - In class, but silent or ill-prepared = 2 points
 - In class and making an okay contribution = 3 points
 - In class and making quality contributions = 4 points
 - In class, but your cell phone rings = -5 points

Who do we exclude with a narrowly defined participation policy? Consider how you define “participation” and what you’re actually measuring. Is it fair to limit participation to spoken responses while in class? Can you instead gauge participation in multiple forms and modalities – writing, engaging in collaborative work, submitting class notes, asynchronous work in the LMS etc.?

Participation grades are an external regulation of behavior that makes the learning process punitive for many students. Also consider the perspective that if the teacher’s role is to engage all learners inclusively and actively, then participation should be designed into the process.

How can we write participation and engagement guidelines as an invitation to engage rather than a set of penalties that do not work for many students?

Other legacy policies to think about transforming

Attendance Policy

Who are you excluding with a strict attendance policy? Consider that some students cannot afford doctor's office visits for a doctor's note and that there are many life situations beyond ill-health that cause students to miss class. For example, care-giving emergencies and obligations, or work-related issues. Sometimes, the students with the deepest motivations and intentions to persist through college while working or being parents are the hardest hit with life events. First check your own teaching design - while missing class affects learning, have you created pathways to catch up on what was missed (e.g., buddy groups, recorded lectures, submitting notes from catching up etc.)?

How can you create attendance guidelines that explains the importance of coming to class and what students should do if they miss a class to ensure that they are keeping up and learning? Our goal should not be to control their attendance, but to optimize and support their learning.

Academic Integrity Policy

In promoting academic integrity, policies traditionally are worded punitively in only highlighting punishment. Who are we excluding in this approach? Consider students who are inherently honest, but have missed appropriate prior knowledge, experience, and skills to integrate sources effectively, or who do not quite understand the technicalities of plagiarism.

How might we add guidelines to an official Academic Integrity Policy that acknowledges and respects students' intention to be honest and invites them to learn how to effectively engage in academic writing and practice. Providing links to resources that can help them learn, for example library and other online resources is as important as providing links to the official institutional policy.

Task: Find a syllabus in your discipline

This can be one of your courses if you are teaching? Or it could be a course you've taken as a student? Or a course in your discipline you found on the internet.

Beyond course policies, what other aspects of a syllabus might create – or break – a sense of connection, belonging, and mattering? What would help students feel they are welcome, that they matter, and that you are inviting them into a supportive learning space?

Make a list of strategies that would transform a syllabus into an inviting and community building tool.

Resource: Fostering community in classroom facilitation

These strategies work for on-ground as well as online classrooms.

Building community takes time and work. Icebreakers only on the first day won't do it. Make time and space for students' voices. Since online settings that don't lend themselves naturally to organic conversations, structure the process; once it gets going, it can be student led.

1. **Pre-class presence.** In live sessions, "arrive" a few minutes early so students who come early can chat with you or each other. Because it's very strange in video conferencing to just up and chat, begin by scaffolding this for a few weeks with a while-you-wait activity - a poll or puzzle, a chat prompt that brings in personal stories, a drawing prompt (great for sharing later by holding up to camera).
2. **Post-class time.** Many students will want to jump off a live session immediately. But some might want to hang out and ask questions or chat. Staying 15 minutes after class supports this. Sometimes no one will stay but hold the space as a caring move.
3. **Creative multimodal experiences.** Communities gel around shared creative experiences.
4. **Share aesthetic experiences:**
 - a. **Create a class music playlist** and have it playing as students enter. Co-create this with students - ask them what they would add to it. They might find peers with similar music tastes or learn about new music and artists from each other.
 - b. **Bring in art images you like** - invite students to share what they like, or their own work. Help them think of art - as any creative expression rather than art with a capital A.
 - c. **Film** - ask students to share a movie they recently saw and liked. Do the same yourself. This can spark conversations about common interests and help create connections.
5. **Pause for personal connection.** During teaching, structure time to pause for reflection in how something connects personally with students. Finding and sharing meaningful connections builds a sense of a shared experience in the social-emotional space rather than only in the cognitive space of subject matter.
6. **Explicit caring about learning.** During teaching, check in on the learning process. Is this challenging ... are your brains exploding with excitement? How new is this idea to you? Giving students time and space to think about HOW they are learning helps create connections of shared experience with each other (*I thought I was the only one who thought it was odd, I had the same idea!*)

Resource: Fostering community in classroom facilitation

Asynchronous Learning: Building Community

The class is on a learning journey with you as a guide. In an asynchronous setting it can feel like a bewitched journey - we cannot see each other. But, we might hear each other and see signs of each other's presence. Building community in such a setting needs explicit signaling and opportunities to collaborate from afar.

Note that while these are thought of in the context of asynchronous learning, they can all be used in synchronous teaching and learning as well.

Pre-and post-class time - translates to setting up community building activities that are not related or tangentially related to subject matter. This signals the importance of the whole student and not just the learner. Some examples:

1. **A Class Portraits page.** Students add a photo of themselves or an image or drawing that represents them and share something about themselves. Have them revisit the page from time to time to add to their "portraits" and leave happy comments for each other.
2. **A _____ of the week announcement or page.** Post a regular music video of the week, meme of the week, personal story of the week etc. Again, seed this to begin, and then invite students to be contributors. You can also begin to assign students to take community leadership and send out these announcements. Students start to look forward to these messages that they can enjoy. If you use the Discussion tool in Canvas, they can also react and post comments and connect with each other.
3. **A News From The World page** on your LMS. Invite students to share current events of interest to them with their peers on a collaborative page. To make this really work, use your regular weekly announcement to acknowledge contributions. Even better, encourage students to find news that connects with the subject matter you teach.

Scaffolding presence of a journey guide. Send a weekly announcement giving students an overview of the week's work, a recap of what they achieved the previous week, and community news to share. Share something of yourself in these brief messages - a picture of a plant you have that is blooming, or a dish you cooked, a book you read - with just a line or two about it.

Co-Creating the journey with your students. Giving students autonomy, choice, and opportunity to take charge of something in pairs and small groups fosters connection, ownership, and intrinsic motivation which build mattering and community. The idea is to set up your asynchronous course with good structure, but leave one or two items to be decided by the community of students:

1. **Class created quizzes.** Students collaborate in small groups to come up with quiz questions on topics they are learning as well as the correct answer. Actually use these questions in some of your quizzes.

2. **Class created creative assignments.** Give students creative options for doing an assignment, for example: write and perform a song or rap, make a short video, write something in different roles, make a piece of art, build a model etc. Students collaborate in groups to choose and build their creative response.
3. **Create rubrics with students.** For selected assignments, have a class meeting, go over the assignment and ask for feedback on criteria for assessing the assignment. This both builds metacognition as well as gets students collaborating with each other and with you to work out an aspect of their learning journey.
4. **Collaborative resource sharing.** Set up an editable page and ask students to add things connected to something you are teaching - websites, videos, blogs, images = with a 1-sentence explanation of why it's awesome. Make sure to bring this into either a live class session to review and celebrate with students, or to send an announcement if teaching asynchronously to let students know you've seen and appreciated what they are sharing and to encourage them to visit the page.
5. **Set up a shared class reflection blog.** Or use something like Padlet or Flipgrid. Or just a Google page. Introduce reflection by asking students to do micro-reflection work: What's one class thing that you're enjoying this week and why? How do challenges in class and in life make you feel? What are your assets as a student and human being ... what's your secret power? They do not have to write a lot - the goal is they begin to share something of themselves with their peers. Model this yourself. To build a community, be part of it. You should also share your reflections in the reflection space.

Reflect What can you do in how you approach designing courses and facilitating classrooms to help each student feel that they mattered?

What can you do as an educator to help students connect with the larger community of the campus and to build bridges with them to the resources and opportunities that are often invisible to them?

Connect with your Diversity Statement Worksheet

This chapter on community, belonging, and mattering connect closely with the following questions on your Diversity Statement worksheet.

DVS Q2. How do I practice justice in education in my approach to designing curricula, learning environments, and processes in teaching my discipline?

- What are my guiding principles in designing for diversity and in using inclusive and equity-minded strategies to transform education toward centering DEI?
- What specific strategies do I use to ensure all voices are invited, honored, and supported in my curricula materials and class engagement?

DVS Q3. How do I engage with DEI work beyond the classroom at the campus level? How do I engage formally and informally with campus resources and initiatives that support DEI? In what ways am I an ally to students and an advocate for greater inclusion and equity on campus?

Further Exploration

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Chapter 7 - Inclusive Equity-Minded Active Learning

In active learning, we balance the focus of the teacher and teaching with an equal focus on students and learning. Active learning fits within the Design Thinking framework; instead of jumping into planning our teaching from a content delivery mindset, we pause and move into the Empathize and Define phases to focus on the learners and contexts of teaching and learning. This helps us intentionally integrate and create inclusive and equity-minded processes and spaces.

Actively Learning About Active Learning

This part of your textbook is a directed active learning process to learn about active learning. In this process, we ask you to do some thinking, recalling, guessing, then read a set of notes, and then come back to your initial ideas to review and revise. This is a form of active learning – here we are doing it asynchronously.

Work through this section by alternating the tasks given with the notes.

Task 1. Induction - starting with your input.

Respond to the following statements – make a guess - before reading the notes on active learning on the next page, so you can come back to compare and expand on your ideas later.

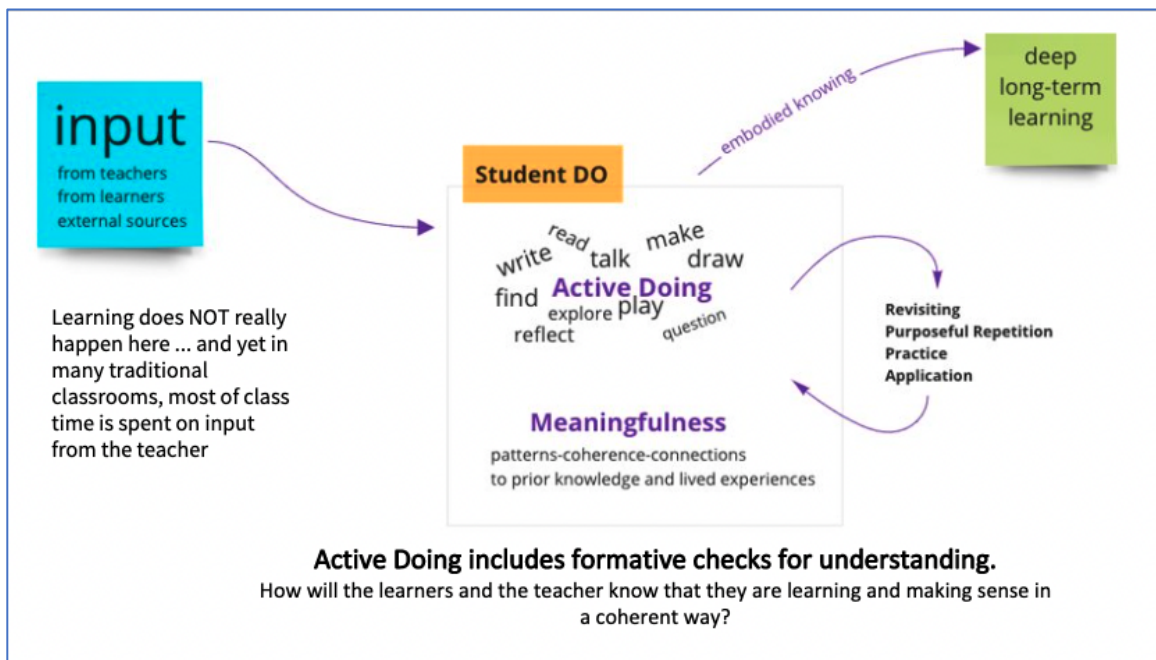
Think about contexts where you have led, seen, or experienced what you might think of as “active learning”. Or just make a guess. How would you fill in these blanks?

I define active learning as _____

I think active learning may differ from ‘traditional’ or legacy forms of learning because _____

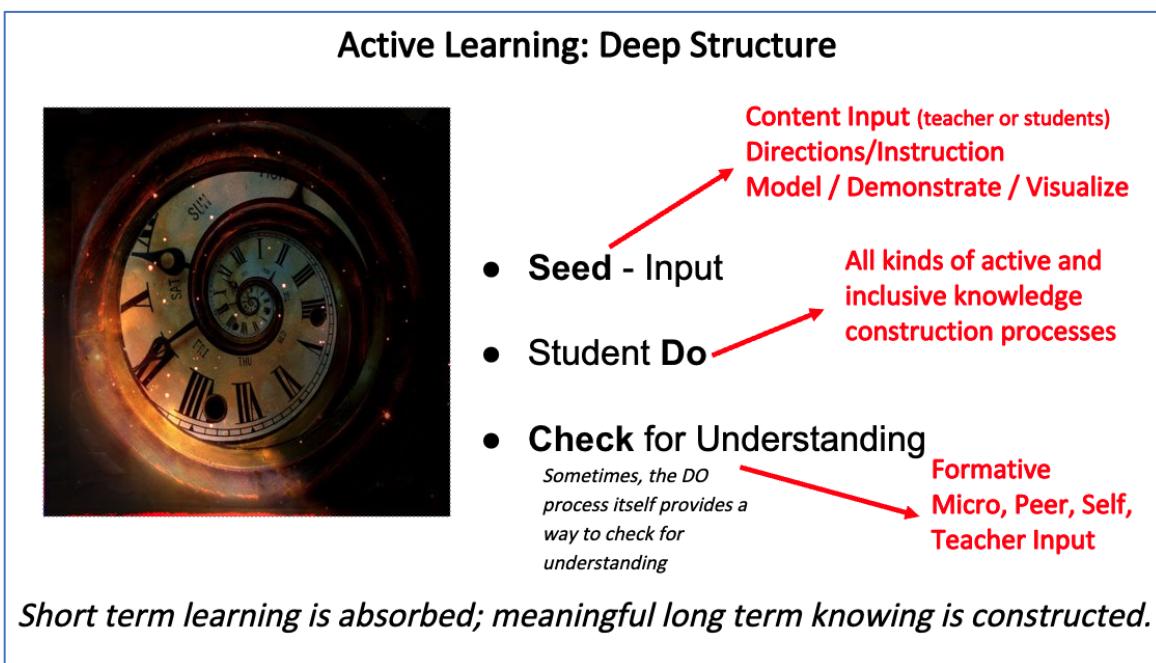
Now read the notes below about Active Learning. Look for and highlight connections to the ideas you wrote above as well as new ideas that you did not think about.

Defining: A Model of Active Learning



This is a sketch of the journey or process for moving from input in teaching to deep learning. Notice that the real learning – knowledge construction into deep learning happens outside of the input. And yet, when we consider many traditional classrooms, much of the lesson is spent on the teaching giving input in the form of lectures taking precious time away from the actual knowledge construction for learning!

Here is a model for active learning design.



Active learning design can be analyzed in 3 connected elements:

The INPUT or seeds to stimulate the learning process. Input is often from the teacher. However, it can also come from students or external sources. Examples: lectures, demonstrations, readings/video/web pages etc. before class or in class, reflections of experience, prior knowledge etc.

The STUDENT DO to engage in knowledge and skills building. This is where learning happens. Students use input in solo, pair, or group settings and DO something with it. The teacher facilitates the process (unpack, connect, compare, contrast, analyze etc.) to help students build knowledge and skills.

- **Active learning can include physical and collaborative activity.** These can take the form of role-playing, using post-its, drawing, making something, doing something outdoors etc. Engaging physically and collaboratively with peers, learners focus and articulate thought, bringing in a sense of exploration, creativity, and playfulness.
- **Active learning does NOT always have to be physical.** It can be quiet; focused tasks done solo or with others. It might look “passive”, but it is active in cognitive engagement in specific processes. Listening to a lecture might be passively hearing a stream of words. But an active lecture will facilitate specific processes, e.g. recall and connect ideas, compare and contrast something as part of notetaking, short pair share moments.
- **Active learning is about thinking activation.** We facilitate a process to help students engage in specific thinking processes that we want to help them develop. Therefore, we first must know what our intentions/goals are in designing activities – e.g., to recall, compare-contrast, summarize, connect, question etc. – so we can proactively design activities to foster these skills.
- **Active learning is not always speaking up in class.** We can design to include shy and introverted students, Language Learners, those unsure of themselves by allowing time and space to first prepare and edge-in without being put on the spot for example in a Think-Pair-Share. Or we can use pause for reflection, sharing ideas in Chat, a simple app like *Jamboard*, polling or post-it sheets etc. to engage all students in ways other than speaking.
- **Active learning can happen asynchronously outside of class.** We can make preparation work active by providing guiding questions for reading or reflection before class. This will help all students come to class more prepared and better able to engage.
- **Revision – Purposeful Repetition – Practice and Application.** Active learning includes these types of processes that help students deepen and embody what they have learned. Purposeful or goal-oriented work is important. Revision and repetition are not

mindless and unproductive if it uses the approach of rehearsal and practice, integrating peer-review and analysis to improve.

Meaningfulness supports active learning. Students engage with active learning activities more deeply when can find coherent patterns and connections between the material and prior knowledge and their lived experiences. Meaningfulness also comes from peer conversations, reflections, and journaling.

The CHECK FOR UNDERSTANDING processes

These processes address the critical question of how the teacher and learners will know that they are on the right track, that they “got it”? Knowing how they are doing – what they understood and where they need to focus more – is informal formative assessment that optimizes learning. It also helps students develop a metacognition of their learning and learning how to learn skills. For the teacher, checks for understanding help us gauge the effectiveness of our facilitation and where we need to adjust. Examples are think-pair-share discussions, short low stake quizzes, polls, reflections and synthesis work, peer reviews. Often the actual student activities are in themselves checks for understanding - if the learners can address the problem or successfully create something with the input, then they are on track.

This table shows you the shift in focus moving from legacy teaching to active learning.

Legacy or Traditional Teaching Focus	Expanded Equity-Minded Focus
What should I teach?	What will they learn? What will they achieve?
What is the content I bring? What do I want them to learn?	How will they use the content I bring? What content can they bring? I might learn from what they bring. They will expand and alter what I bring. They will question what I bring. They will construct what we all bring into new forms in connection with their knowledge and lived experiences.
Formal summative assessment Learning is visible to the teacher, not always to the learner. Assessment is focused on measuring and categorizing learners.	In-process checks for understanding. Learning is visible to the students and the teacher. Assessment is focused on supporting and optimizing all learners toward mastery.

Reflect. Check back with your initial idea of active learning in Task 1 above. In a different colored pen/font, add notes from the reading above to expand and sharpen your definition.

Before going on to the next part, do Task 2 to connect with your own learning experiences

Task 2. Connecting with your lived experiences.

Consider this quote - *“Students must be doing something ... discovering, processing, and applying ... not just reading or listening to a lecture”* Learning is by nature a cognitively dissonant process because we have to encounter things we do not know, work with them to build our understanding.

- What active learning processes have you experienced in your schooling? Consider K-12, college, and graduate studies. Make a list of strategies you recall your teachers using that engaged you in active doing to build understanding. Is there a pattern of more or less active learning in the different levels of your schooling?

The WHY of Active Learning

In this section, we explore how active learning benefits students in helping them succeed in your course as well as prepare them with future-flourishing skills and capacities. Active learning engages us cognitively, socially, and emotionally in higher order processing - analyze, create, evaluate, apply, connect different pieces of information (synthesize), connect to prior knowledge and lived experiences.

Task 3. The benefits of active learning

List how active learning supports and fosters each of the listed areas of teaching. Remember, you are guessing before going on to read the rest of the input so that you can compare your guesses based on your own experiences with the information we share. After reading the notes below, come back and check your responses to expand your ideas.

- Learning success:
- Classroom community:
- Student engagement and confidence:
- Student voice:
- Preparing students for their futures:

Active Learning Benefits. A Quick Research-Tour

1. Significant reduction in failure rates Freeman et. Al. 2014
2. Grade increases. Hoellwarth & Moelter, 2011
Increase in knowledge retention, student engagement, and overall student success.
Baepler & Walker, 2014; Costello, 2017; Huda et al., 2016; Olson & Riordan, 2012; Petersen & Gorman, 2014; Prince, 2004; Stolfus & Libarkin, 2016.
3. Increased engagement in communication and collaboration, willingness and motivation to persist, increased flexibility and adaptiveness, a sense of fun and excitement. Allsop et al. 2020

How do each of these benefits of active learning contribute to inclusive education?

How does active learning as a method support your values, beliefs, and goals as an educator?

Here is a summary of the benefits of active learning.

1. Reduces failure – better grades – better retention - increases student success
2. Deep learning - Increases knowledge retention – long-term learning
3. Higher confidence, persistence, and motivation to learn.
4. Operationalizes the empowerment model of teaching
 - a. Increases co-creation in knowledge construction – students think along with the teacher and each other.
 - b. Increases student engagement and voice – students are invited to bring their ideas into the learning process.
 - c. Increases relevance and meaningfulness in learning.
5. Learning becomes visible to students and teachers.
 - a. Students develop competence and self-efficacy.
 - b. Helps the teacher gauge learning as students work.
6. Inclusive. Makes room for diverse learners to engage in different modalities.
7. Fosters future-flourishing capacities and skills
 - a. Develops higher order thinking – analyze, synthesize, evaluate, create.
 - b. Develops interpersonal skills - sharing, collaboration, and communication skills and hence self- and other awareness
 - c. Develops learning how to learn skills (if we use active metacognitive processes).

Check For Understanding: Compare your guesses about active learning in the Task 3 box above. Add more notes from this research summary to expand the points you initially had.

Active Learning as a Strategy for a Future-Focused Education

In this section, we connect active learning as a framework to actualize transformation from a legacy education system toward an approach more aligned to current and future world needs.

The inadequacy of the transmission model for future-focused work



This is our compass or guiding framework that you first met in Chapter 1.

The goal in transformation is to move away from the legacy Transmission approach that perpetuates a status quo, blocking access to learning and marginalizing and oppressing many learners. Freire (2000) refers to the legacy system of education as “banking” education characterized by an overarching singular narrative based on power, compliance, and homogeneity in education that denies education to many. Teachers and students interact in a linear, a top-down hierarchy of student compliance. This includes an assumption of learning as a one-way process of information transmission from teacher to students and of a canonical body of knowledge that encapsulates a singular dominant perspective. In this model, the wholeness of students and the rich complexities of identities and multiple perspectives of deep learning are absent.

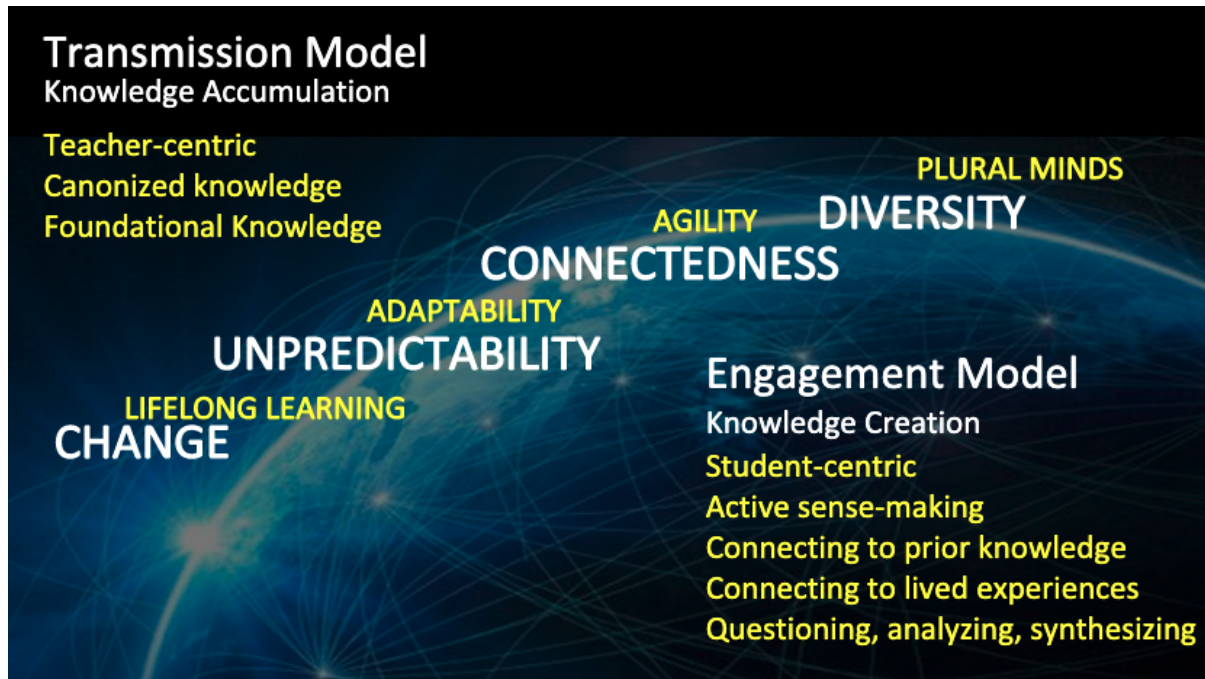
The goal in transformation is to move toward an Empowerment approach to education and leadership. This model engages a rich, centering perspective of learners, learning, contexts, and methods. Students have agency and are invited to bring their full selves into the learning process. Together, teachers and learners become a community engaged in co-creating learning and growth. While teachers have knowledge authority, they are aware of and integrate students’ lived experiences, cultures, and perspectives in designing and facilitating learning. The learning environment is expansive and connective in integrating multiple ways of knowing, representing, and expressing knowledge so that learning is meaningful, and each person matters deeply in the process.

Reflect

In your schooling experiences – looking back from early childhood through college – when and in what kinds of schooling contexts or subjects did you experience the Transmission model and the Empowerment model? Which was more prevalent in your schooling experience?

Explain the connections you see between Active Learning and moving to the Empowerment model.

The emerging future



The internet was a global game-changer from the middle of the 20th century, significantly accelerating change and the interconnectedness of human interactions. The diversity of identities, cultures, histories, experiences, and worldviews with which we live are more prevalent and visible. Rapid change means we live with unpredictability; life in one generation is radically different from the next as new kinds of work, living conditions, and opportunities keep emerging. This is very different from the times where parents could predict a trajectory into the future for their children.

We are living in a radically different global paradigm and an emerging future. The transmission model with its single-story approach does not work.

Active learning supports this:

- Active construction of knowledge, using input to create understanding
- Working with others who are different – learning to listen and engage
- Working with process rather than a single attempt
- Doing, checking for understanding, and redoing
- Learning how to learn through review, feedback, and reflecting on learning.

A paradigm shift toward a radically different world and future

Our students need far more than just knowledge and skills. The mission of education must shift to stay aligned and relevant to the emerging future. Our students must be able to create knowledge actively and keep learning. They need plural minds – the ability to think from multiple perspectives, the flexibility and adaptive capacity to work well with different people and perspectives. They must be life-long learners able to work with emerging information and situations to unlearn and re-learn, i.e., embrace change as a positive process in life rather than a threat.

Task 4. Checking and reinforcing your understanding. Create a visual representation

1. Use the ideas you have gathered about the benefits of active learning. Transform this linear list of ideas into a visual representation that organizes them in a way that makes sense to you – a mind map or table – that shows interconnections between them (cause-effect, same category or type of benefit). This engages you in active selection, connection, and synthesis of your ideas thus far.
2. Take a photo of your visual representation and add it to this page.
3. Expect your visual representation to be messy – this is a sketch of how you understand active learning. The important process is the active processing you do to organize and connect ideas, to seek out patterns. Pattern seeking is a strong indicator of constructing explicit knowledge schemas.

Task 5. Questions Arising. Consolidate and reinforce your understanding of active learning.

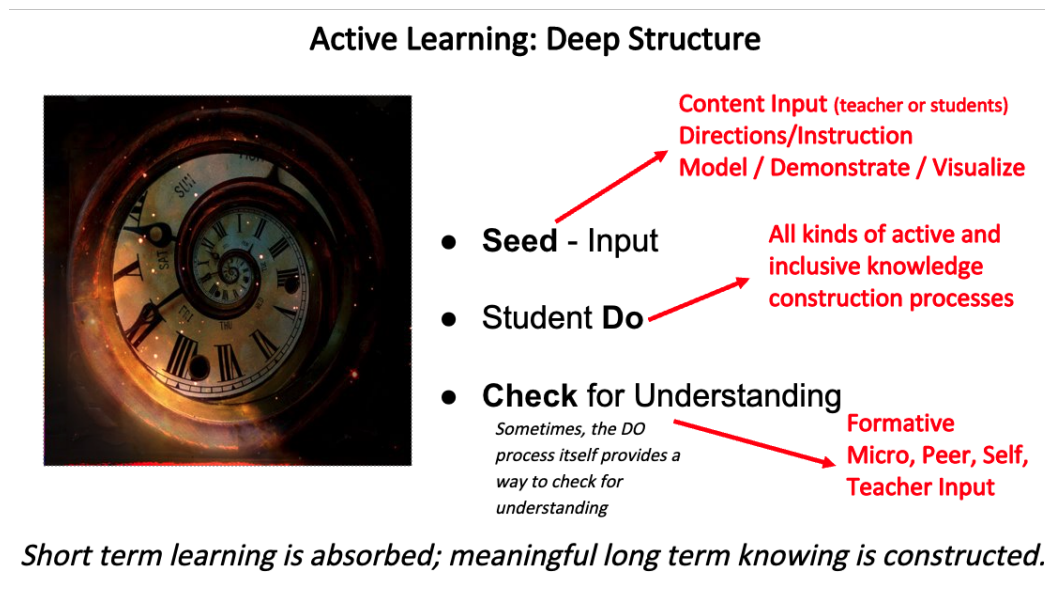
Having done a tour of active learning, make notes on the following:

1. What for you are the most significant reasons for using active learning in teaching your subject?
2. What questions do you have about any aspect of practicing inclusive active learning?

3. What is one word/short phrase that you would use to explain “active learning” to someone who has never heard of it?

How to Design Active Learning Facilitation

You can design active learning using the Active Learning Deep Structure model. A useful metaphor is cooking. How do you cook up an active learning lesson?



Ingredients. SEEDS: What are your ingredients for input? Consider content input from multiple sources, instructions, teacher modeling. Consider whether some input can come from students such as reflections, brainstorming ideas to use for an activity, student sourced materials etc.

Cooking Process. STUDENT DO. What are the steps students will take to use the seeds to construct their understanding? What instructions and materials must you get ready to guide them in using the input to construct knowledge and skills?

Tasting. CHECK FOR UNDERSTANDING. What process will you use to help students and yourself as teacher to know they have learned or mastered something?

You will use this structure to develop your Lesson Plans for your Lesson Plan and Teaching Demo assignment as well as use it as a framework for your Teaching Field Observation assignment.

Resource: Active Learning Strategies for Class Preparation

Use active learning strategies to help learners prepare effectively for class by supporting focus, critical thinking in engaging with material, time-energy capacities, and learning how to learn. When you do this, students enter your class sessions more evenly prepared and ready to engage effectively.

Assign a variation of modalities. With a Learning Management System (LMS) like Canvas, Blackboard etc., assign more than text-based documents: video clips, podcasts, infographics, websites, images, charts and graphs. This builds information literacy, while offering a range of engaging modalities.

Promote and support self-management and focusing. When assigning work, post the time or page load, for example time duration for a video or audio clip, number of pages, rough estimate of website viewing time etc. This helps students to better plan how and when to do the work. Knowing something is 10 minutes as opposed to 30 minutes helps them catch opportunities in their day and plan when they can work on different things.

Use active “call to action” verbs for instruction. Telling students what they must DO (beyond “read” or “think”) creates intention and focus, if they do not need to submit anything. A few examples:

- Make a list of ...
- Compare and contrast ... Make a table to show ...
- Summarize the argument/method
- List what you agree/disagree with and say why

Build on the preparation. Connect pre-class and class work. Preparation is meaningful and relevant, if used in class. For example, if they did a quiz, review the results and address areas that need clarification, if they had to list agreement or disagreement with something they read, run a mini-debate activity in class. When students see that their class preparation is actually used in class, they are more likely to do the preparation.

Keep things small and simple. Be selective in how much you will assign. This forces us to scrutinize what is essential as preparation that will enable us and our students to have a successful and productive class meeting.

Integrate Checks for Understanding in Preparation Work

- **Fact Check Quiz** based on preparation material. These can be set to be taken multiple times to get things right as formative assessment. They require no grading on your part. Also, your LMS analytics will indicate engagement and who’s having trouble so you can do 1-1 outreach as needed.

- **Preparation Tickets.** Ask students to write something in response to questions you will expand on in a class session - such as summarize ideas, organize ideas into categories, higher order tasks such as take a position and justify, identify assumptions, identify alternative perspectives, write a counterpoint response, connect to one's lived experiences etc. These can be submitted in a Discussion Post or to the Assignment Tool in your LMS. They should not be graded or be very minimally weighted.

Selecting to Share. Ask students to find one thing to share in response to a question you pose about the material. For example, after reading an article on conservation, ask a question on the effectiveness of this approach and support their view. Create a shared, editable page - in your LMS or link to a Google Document to submit their ideas. Students post on the page with their few lines of annotation. With this, you can extend the process in class:

- Students browse and briefly comment on each other's contributions.
- Connect these contributions to your class meeting session by viewing the page in class, picking out themes and making connections to what is covered in class.
- Create group work in class to review the contributions as part of a discussion activity to view the contributions, synthesize key ideas, and articulate a response to a question on the topic.

The "Muddiest Point" List. Ask students as they prepare for each session to keep a running list of things that are unclear or puzzling. Set up an editable page in your LMS or a link to a Google document and invite them to share their "muddy" items on this page. Encourage them to clarify items for each other. Peer-teaching like this builds a sense of competency as a community of learners. As the instructor, you gain a sense of what areas you might need to give more time and attention to and what you must clarify when you meet together in class.

Resource: Four and Twenty Tips for Activating Engagement

Scaffold for Active Learning

1. Set active learning norms for your classes on Day 1. It is easier to establish positive norms than to shift negative norms (silence, non-participation, disengagement).
2. Pre-alert students on what they will be asked to do and give them time to prepare before jumping into the activity, especially activities involving speaking and turn taking.
3. Distancing. Allow students to share what they liked in someone else's ideas after a group brainstorm. Hearing themselves speak scaffolds them to eventually speak about their own ideas.
4. Explicit roles. Foster critical thinking by explicitly giving students roles as "perspective thinkers" to make it safe to provide counter arguments and alternatives.
5. Allow students to "pass" in turn-taking activities so they are not put on the spot.

Facilitation Presence

1. Move close to and in among students rather than standing behind a lectern or desk.
2. Make eye contact with students as they enter the room, as you engage in conversation.
3. Acknowledge all contributions. If something is off topic or wrong, first accept and acknowledge the act of responding before correcting the content.
4. Aim to hear as many different voices as possible each class.

Build Connections Among Students

1. Use pair and group work to help students connect with each other.
2. Try and move students if possible – from sitting to standing, moving to different parts of the room, working at their desks to working on the board or the walls of the room.
3. Use students' names and encourage them to do the same in responding to each other. Have students make name cards until you learn their names.
4. Have students respond to their classmates' questions before you respond.
5. Do Gallery Walks so groups circulate to comment on and ask questions about each other's work.

Meaningfulness

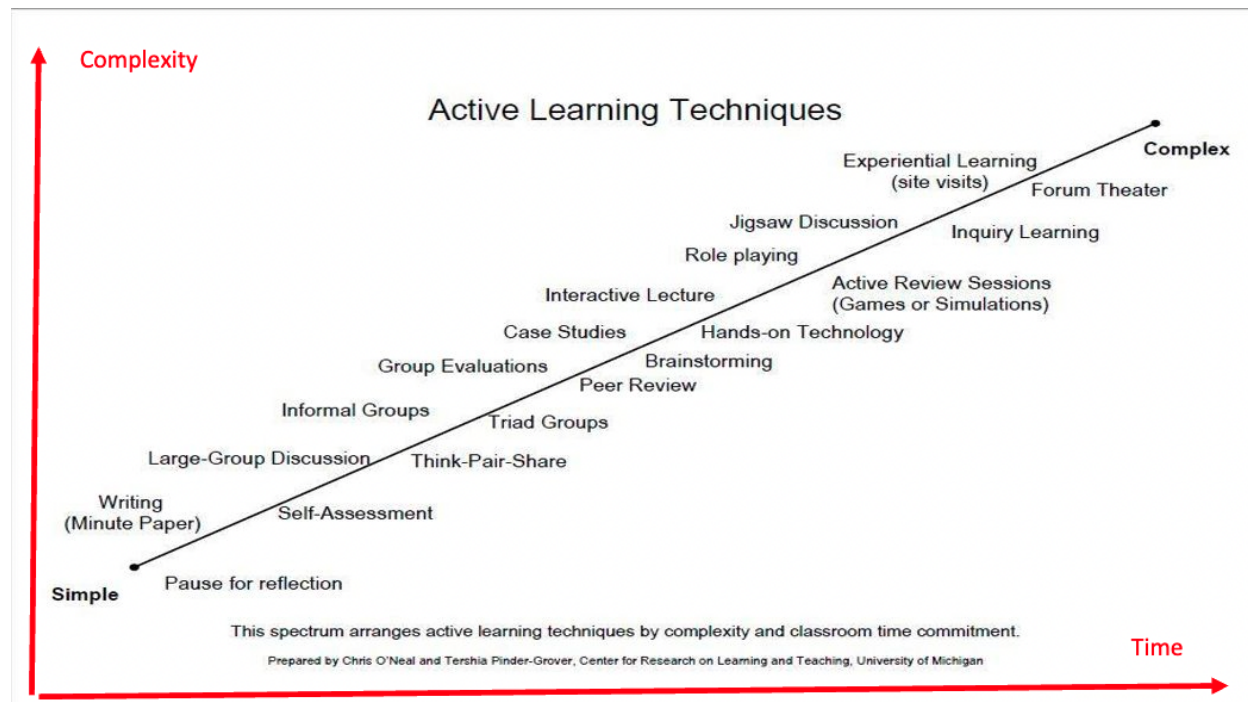
1. Use problem-solving and real-world questions to ground thinking. Rather than define social justice, ask what experiences have you had or observed that counts as social injustice?
2. Engage students' imagination and feelings about a topic and not just their thoughts. What excites/frustrates/intrigues you about this topic?

Time and Focus

1. Use pause. Reflective silence helps students to focus, re-engage, and think. Help students appreciate moments of rich silence by relishing silence and stillness yourself.
2. When using images or visual data of any kind, always ask students what they see and give them time to look and think before launching into explanations and descriptions.
3. Build a norm of gathering many responses before saying what's "correct". This creates a classroom culture that moves students away from the attitude of only seeking the correct answer.
4. Use induction questions to focus students on the topic and engage attention and interest.
5. Vary mental focus alternating individual thinking – sharing & discussion – consolidation. Alternate lecturing with solo, pair, and small group work.
6. Stop in the middle of explanations and arguments to ask for questions and comments. Rather than *does anyone have a question*, ask for specifics: *what might be some ways to respond to this situation?* OR *what is the hardest part of this equation?*
7. Help students consolidate learning by doing quick polls, re-cap games, or one-minute papers (what I learned, what I have questions about).
8. Make time for students to respond to a One Minute Paper that captures what they have learned.

More Resources for Active Learning

A useful selection of active learning techniques ranging from simple to complex in terms of time and task design. You will find many of these techniques in the database in the next item – ABL Connect.



A magnificent active learning resource at the Derek Bok Center at Harvard University. The resource is a database - you can filter by discipline, type of activity, learning objective, length of activity, and award winning activities. They have other resources as well - active learning online principles, and a ton of research summaries organized by categories and references.

<https://teachingcommons.stanford.edu/resources/learning-resources/promoting-active-learning> (Links to an external site.)

Stanford Teaching Commons has a comprehensive resource that explains active learning as well as a good list of different learning activities such as Case Method, Problem-Based Learning, Online Forum Discussion, Role Play, and many others.

Mazur, E. (1996). *Peer instruction. A user's manual*. Pearson Publications

This is a step-by-step guide for using peer-instruction in lectures, especially for introductory courses with large class sizes. While some of the resources are for STEM courses, especially math-based physics courses, the strategies and principles apply across disciplines.

Chapter 8 - Universal Design for Learning (UDL) & Multiliteracies

Overview

This chapter introduces you to frameworks for integrating inclusive, equity-minded modalities and forms of information access, processing, and use. In addition to engaging a diversity of learners, these frameworks also broaden students' information literacies and communication skills.

1. Conceptual Frameworks
2. Universal Design for Learning (UD)
3. Multiliteracies
4. Digital Design Frameworks
5. TPaCK (Technological Pedagogical Content Knowledge)
6. SAMR (Substitution, Augmentation, Modification, Re-definition)
7. Neurodiversity and Disabilities

Universal Design (UD)

Universal Design originated in urban design and architecture. UD recognizes and includes diverse types of people who navigate their environments. It is grounded plurality and differences as normal and as assets. This questions how we often design objects, spaces, and processes using singular one-size-fits-all norms that block and marginalize those who do not fit. Universal Design is based on the idea that we can intentionally design anything - a building, a space, an object, a process - so that many different types of people can use it. In doing this, we need only minimal or no adjustments later to accommodate diverse needs and abilities.

Here are some images of UD implementation. Can you apply this idea to teaching-learning processes? What might we design that will support diverse learners to access and engage with materials and activities?



Sidewalk cut ins. While originally created with wheelchair users in mind, the sidewalk cut in is useful to a host of others - the elderly or convalescent, skateboarders, parents with strollers, people with luggage, workers with heavy items...



Low elevator buttons – Great for: someone in a wheelchair, a child, people with hands full....



Bus ramp - Great for: Wheelchair user, convalescent patient, people with luggage, pregnant women, elderly riders...

UDL in Education

UDL in education began in 1984 with the [Center for Applied Special Technology \(CAST\)](#). Originally focused on assistive technologies, which is why many still associate it with disabilities and accommodations, it developed methods to apply UD principles for equity and inclusion of all learners.

UDL's mission: To transform education design and practice until learning has no limits.

- We thrive on high-quality creativity and relentless innovation.
- We celebrate individual differences and variability.
- We believe in self-reflection that feeds lifelong learning and improvement.
- We measure excellence in ideas and products by the impact these have to make life better for as many people as possible by making true learning opportunities available.

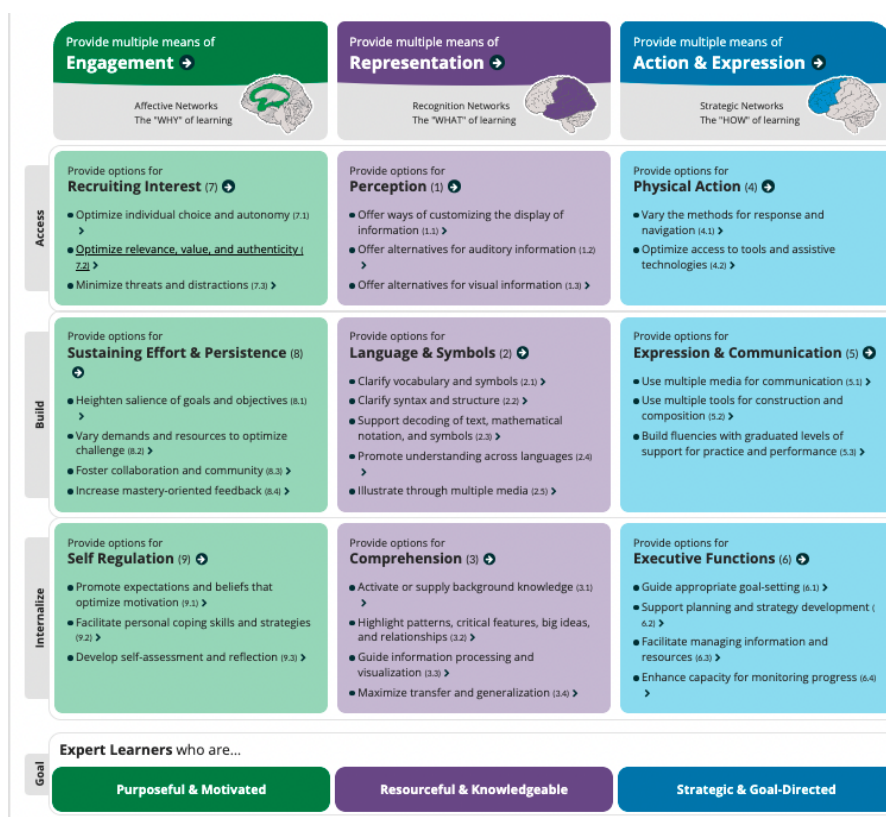
Reflect: how do these CAST values connect with your values and beliefs in transforming education.

UDL strategies focus on 3 key areas:

- **Multiple modalities of Engagement** – GOAL ... purposeful and motivated learners. Affective networks. The WHY of learning.
- **Multiple modalities of Representation** – GOAL ... resourceful and knowledgeable learners. Recognition networks. The WHAT of learning.
- **Multiple modalities of Action and Expression** – GOAL ... strategic and goal directed learners. Strategic networks. The HOW of learning.

UDL creates a flexible and open learning environment for multiple groups of learners. It also supports authentic and more meaningful learning and assessment processes.

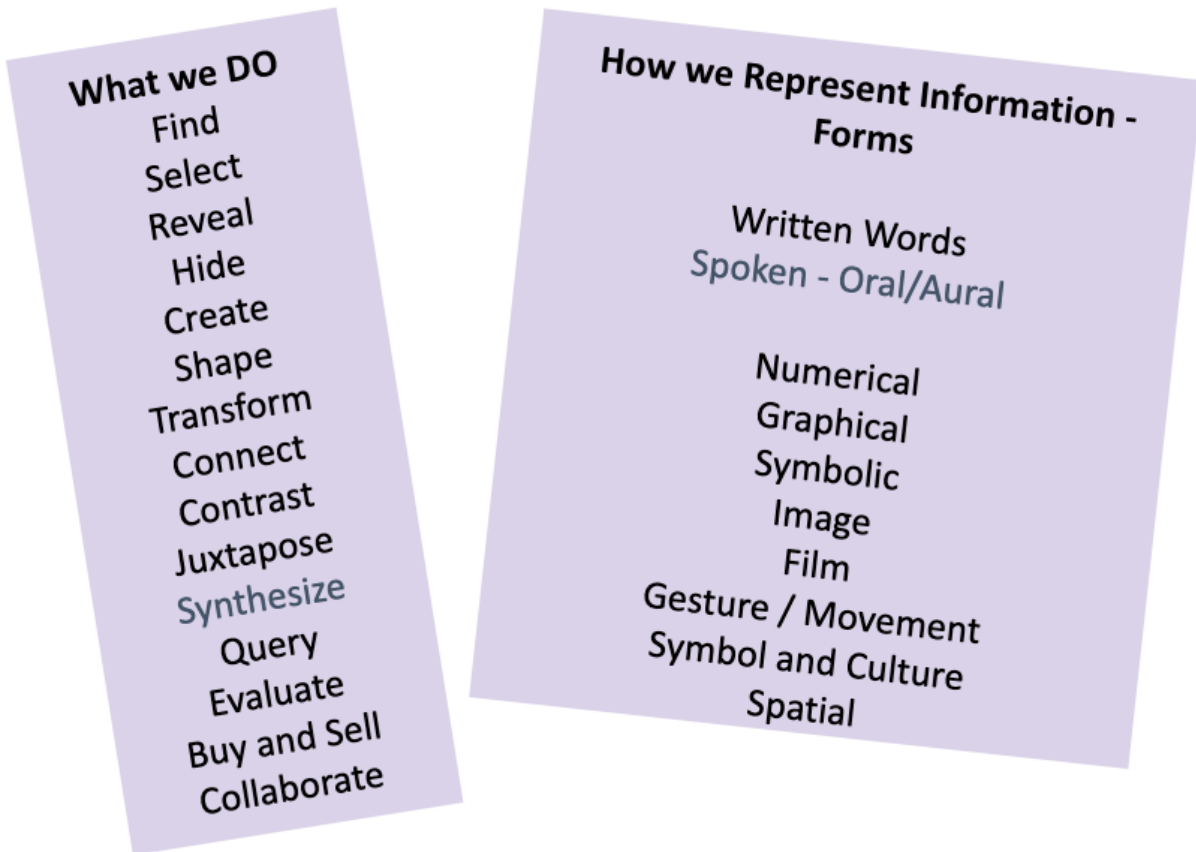
Task: [Visit the UDL interactive model](#) and explore the guidelines and ideas for teaching design and learning facilitation.



Multiliteracies

What do we DO with information? What are our available FORMS of information?

Information is a TOOL. We do not passively consume information - we use information build knowledge, to connect, and to get things done. We want to ensure that our students are able to do this as well.



Wise integration of digital tools can empower and support inclusive equitable education in our classrooms. Wise integration of digital tools also creates opportunities for students to practice and build competence in a wide range of information and communication modalities. These are critical in navigating life, in work spaces as well as in practicing social personal responsibility at local, national, global, and planetary levels.

Multiliteracies is a framework for integrating multiple ways of knowing and multiples forms of knowledge that go beyond the assumptions of the forms of traditional literacy - the written word. While we will continue using this format, the information age in which we live and work uses multiple modalities. Therefore, our students need to master a range of information literacy skills.

Multiliteracies is based on two key principles:

- **Variability of meaning** - that communication is really about dealing with differences in intention, background, and ways of knowing and communicating. This means becoming self- and audience aware.
- **Multimodality** - there are multiple modes of communication and literacy, both in analog and digital forms. We do not just use words; we also use images, sound, movement, gesture etc.

“it is no longer enough for literacy teaching to focus solely on the rules of standard forms of the national language. Rather, the business of communication and representation of meaning today increasingly requires that learners are able figure out differences in patterns of meaning from one context to another. These differences are the consequence of any number of factors such as culture, gender, life experience, subject matter, or social or subject domain. Every meaning exchange is cross-cultural to a certain degree.”

“... we need to extend the range of literacy pedagogy so that it does not unduly privilege alphabetical representations, but brings into the classroom multimodal representations, and particularly those typical of digital media. This makes literacy pedagogy all the more engaging for its manifest connections with today’s communications milieu. It also provides a powerful foundation for a pedagogy of synaesthesia, or mode switching.” - from <https://newlearningonline.com/multiliteracies>

Watch: [What are Multiliteracies](#) [2:06 mins].

The video features Mary Kalantzis, one of the key authors and founders of multiliteracies as a pedagogy.

Read: Theory Overview of key principles and approach; [read nine slides that explain the principles, and the WHY, WHAT, and HOW of multiliteracies](#).

[Optional] You can also watch [short videos on different aspects of multiliteracies](#).

Using UDL principles integrates multiliteracies.

In integrating UDL principles into your practice, you simultaneously integrate principles of multiliteracies and information literacy skills your students need. You disrupt the privileging of written text as the dominant form of academic discourse, opening pathways for counter stories and counter mapping of learning in other modalities and forms that integrate learners' lived experiences and ways of knowing and communicating. Some examples:

- Captioning video with text (multiple means of representation) those with auditory impairment, but is also great for English Language learners, focusing (reinforcing listening with text).
- Assignment options to submit work using different modalities and forms – video or photo essays, rap or open mic poetry, an art installation, blog posts, poetry, story etc. invite students to explore their creativity, use their strengths, and learn new modes of expression. Many of these options also enable integrating authentic audiences among school, home, and wider communities.

Can you think of other examples for integrating multiple ways of accessing, communicating, and representing ideas and self-expression?

UDL & Multiliteracies - From Disabilities to Full Inclusion

Originally, UDL was developed to support disabilities to ensure that all learners can learn. They quickly expanded beyond that still holding to their vision - "until learning has no limits".

Multiliteracies emerged from a recognition of the diversity of information and knowledge forms and modalities.

Together, UDL and multiliteracies support ethical pedagogy and offer counter stories to the legacy ableist narratives of "one-size-fits-all", and the "typical learner". These methods and tools make it possible to center a diversity of learners in flexible learning processes that support a range of abilities and disabilities, while also being culturally responsive and future-centric.

- **Dismantle the social concept of "disabilities"** which is underpinned by a normativity of ableism, and sorts learners into able and disabled based on narrow definitions of a "typical learner" – someone without physical impediments to traditional instruction. UDL and Multiliteracies counter this in texts and learning environments, especially with regard to the read-write modality as the privileged mode of expression and representation. Academic discourse defines this even more narrowly in the kinds of texts it recognizes and includes it is canon.
- **Integrate flexible learning.** Many students cannot get official accommodations, are undiagnosed, or do not realize their options. There are many issues in the approach that puts the onus on students to disclose, afford diagnosis, and request accommodations,

when a far more equitable and just solution is to question and transform ableist policies, practices, and spaces into flexible, inclusive learning practices. Intentional design using UDL and Multiliteracies principles can help us do this so that we need minimal or no adjustments to accommodate a range of needs and abilities. We can make our courses as “accommodations proof” as possible, while still encouraging and supporting students’ awareness and ability to get any accommodations they need.

- **Culturally relevant teaching** recognizes multiple modes of representation, engagement, and expression that include diverse cultures and epistemologies. Legacy practice excludes many forms of communication and expression that are more salient to students and their cultures, thus creating barriers to learning and excellence. UDL and Multiliteracies recognize that there are multiple ways of knowing, sense-making, creating, and expressing knowledge. Including oral storytelling, spoken work, video stories, drawing, role-play, writing in different genres such as graphic novels, regional dialects, and journalistic forms. These help us to expand the disciplinary canon and bring in diverse student lives and cultures meaningfully, giving students autonomy in articulating their growing subject mastery.
- **Future-centric capacity development.** UDL and Multiliteracies recognize an emerging world system of information and knowledge construction and exchange. In preparing students to flourish in their future, we cannot ignore the imperative to ensure they are competent beyond academic read-write skills. To engage as knowledge workers and effective citizens in their communities, they must be able to make sense of, use, create, and respond to knowledge in multiple modalities and forms.

Neurodiversity

“As a college educator in the field of neurodiversity and LD (Learning Differences) for more than three decades, I have seen many positive disruptive changes in the field of education. The most important change is that the deficit model for neurodiversity has been discarded, at least within the leading educational circles in the field. The idea that a student is broken and has come to an educational fix-up shop no longer makes intellectual sense. We have seen far too much evidence of what students can achieve to continue to cling to the model of brokenness that was first created in the middle of the last century.” - Maclean Gander. Educator and administrator Landmark College, Vermont. Landmark College is one of the colleges in the nation leading Neurodiversity advocacy.

The term “neurodiversity” was coined by Australian sociologist and activist, Judy Singer in the 1990s to advocate for people with Autism Spectrum Disorder (ASD). It later expanded to include ADHD, Dyslexia, and learning disabilities. Neurodiversity is an asset-based approach that sees “individuals with differences in brain function and behavioral traits as part of normal variation in the human population” and in practice focuses on “uncovering the strengths of neurodiverse individuals and utilizing their talents to increase innovation and productivity of society as a whole” - [Standard Neurodiversity Project](#).

Advocacy for recognition and integration of Neurodivergent learners counters ableist bias about interaction and learning based on legacy notions of “typical”. Is someone with dyslexia really “disabled” or is it that because we privilege the read-write mode? Would they be “disabled” if we naturally included oral or visual modalities in learning? Does Attention Disorder intensify this as a “disability” because we teach in rigid long lectures of intense focus? Would learners with Attention Disorder be more engaged and less harmed if teaching was designed in shorter chunks and/or more scaffolded to support focusing?

Read: [What is Neurodiversity \(webpage\)](#). Harvard Health Blog.

Read: [Neurodiversity as a Competitive Advantage \(webpage\)](#) by the Harvard Business Review. [Est. 15 mins]. This article shows how some companies have shifted their HR processes to create access for neurodivergent people who have specific talents they need – like pattern recognition, memory, and math skills. The article gives a set of principles companies could use for more inclusive hiring and workplace practices. As you read – consider how these translate into practices we could adopt in learning institutions and classrooms.

Explore. Explore [higher education institutions that have neurodiversity initiatives](#). If you are currently teaching, check out resources at your institution. If you are not currently teaching, identify colleges you are interested in teaching and check them out.

Read. Leweiki-Wilson, C., Dolmage, J., Heilker, P., & Jurecic, A, (2008) [Two comments on “Neurodiversity.”](#) *College English*, 20(3), 314-325. [4 pages]. The authors raise the principles of disabilities studies that question the normativity and ableist positioning that can be taken by well-meaning neurodiversity advocates.

Disabilities – Ableism

Disability: ‘a physical or mental impairment that substantially limits one or more of the major life activities of an individual’ (ADA 1990).

- **Medical models of disability** – see the person as impaired, needing to be cured, and needing documentation in order to receive accommodations. This is underpinned by a framework of ableism (Hutcheon & Wolbring, 2012).
- **Social models of disability** – emerging from [Critical Disability Theory](#), society is seen as a barrier that causes or exacerbates disability because of social perspectives of normativity. The approach is therefore to reframe this. “The methodology of disability studies as I would define it, then, involves scrutinizing not bodily or mental impairments, but the social norms that define particular attributes as impairments, as well as the social conditions that concentrate stigmatized attributes in particular populations” ([Minich, 2016](#))

Approximately 11% of post-secondary students (roughly 2.2 million) reported having a disability in the 2011-2012 data ([National Center for Education Statistics – NCES – 2016](#)).

Remember, this is what was reported, and the actual number might be higher as many students refrain from disclosing. This is also a number that trends upwards over time and so current numbers are likely to be higher.

Smith, Woodhead, and Chin-Newman (2021) review literature to distill key barriers that students with disabilities face. These include:

- Institutional barriers
- Lack of cooperation (inclusive policies lacking enforcement, and enforcement of non-inclusive policies)
- Lack of knowledge among faculty, staff, and administration. Faculty are a significant barrier in unwillingness to adapt content and questioning disability authenticity.
- Stereotyping and stigmatizing beliefs and practices.

Official accommodations

Offices of Accessibility and Disabilities Services (the name varies across institutions) – do intakes, determines if a student is eligible for disability support and accommodations.

- Students approach the office – presents evidence such as medical documents.
- The office provides an accommodation letter. This is sent by the office to the faculty or the student is given the letter to present to their instructors.

However, this method does not always result in inclusion because students must initiate the contact and self-advocate (Hutcheon & Wolbring, 2012). While this approach goes by the letter of the law, it does not in fact remove institutional barriers; rather it often creates additional barriers especially when we take intersectionality of identities into consideration.

1. Not all students are aware that such support exists.
2. Students might be afraid to disclose for a host of reasons such as fear of stigma and discrimination. (Barnard-Brak, Lechtenberger, and Lan 2010).
3. Students have to provide diagnostic evidence, often medical tests they cannot afford or are unprepared to do.
4. Not all students are able to take on self-advocacy, especially if they are otherwise life-impacted (e.g., working, caregiving) and/or shy or introverted, or are part of an unrepresented and marginalized minority group, and do not have the cultural capital and privilege for self-advocacy. (Devlin and Pothier, 2006).
5. Students might not be aware they have a learning disability; they have never been diagnosed and belief that they are just “slow” or “a bad reader,” when in fact they might be dyslexic.

Inclusive campus

This approach removes the inequitable burden on students and puts the onus on the campus to review and revise policies and practices toward inclusion of all students, regardless of disabilities (and all other identities) (Morina, 2017), i.e., it takes a Universal Design approach. Some suggestions include:

1. Accessible physical spaces
2. Proactive support and attention – especially in transitioning to college (first year).
3. Faculty training to shift perspectives and develop abilities to meet the needs of students with disabilities.
4. Peer training to shift perspectives that reduce ableist framing and stigmatization and to help students understand and support each other.

With an inclusive campus, while we maintain Disability Services and Offices of Accommodation, the majority of students will not need special accommodations because an inclusive campus will not pose as many barriers. For the most part, they can function effectively and be successful.

Explore. Vanderbilt University’s [Creating Accessible Learning Environments](#).

This guide emerged from a Learning Community that focused on Disability and Learning. It has a good overview of the theory and disability rights movement in higher ed. They also have a great set of strategies for creating accessible learning environments.

- What ideas are new to you? How does that change your perspective on creating accessible learning environments in your course design and classroom facilitation?
- What specific strategies will you adopt in designing your course and syllabus?

As previously mentioned, not all students learn the same. Students who are neurodivergent or disabled may struggle to keep pace with other students using the same learning methods that benefit your able-bodied, neurotypical students. While it isn't feasible to cover the minutia of every individual learner's needs, it may be helpful to consider the various types of disabled and neurodivergent students you might encounter, as well as some of the most notable resources and considerations you might offer in order to include such students.

The Learning Disabilities Association of America breaks down learning disabilities into eight primary categories:

1. **Dyscalculia:** People with dyscalculia may struggle to understand mathematical concepts, comprehend numbers, or use formulae.
2. **Dysgraphia:** Individuals with dysgraphia may have trouble writing letters, numbers, and symbols. This may further interfere with their ability to organize sets of data or remember letters or numbers they have seen.
3. **Dyslexia:** Dyslexia may cause difficulty in recognizing words and letters accurately and may also cause the individual to struggle with differentiating between phonemes (word sounds), recognizing rhymes, and identifying the syllables of a word.
4. **Non-Verbal Learning Disabilities:** Research concerning this category of learning disabilities is still ongoing. Individuals with non-verbal learning disabilities have sufficient to strong reading, writing, and speaking abilities but may struggle with other areas of learning, including social interactions and spatial understanding.
5. **Oral/ Written Learning Disorder with Specific Reading Comprehension Deficit:** This specific category of learning disability may inhibit one's ability to understand or accurately express/ employ language.
6. **ADHD: ADHD, also known as Attention Deficit Hyperactivity Disorder,** is not technically classified as a "learning disability" according to the DSM-5-TR, but it is classified as a miscellaneous disability type under the IDEA (Individuals with Disabilities Education Act) and many studies have shown that ADHD may affect learning. Additionally, some individuals with ADHD may have other learning disabilities- approximately 20 to 30% of children with ADHD have another, specific learning disability, for example. Individuals with ADHD are considered neurodivergent.
7. **Dyspraxia:** Dyspraxia is a learning disorder that causes difficulty with muscle control. This, in turn, affects coordination, speech, movement, and balance. Often times dyspraxia may present in an individual who has dyslexia or dyscalculia.
8. **Executive Functioning Learning Disorders/ Disabilities:** This category of learning disabilities is defined by an inefficiency or struggle in various cognitive areas of the brain, causing difficulties with processes concerning memory, cognition, and executive function. This can negatively affect one's ability to remember details, solve problems, manage time, and more.

Further details can be found on the [Learning Disabilities Association of America website](#).

What can an educator do to assist their students with learning disabilities or those who are neurodivergent?

While it may be impossible to predict every situation that may arise, there are some changes that may make disabled and neurodivergent students feel more welcome and assist their learning.

- **Consider using a dyslexic-friendly font that is easy to read.** “Open dyslexic” can be found online and is an excellent option. Other options that may be found on most computers and programs already include Arial, Comic Sans, Calibri, Open Sans, and Verdana. Avoid calligraphic or cursive fonts.
- **Increase the inter-line spacing of your documents.** This will increase legibility greatly for those with dyslexia.
- **Allowing late work in a class or having flexible deadlines** can be beneficial to those with Executive Functioning Learning Disorders and other learning disabilities. If you teach math, statistics, and other subjects that include numbers or data sets, providing students with additional time can increase accessibility for those students with dyscalculia.
- **Making audio recordings or video recordings** of your class or workshop can be essential for students with dysgraphia as they may struggle to take traditional notes.
- **Allow for regular breaks.** If teaching a class or hosting a workshop or other educational event that lasts longer than an hour, be sure to add scheduled breaks. If you are unable to include scheduled breaks, allow students to take their own breaks as necessary. This allows neurodivergent students to step away for moment and come back refocused.
- **As much as possible, plan your courses to be regular in nature.** For example, you might start every class session with a check-in, then move on to a review, and finish with a lecture and group discussion. Additionally, you might require journal entries to be turned in every class session, along with one assignment. Of course, this varies depending on subject and may not be feasible depending on your class. However, creating a sense of regularity and fostering good habits can benefit students with learning disabilities, as well as students with ADHD.

Of course, the best thing any educator can do for their students, whether they have learning disabilities or not, are neurodivergent or neurotypical, is to listen to their needs and be open to making changes. An instructor who is not willing to augment their original syllabus or course design as needed is an instructor who does not foster accessibility.

Digital Tools in Teaching and Learning

Using UDL principles we can pay strategic attention to integrating digital tools.

Technology = human-made tools to enhance thought and action.

Here is a [definition from Britannica.com](#): “The application of scientific knowledge to the practical aims of human life or, as it is sometimes phrased, to the change and manipulation of the human environment”. Technology therefore can be both analog and digital.”

Here are two short stories about the purpose of technology:

When you go to the hardware store to buy a drill, you don't actually want a drill, you want a hole ... [T]hey don't sell holes at the hardware store, but they do sell drills, which are the technology used to make holes. We must not lose sight that technology for the most part is a tool and it should be used in applications which address educational concerns. (p. 87) - Ingwerson, Donald W. (1996). A model for technology training: the Los Angeles County Office of Education's Technology for Learning Initiative. THE Journal [Technological Horizons In Education], Nov. 1996.

It is said that in the space exploration collaboration on Earth's first space station, there was the dilemma of writing in space. Ink tended to do odd things in zero gravity. The team met to problem solve. One nation's team had blueprints for altering ballpoint pens' ink delivery system, another team had new formulas for nanofiber paper that would prevent ink from coming off. Each team had unique ideas. The last team pulled out – a pencil. Problem solved. – An apocryphal story – origin unknown

Both stories highlight a focus on PURPOSE. WHY are we selecting a tool – a digital tool? The quote and story raise the principle of Occam's Razor; the simplest tool that serves the purpose effectively is the best tool for the job. And sometimes, it's digital; but sometimes it is analog. Our focus should be the outcomes toward which we travel. Technology is a tool to get there. In teaching, we should ask what are the best tools to create inclusive, equity-minded teaching processes and environments.

Questions we can ask as we choose modalities for teaching and learning:

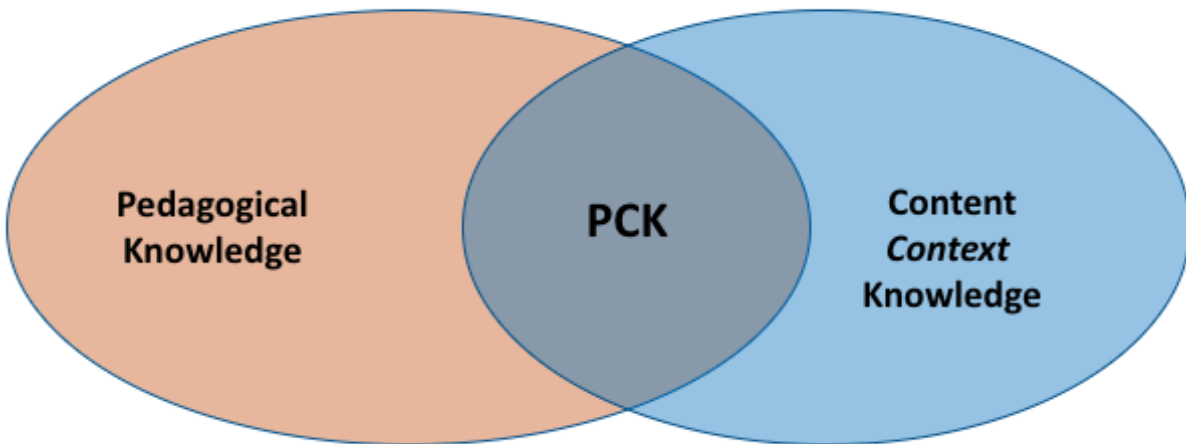
1. Who is it for?
2. What learning and/or skill development do I want to have happen?
3. What skills are necessary for a student to do well?

4. Does this tool create greater inclusivity and equity in access, application, and learning?
Who is going to be left out? Who might it leave out or pose barriers to? What must I do to avoid this?

Conceptual Models for Integrating Technology into Teaching and Learning

Technological Pedagogical Content Knowledge (TPaCK)

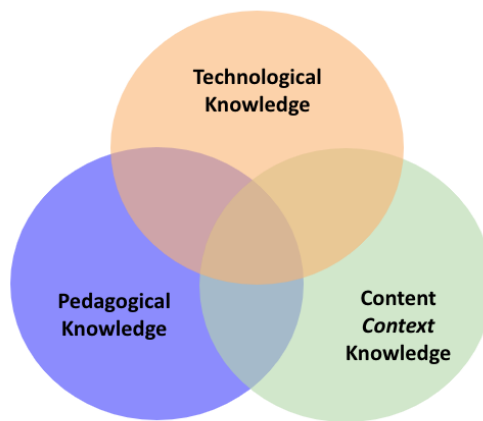
Lee Shulman created the concept of PCK (1986) – Pedagogical Content Knowledge.



In this figure, just being a content expert or just having pedagogical knowledge are necessary, but insufficient to help our students learn. The intersection of with Pedagogical knowledge helps us design strategies that help students work with the content to construct knowledge, i.e., to learn.

To Shulman's model, we can add – CONTEXT. In practicing systems and design thinking for ethical education, the teacher also brings in Contextual knowledge of students' identities, contexts, and the teaching situation, i.e. applying Empathize and Define in the Design Thinking process. This enables us to design inclusive and equity-minded pedagogical strategies.

Mishra and Koehler (2006) created TPACK to integrate technological knowledge.



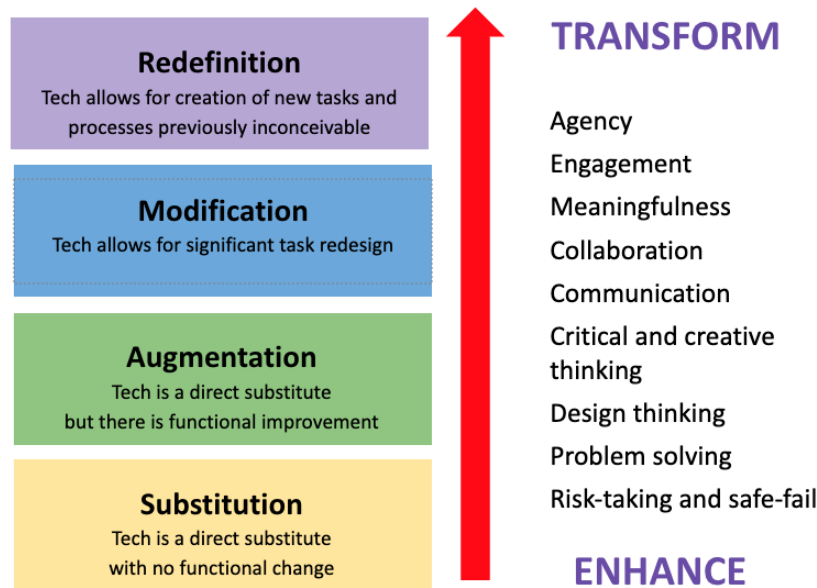
An educator needs to engage and synthesize all three domains.

- We are **Content** experts. We use systems and design thinking to build **Context** knowledge that can inform how we present content.
- To this we add **Pedagogical** knowledge to bring in inclusive, equity-minded strategies.
- Our **Technological** knowledge helps us integrate technologies and multiple ways of finding, using, and sharing information.
- Supporting all this are our explicitly examined and embodied values, beliefs, and goals for our students.

“Our model of technological integration in teaching and learning argues that developing good content requires a thoughtful interweaving of all three key sources of knowledge: technology, pedagogy, and content.” - Mishra & Koehler, 2006; p. 1029

Substitution, Augmentation, Modification, Re-Definition (SAMR)

The SAMR model for transforming teaching and learning was developed by Ruben Puentedura.



The model has 4 stages

1. We can **substitute** technology for a manual process without changing the activity functions.
2. We can **augment** a process with technology that allows some gains in how the activity is done.
3. We can **modify** a process using technology that actually changes the activity creating many gains in learning and teaching.
4. We can **redefine** a process entirely bringing in new activities and ideas the reframe goals and approaches in teaching and learning.

According to Ruben Puentedura, who created this model, ALL levels are valid for teachers wanting to integrate technology. This is the notion of “edging-in”; starting with small steps, testing and trying, and using feedback to engage deeper integration. Over time, as we build confidence and self-efficacy with digital tools, we are able to conceptualize and create deeper integration that supports learning for more students in powerful equity-minded ways.

This forward movement of edging-in is critical for transformative education to actualize movement from the transmission toward the empowerment model. Digital tools enable us to design flexibility and access into many aspects of learning – albeit being mindful in the Empathize and Define phases of design of access issues with digital tools.

Notice that empowerment in teaching and learning expands as you move up from Substitution toward Redefinition. When we engage UDL principles and goals to work inclusively and create equity-minded spaces and processes for learning, we work with Modification and Redefinition.

We can use this model to transgress and transcend legacy practices – to transform education. The principles of technology integration for ethical, future-focused education:

- **Capacity Building:** Enhance learning experiences and outcomes to engage content mastery with meaningfulness, agency, higher-level thinking, and our ethical agency as educators.
- **Adaptivity or Nimbleness:** Build skills and capacities that help students flourish in our classrooms and into their futures. Develop nimbleness in our design and facilitation capacities.
- **Justice – Diversity Inclusion Equity. Ingrate** technology to include and empower diverse learners to succeed as well as to dismantle barriers to learning and flourishing.

Watch: [How to apply the SAMR model with Ruben Puentedura](#) [6:53 mins]

Ruben Puentedura explains how and why he created the SAMR model and gives an overview of how to use it.

Watch: [Demystifying SAMR with Ruben Puentedura](#) [15:33 mins]

in this video, Ruben Puentedura speaks some common misconceptions and how to use SAMR effectively.

SAMR Template

Using the SAMR template, modify one assignment or activity. Build (dream) student-centeredness and inclusive, equity-minded engagement through integration of UDL and multiliteracies. SAMR helps us remove barriers and amplify empowerment – student agency, voice, meaningfulness, and authenticity.

Level	Task	Pedagogical Change
<u>Substitution</u> Digital technology is used – but does same task as before.	task	No functional change in the teaching-learning process; this is still teacher-centric. Nothing is gained from using the computer.
<u>Augmentation</u> Digital technology creates more effective task performance.	task	There is some functional benefit.
<u>Modification</u> Moves beyond traditional teacher-centric approach and towards some classroom transformation.	task	There is significant functional change in the teaching-learning process.
<u>Redefinition</u> Digital technology enables new processes and outcomes that were previously inconceivable	task	There is a transformative shift in teaching and learning. Digital technology is necessary and integral to the process.

Examples of SAMR application

SAMR applied to essay writing

Level	Task	Pedagogical Change
<u>Substitution</u> Digital technology is used - does the same task as before.	Students write an essay, then type final copy on a computer. Print out to hand in.	No functional change in the teaching-learning process; this is still teacher-centric. Nothing is gained from using the computer.
<u>Augmentation</u> Digital technology creates more effective task performance.	Students draft the essay on a computer using citation management software. Revisions are edited and formatted on the computer. Canvas upload.	There is some functional benefit – Citation management saves time and is more accurate. Easier and hence more motivating to do revisions. The process is still teacher centric. Time saving efficiency helps busy students.
<u>Modification</u> Moves beyond traditional teacher-centric approach and towards some classroom transformation.	Students write an essay on wiki pages in stages with peer-review and revision.	Significant functional change. Digital technology is necessary rather than an addition. Inclusivity is increased: Wikis allow both in- and out-of-class collaboration at times that work for them to work on writing and do peer review. The teacher can comment through the process of writing and so is more integrated in the process in a co-creative way. More opportunity to support writing facilitation to student ability levels.
<u>Redefinition</u> Digital technology enables new processes and outcomes that were previously inconceivable	Students do projects to make a documentary video or website that explores and responds to a topic/issue. Each group takes on a different role/perspective in relation to the issue, conduct research using both scholarly and community sources, and build their	Digital technology is necessary and integral to the process. Learning is student-centered and led. Students generate questions, lead discussions, and have autonomy in designing content. Teacher becomes project guide and resource facilitator. Learning includes information literacy skills – search, identify, evaluate, compare, select.

	final product that is presented online.	Learning integrates outside classroom experiences connecting with community and engaging authentic audiences. Meaningfulness is enhanced. Content knowledge and skills are learned as a result of developing the product for an authentic audience.
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SAMR applied to Art History

Level	Task	Pedagogical Change
<u>Substitution</u> Digital technology is used but does the same task as before.	Art terms. Students write definitions. Print out and hand them to teacher. Assessed in mid-term quiz.	No functional change in the teaching-learning process; still teacher-centric. Nothing is gained from using the computer.
<u>Augmentation</u> Digital technology creates more effective task performance.	Art terms. Students submit definitions in a 1-page paper via Canvas. Teacher comments within the LMS. Assessed in mid-term quiz.	Some functional benefits. Students do not have to print – all work is done digitally. Teacher able to read and give feedback to students more easily. If a student is not able to come to class, the work is not lost.
<u>Modification</u> Moves beyond traditional teacher-centric approach and towards some classroom transformation.	Blog or wiki. Students post definitions - visible to peers. Students assigned to check and improve each other's definitions, to add and expand, leave comments for each other. Teacher responds in real time, adds links to further resources for students to explore and develop definition. Assessed in process by teacher and peers. And mid-term quiz.	Significant functional change. Digital technology is necessary, not an addition. Shared or Peer Learning – easier with digital tools. Students support and learn from each other. Feedback and resources for one student are available to all. Teacher does not have to repeat feedback to different students. Community – modeling sharing and helping each other.

		Multiple points of assessment – formative & summative.
<u>Redefinition</u> Digital technology enables new processes and outcomes that were previously inconceivable	Students create their own blog page (connected to a main class blog) in which they explore their art term in relation to painting. Short assignments throughout the semester guide them in adding to their blog page - images, reflections, quotes, videos, links to websites, etc., all linked with their term. This gives a more in-depth understanding of painting terms, as well as allow students to be creative, sparking the interest of other students who can look through the pages to see what their peers have done.	Digital technology is integral Learning is student-centered and led. Each student is “owner” of his/her blog page – autonomy and meaningfulness. Teacher becomes project guide, resource facilitator. Information Literacy: Development of ability to search, identify, evaluate, select. Learning Community – students learn a range of art terms by visiting each other’s pages.

Reflect: Pause here to recall your education journey and your goals as a teacher-scholar-leader to transform learning in any kind of space. How would you connect UDL and Multiliteracies to your vision and mission for teaching, leading, and learning?

1. How are UDL and multiliteracies connected to educational equity? How can these frameworks prevent educational injustice and oppression?
2. What UDL and multiliteracies principles are you seeing in this course?
3. What UDL and multiliteracies principles do you think you can apply to your own teaching design?

Reflect: In your undergraduate education, what was your experience of students with disabilities – either in your own case, or in interactions with peers? Make 2 lists in response to these questions:

1. Looking back, were there ableist norms in policies and practices, in school environments?
2. Were there elements of an inclusive campus, or at least an inclusive classroom?

Reflect on what you can do in the microcosm of your classroom to apply UDL principles to create an inclusive, equity-minded classroom community in the following areas:

- Course & and practices (especially in mitigating non-inclusive institutional ones)
- Teaching materials
- Class facilitation methods

Also consider what you can do in order to:

- Deepen your awareness and skills to be more effective with disabilities inclusion
- Bring greater awareness and reduce negative perspectives of disabilities among your students.

Look at your TPS and DVS worksheets – can your reflections to some of these questions inform your responses to the questions on the worksheets?

Further Exploration

UDL and Multiliteracies: Here is some material to begin building a UDL inspired library for your continuing growth.

Cope, B., & Kalantzis, M. (2015). [The things you do to know. An introduction to the pedagogy of multiliteracies](#). In B. Cope & M. Kalantzis (Eds.), *The pedagogy of multiliteracies. Learning by design*. Palgrave Macmillan. [approx. 23 pages]

Cope and Kalantzis provide a brief history of the evolution of the idea of "literacy" and "Multiliteracies". They have a good section on the differences between "Didactic" and "Authentic" pedagogies - and the associated rise and debates around progressivism, critical pedagogies, identity pedagogies, and constructivism. They then introduce their notion of "Reflexive" pedagogy - there is a really good table presenting different knowledge building processes in Didactic, Authentic, and Reflexive pedagogies. The chapter presents Learning by Design pedagogy - Experiencing, Conceptualizing (knowledge creation), Analyzing, and Applying - a reflexive pedagogy that combines elements of didactic and authentic approaches. The chapter presents an epistemological basis for different kinds of "knowledge action" as learning - not just what we know, but the things we do in order to know. This is a solid justification also for Active Learning methods as well. For more articles on different aspects of multiliteracies, look at the list of references and open access items on the [Multiliteracies website](#).

Fitzgerald, A. (2020). Antiracism and Universal Design for Learning. Building expressways to success. CAST.

Andratesha Fitzgerald is a teacher and leader in urban schools. In this book, she looks at UDL as an effective framework for developing pathways for communication, engagement, and skills development, especially among underserved students of color.

Chardin, M. & Novak, K. (2021). Equity by design. Delivering on the power and promise of UDL. Corwin Press.

The authors connect justice with UDL with strategies to help teachers work transformatively. The book has strategies for designing and facilitating culturally responsive, equity-minded learning. They provide evidence-based examples and case studies. While much of this book focuses on K-12 settings, the principles and strategies are easily adapted to higher education.

Tobin, T. J. & Behling, K.T. (2018) Reach everyone, teach everyone. Universal Design for Learning in higher education. West Virginia University Press.

The authors broaden UDL beyond students with disabilities, presenting the UDL framework as a framework grounded in the neuroscience of why, what, and how people learn. They show how it is an effective way to operationalize and practice designing teaching that includes a wide range of students. They propose that UDL should be "just part of what we do" in expanding it as a general diversity and inclusion framework. The book has many resources, real-world case studies, and active learning techniques.

Neurodiversity and Disabilities

Barnard-Brak, L., Lechtenberger, D., & Lan, W. Y. (2010). Accommodation Strategies of College Students with Disabilities. *The Qualitative Report* 15 (2): 411–429

Devlin, R. F., & Pothier, D. (2006). *Critical Disability Theory: Essays in philosophy, politics, policy, and law*. University of British Columbia Press

Hutcheon, E. J., and G. Wolbring. 2012. Voices of ‘disabled’ post-secondary students: Examining higher education ‘disability’ policy using an ableism lens.” *Journal of Diversity in Higher Education* 5(1):39–49. [Link to Article](#).

This qualitative study used ableism as a lens to explore how students with disabilities navigate college. They found 5 themes in their body-social-self framework – hegemonic voice, voice of the body, voice of silence, voice of assertion, voice of change. Their findings show that there is a need to examine higher education policy and its capacity to address differences in ability.

Leweiki-Wilson, C., Dolmage, J., Heilker, P., & Jurecic, A, (2008) [Two comments on “Neurodiversity.”](#) *College English*, 20(3), 314-325. [4 pages]

The authors raise the principles of disabilities studies that question the normativity and ableist positioning that can be taken by well-meaning neurodiversity advocates.

Minich, J. A. (2016), Enabling whom? Critical disability studies now. *Lateral*, 5(1). [Link to Article](#).

The author addresses the “elision of race in disabilities studies, tracing the history of normative care of bodies that are seen as personal/private property” that is rooted in ableist frameworks. She calls for accountability to people with disabilities at the institutional level, reminding us of the role of individual accountability that is often unrecognized and unsupported at department and institutional levels.

Moriña, A. 2017. “Inclusive Education in Higher Education: Challenges and Opportunities.” *European Journal of Special Needs Education* 32 (1): 3–17.

Oliver, M. 2013. “The Social Model of Disability: Thirty Years On.” *Disability & Society* 28 (7): 1024–1026.

Smith, S. A., Woodhead, E., & Chin-Newman, C. (2021). [Disclosing accommodation needs: Exploring experiences of higher education students with disabilities](#). *International Journal of Inclusive Education*, 25(12), 1358–1374.

Chapter 9 - Expanding and Transforming Disciplinary Content

We continue exploring UDL and Multiliteracies as tools to expand and transform disciplinary content.

This chapter is an exploration of the following areas:

Use Empathize and Define in Design Thinking to examine legacy discourses in the light of the current and future diversity of learners and contexts. This will help you to unpack and surface exclusions and marginalization in disciplinary forms of discourse, the canon of authors and sources of material in teaching and research, and the methods used in bringing this material to learner.

Textbooks and Open Educational Resources (OER). We will look at OER based on Open Access principles as resources for helping us take away the barriers of textbook costs. This will also help us address gaps in representation of diversity in scholarship and teaching materials so that no matter what we teach, we are intentionally designing to expand and transform our legacy disciplinary canon.

UDL And Multiliteracies in transforming content. As part of the above, we will also look at modalities of texts in creating greater inclusivity in content curation.

You will explore OER resources and begin developing your strategies for transforming your course contents.

Examine Your Discipline's Discourse, Materials, and Methods

In this section, we will use Design Thinking's Empathize and Define modes of analysis to reframe and ideate your disciplinary forms of discourse, the canon of authors and sources of material in teaching and research, and the methods used in bringing this material to learners.

Task: Design Thinking to examine course content. Think through the reflexive probes below and make notes. If you are not currently teaching, reflect on courses you took in undergraduate education, think about a course you plan to teach, and look on the internet for sample syllabi. Also look at your current scholarship in analyzing and surfacing the patterns of discourse in your disciplinary space. You do not have to answer all the questions; they are there to guide you in the overall goal of surfacing disciplinary assumptions and patterns.

Reflexivity - Empathize and Define the larger contexts of education

- Who are our learners today? Consider how broadly diverse they are in terms of cultures, histories, nationalities, abilities, and lived experiences. Make a list. Consider also the breadth of neurodivergence they bring.
- What are the contexts of learning today? Consider learner contexts such as employment, caregiving, full- and part-time learners. Consider future contexts of careers, citizenship, and the skills and capacities they need to be positively generative and to flourish. Also consider digital and physical spaces.

Reflexivity – Examine the legacy paradigm of your discipline

- What constitutes the legacy paradigm of texts, ideas, methods, and authors that are officially recognized as representative of the discipline, especially in teaching curricula?
- Check alignment: To what extent has the legacy paradigm evolved in alignment with the global shifts – representative of diverse cultures, histories, methods of research, and forms of communication? To what extent have new voices in the field from non-Eurocentric spaces been integrated?

Reflexivity – Examine your typical course curriculum

- Is there usually a set textbook for a course? To what extent is it possible to replace or supplement it with a plurality of sources, especially with Open Access materials?
- Is there a representation of scholars of color?
- Is there a representation of international voices?
- Are there multiple text types – different genres and forms like webpages, op-eds, podcast, video, journalistic writing, reports etc.? Is it mostly academic written texts?

Overall, do you find a broad representation of scholarship and voices? Is there alignment with the multimodal information and knowledge world in which we live?

Open Educational Resources (OER) to reimagine curricula

Reflect: Before jumping into this exploration, recall your experience with curricula material like textbooks through your undergraduate education.

1. Were you required to buy course textbooks for your courses? Did most courses require a textbook? How much of your school budget did it take?
2. Were you aware of courses – maybe in other disciplines to yours – that did not require textbooks and provide alternative material?
3. If you used textbooks for your courses, did you see a diversity of scholars and scholarship represented in the textbooks?
4. Did you get additional sources and materials that brought in alternative discourses from non-academic spaces or aesthetic spaces, and modalities (video and audio)?

Textbooks are a course feature we are so accustomed to that we often overlook how it creates significant inequities in education. Here are 2 of them:

Prohibitive costs: A system of textbook publisher monopolies have escalated textbook costs. Here is some information from the [Education Data Initiative](#):

- The average postsecondary student spends between \$628 and \$1,471 annually for books and supplies as of the 2021-2022 academic year.
- Hard copy books can cost as much as \$400, with an average price between \$80 and \$150.
- The price of textbooks increases by an average of 12% with each new edition.

We also know that many students use their financial aid to buy textbooks. In 2016, 5.2 million U.S. undergraduates spent a total of \$1.5 billion of financial aid on textbooks – per semester. This cost has increased many times today. [Student Public Interest Research Group. Covering the Cost \(2016\). Link to Student Public Interest Research Group website](#)

Singular viewpoint that perpetuates the legacy paradigm: Textbooks are often written by one or a few authors whose curation of resources and bibliography is not representative of the students who will use the textbook. They often showcase a disciplinary legacy canon of male, European scholars especially in Math, Literature, History, and Art. They struggle to be culturally and globally relevant. This is not to say there are no well curated textbooks; however, they are still not the majority.

“Expanding educational opportunities is more possible now than it has ever been before. ... However, our systems for sharing information in education have not caught up with the potential of 21st century technology. Instead, the educational materials market is held captive by legacy publishing models that actively restrict the dissemination and innovative use of resources in a world that craves educational opportunities. Textbook prices have continued to rise rapidly, leaving too many students without access to their required materials. Digital offerings from traditional publishers come laced with access restrictions and expiration dates with little savings in return, and print editions are too often out of date by the time they hit the shelves. ... For too long, our educational systems have operated with a fundamental disconnect between practices left over from the analog world, and the vast potential of technology and the Internet to support more affordable, effective teaching and learning. The movement for Open Education seeks to close this gap” - [SPARC Open Education](#)

Open Educational Resources (OER)

OER is part of the [Open Access \(OA\)](#) movement for knowledge diversity, inclusion, and equity in an effort to democratize knowledge. OA perspectives, tools, and methods can move knowledge outside of paywalls to make it freely available to the world.

NOTE: The links on this page take you to useful OA information and tools. While you do not have to read all these webpages in detail, do use the links to browse and bookmark some pages.

Definitions of Open Access (OA)

Open access is the “the free, immediate, online availability of research articles coupled with the rights to use these articles fully in the digital environment. Open Access ensures that anyone can access and use these results—to turn ideas into industries and breakthroughs into better lives.” ([SPARC Open Access](#)). OA removes both price barriers (subscriptions, fees) and permission barriers (some copyright and licensing restrictions) to accessing and using materials. ([Claremont Colleges Library](#))

“[T]eaching, learning, and research resources that are free of cost and access barriers, and which also carry legal permission for open use. Generally, this permission is granted by use of an open license (for example, [Creative Commons licenses](#)) which allows anyone to freely use, adapt and share the resource—anytime, anywhere. “Open” permissions are typically defined in terms of the “5R’s”: users are free to [Retain, Reuse, Revise, Remix and Redistribute](#) these educational materials. ([Sparc Open Access](#))

Benefits of OA ([Claremont Colleges Library](#)) - How do these diversity, inclusion, equity, and the justice of knowledge creation and access?

1. Improves the pace, efficiency, and efficacy of research
2. Increases authors’ visibility, and thus the potential impact of their work

3. Removes structural and geographical barriers that impede the free circulation of information
4. Increases the possibility of collaboration, which means there is a higher likelihood of better work and more capacity building.
5. Enables the re-use and analysis of published material to build new knowledge
6. Sparks innovation and facilitates interdisciplinary research and exchange of ideas
7. Strengthens the dissemination, review, and development of breakthroughs, not only for the benefit of research and academic communities but for society at large.

Science Europe Working Group on Open Access. (Revised September 2015). [Science Europe Principles on Open Access to Research Publications](#). *Licensed under CC BY*

4.0. D/2015/13.324/3

Integrating UDL and Multiliteracies

In integrating OER, we can use UDL and Multiliteracies as tools to expand subject matter content in ways that expand equity-minded, culturally relevant, and multimodal course development.

We might easily get rid of a single, expensive textbook. The question then becomes – what do we replace that with? UDL and Multiliteracies present the following strategic questions as you look at OER:

1. What OER resources help me integrate UDL and multiliteracies principles with multiple modes of representation, engagement, and expression? How do I get beyond the dominance of read/write and paper formats?
2. What OER resources help me bring in culturally relevant material and create a better representation of diversity in authors and discourse styles?
3. What OER resources help me bring in meaningful and authentic narratives and images that create contextually relevant connections to larger-world events, people, and information?

What OER resources help me create a non-ableist set of course materials? What else must I learn in order to do this effectively?

Create opportunities to co-create with students enabling them to bring in culturally and personally relevant material to their learning.

In releasing us from textbooks and a single legacy modality and the danger of a single story (Adichie, 2016), UDL and multiliteracies open pathways for multiple stories and voices - video, images, alternative texts, non-Western, non-male authors, and connections that counter and transform dominant narratives. Bringing in different genres, art, poems, stories, information from current events and non-academic spaces, we create opportunities for students to critical

engage and question paradigmatic knowledge, and to expand and construct knowledge in culturally and contextually relevant ways.

Expanding and Transforming Your Course Content

Task: Explore OER in curating content for your courses. Browse through these websites with a view to gathering resources you might use in designing your course.

As you browse the resources, evaluate them in terms of representation, cultural relevance, and meaningfulness for your students.

Use Design Thinking processes of Empathize and Define in reflecting on who our learners are and your analysis of the legacy paradigm for content in your discipline.

- Explore The [Claremont Colleges Research Guide on Open Access](#). In addition to definition and benefits, they have information on OA misconceptions, processes for OA in scholarship and teaching, and connections to more resources. Specifically, focus on exploring **How to Find OA Content** – there is a wealth of OA repositories that you can draw from both for teaching and scholarship.
- [OER Commons](#) – “A public digital library of open educational resources. Explore, create, and collaborate with educators around the world to improve curriculum.” This site offers free membership so you can find content created by thousands of educators, join groups, and also become a content provider. This initiative is a great example of co-creative collaboration among educators. They use a platform called **Open Author** that you can learn to use to build your own OER material to share.
- [OpenStax](#) – This is a non-profit initiative at Rice University. Their mission is to improve access to knowledge and learning for everyone through creating and sharing OER. Their standards are to use expert authors who create OA textbooks to their standards of scope and sequence, and to ensure a peer review process for the materials they create. You can set up a free account to access their resources.

Make a list of legacy or canonical texts – textbooks, primary documents etc. used to teach the subject you hope to teach (or currently teach).

Based on your exploration make a second list of texts OA texts that are more representative, culturally relevant, and meaningful that you can bring into your course.

Chapter 10 - Peer Review

We will be engaging in peer review of your lesson plans in class. Please make sure you have read the instructions and guidelines in your Assignment Textbook.

Peer review and feedback are active, formative processes that engage learners in reading/observing their peers' work in order to provide actionable feedback to each other.

Benefits of Peer Feedback

Research has found that peer review and feedback helps students improve their work as well as develop capacities for learning and interpersonal development.

1. **Multiple ideas and perspectives.** Peers are likely to introduce each other to ideas and writing/thinking strategies from different perspectives, especially when multiple peers are involved (McConlogue 2015).
2. **Reviewer benefits through metacognition.** Peer feedback engages students in actively thinking about the contents and writing, and applying assignment criteria in discussing the work with peers. This subsequently helps them improve their own work. (Flower et al. 1986; Patchan and Schunn 2015). Some studies (Cho & MacArthur, 2011; Lundstrom & Baker, 2009) found that even when students give feedback without receiving any in return there were positive effects on the reviewers writing.
3. **Community of writers** (Graham, Bollinger, et al., 2012) – a practice of peer review and writing develops an engaged community of writers where students share writing to give and receive feedback. This can foster the following:
 - a. A safe reciprocal process for developing writing.
 - b. Deeper engagement in writing.
 - c. Development of metacognition and learning how to learn.
4. **Audience awareness.** Peer review is reciprocal and helps students experientially learn about audience needs and to read something from an audience perspective. (Beach & Friedrich, 2006; Englert & Mariage, 1991; Englert, Mariage, & Dunsmore, 2006).

What can go wrong with peer review?

1. Students might not value peers' comments as much as the teacher and thus pay less attention to the process.
2. Students are not always able to identify and explain the problems to each other.
3. Students can make superficial comments ("it's great") that may be inaccurate and unhelpful.
4. Students might focus on minor editing issues rather than substantive writing issues.

Before reading ahead, consider what strategies you can use to preempt the issues above. Then continue to the next page.

Strategies for Effective Peer Review

Peer review only works when there is effective teacher facilitation and scaffolding. (MacArthur, 2016; Philippakos & MacArthur, 2016; Topping, 2005). Here are some elements to integrate into the process.

Intentionality and Instructions: Provide a dedicated time, clear instructions, guiding documents, and a reporting back time to share what they found that will also allow you to provide more input.

Provide clear criteria for review. Provide a rubric with specific criteria and check to ensure students understand what the criteria mean and how to apply them to the assignment. Clarify as needed.

- One way to do this effectively is through think-aloud modeling where you demonstrate reading, analyzing, and responding to a piece of writing using the criteria.
- It also helps to demonstrate this using samples that show a range of writing so students see exemplars of writing at different developmental stages.

Provide feedback structure. Scaffold good feedback by providing students an oral or written template that guides them in reading, analyzing, and communicating their feedback, for example: Identify the problem – explain why it’s a problem – suggest action to address the problem.

Training and practice. Ideally, provide students time to practice on a common document so they can compare their observations and suggestions (essentially, do a norming process) as a way of checking that they understand the criteria/rubric you have provided.

Scaffold reviewing over a semester. Students will get better at reviewing and providing formative, actionable feedback if you do it more than once. Begin with smaller and simpler writing assignments. Over the semester, as their writing complexity or assignments get more complex, the practice they have had will help them continue to give good feedback.

Focus by chunking. Keep the reviewing of content/structure separate from the mechanics of checking spelling, syntax, and punctuation. This will help focus students on the substantive aspects of an assignment and not get distracted by copy-editing and discussing the mechanics.

Further Exploration

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Chapter 11 - Assignments and Assessments: Foundations & Design

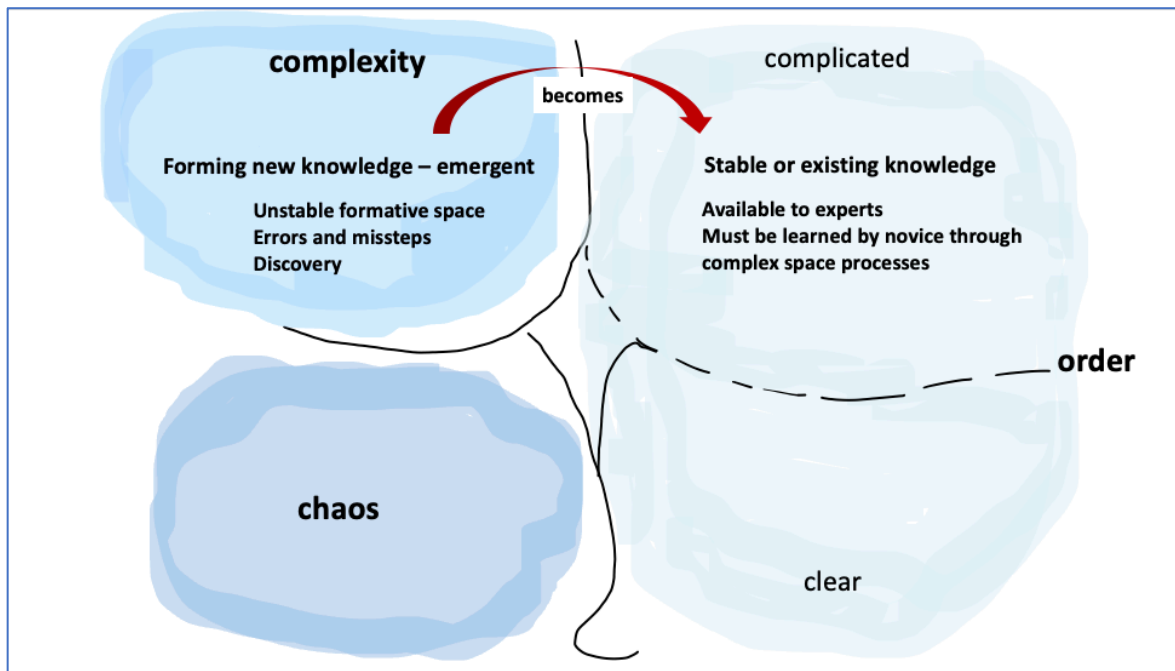
This chapter focuses on the very heart of learning – assessment. Without assessment, we do not know if we are learning, making progress, or growing. And yet, assessment – and the assignments that come along with it – have a huge propensity to hurt the heart of learning.

This chapter examines why this is so and reframes assessment goals and methods as formative processes that support learning. Learning is also reframed as a creative adaptive process that is emergent, time-bound, and iterative and therefore in need of a formative process to make learning and growth visible as it happens.

1. Foundations –
 - a. Learning as a creative adaptive process.
 - b. Assessment's goal is to make learning visible and foster learning.
 - c. Learning is a natural and powerful human drive.
 - d. The negative impact of social and schooling conditioning – fear of mistakes and grade anxiety.
2. Formative model and principles for inclusive, equity-minded, and learning focused assignments and assessments.
3. Transparent assignment design

Overview: Learning as a Creative Adaptive Process

Leading as a creative adaptive process over time. We engage with information, connecting that with prior knowledge, experiences, and questions to build knowledge. Or we practice skills, stopping to adjust and modify as we gain mastery. Therefore, learning happens in a cognitively unstable space. It is adaptive and emergent because if we persist and have feedback, we do come to know. In the Cynefin figure below, learning is located in the Complex domain.



Learning is iterative – we can repeat, expand, and modify to improve our knowledge and skills.

Learning necessarily includes missteps and errors. Because learning is necessarily a process of entering the unknown – new knowledge and skills – we naturally will make errors and go down the wrong paths. These are rich points of information or feedback that can guide us to modify and adapt to sharpen and improve our work.

Learning is naturally dissonant.

When we learn something new, we are in a cognitive-affective space where things are not known, not mastered (yet). Learning is transitioning from knowing something (my stable state of prior knowledge), to not knowing something (starting to learn), to an emergence of new knowing and development of skills. The process is naturally dissonant because we experience moments of not understanding, struggle in grappling with ideas, trying things out, making mistakes. We might experience contradictions with conflicting ideas and perspectives. Things seem paradoxical, “out of joint”.

The added dissonance of inequity.

Many learners experience added dissonance beyond the natural dissonance of learning.

This added dissonance comes from intersections of inequitable and oppressive teaching design and from multiple social determinants of learning like work, life responsibilities, hardships etc. Together, they create marginalization, exclusion, and erasure of learners. More insidiously, they create self-judgment and a lowering of self-worth that significantly affects learning outcomes.

For example, learning calculus, a new challenging subject creates dissonance. Productive struggle with support will help me stay engaged. But, if I am socially isolated, or feel I cannot ask questions, or make mistakes, or I am exhausted working 2 jobs, if the process is punitive and inflexible, these added dissonances can increase dissonance and tip the balance into disengagement. I am more likely to believe that people like me are not good at math, or that it's no use trying, and give up.

Mastery moves knowledge into a stable space. As we master something, the knowledge we created is aligned to current paradigms of knowledge, i.e., stable knowledge. In Cynefin, new knowledge and innovations eventually become part of established knowledge in Complicated space. For example, the internet evolved as innovation in Complex space but now everyone uses it.

Creative thinking and innovation also happen in complex space thinking – where we form new knowledge because we see beyond or question the existing paradigm to expand or replace ideas. Creativity and innovation therefore – like learning – are emergent, turbulent, include missteps and error, and are iterative. Framed this way, we can think of learning as a creative, adaptive process.

Assessment is about making learning and learning process visible

“Recognizing when learning is taking place and making this visible is another of the foundations on which inclusive practice is built.” – Project Zero. Harvard University

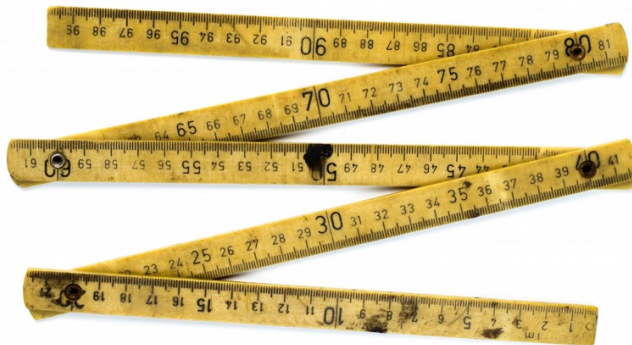
We know we have learned something if we can use it, articulate it, or repeat it.

“It is critical that the teaching and the learning are visible. There is no deep secret called “teaching and learning”: teaching and learning are visible in the classrooms of successful teachers and students, teaching and learning are visible in the passion displayed by the teacher and learner when successful learning and teaching occurs, and teaching and learning requires much skill by both teacher and student. The teacher must know when learning is correct and incorrect; learn when to experiment and learn from the experience; learn to monitor, to see and give feedback, and know to try alternative learning strategies with others do not work. ... The more the student becomes the teacher, and the more the teacher becomes the learner, then the more successful are the outcomes.

This explanation of visible teaching relates to teachers as activators, as deliberate change-agents, and as directors of learning.” – John Hattie. Visible Learning, 2009. p.25.

Notice in this description of learning made visible, there is a creative adaptive process at play with experiment, experience, monitor, feedback, alternative strategies, failure or unpredictability. Assessment is not a singular linear process. Instead, assessment is part of a complex system of learning – the dynamic interrelationships of teachers, learners, work processes, guidelines, instructions, feedback, revision, and growth.

In the light of the above, think how we can reframe “assessment”. Here is a typical metaphor for assessment as measurement. What are alternative metaphors that present assessment as making visible learning that is emergent and complex?



[Image source](#)

In these images, consider what is being assessed, who is doing the assessing, and how the learning is made visible.



[Image source](#)

Gardening – planting something small and then tending it as it grows. What is the nature of the relationship between work - assessment – feedback – and growth?



[Image source](#)

Learning to ride a bicycle – Becoming familiar, finding balance, moving from wobbly and falling to steady riding. What is the nature of the relationship between the work-assessment-feedback-and growth?

Examining the Foundations of “Assessment”

Think about the word “assess” in the context of formal teaching and learning - what other words and images come to mind? What has been your lived experience with this word?

Unpacking the Opaque Word ASSESS

“assess” comes from Latin *Assessus* - “sitting by” or “sitting beside” - to assist in the office of a judge. Originally, this role was for estimating the amount of a tax. The word "assess" simply means to gauge something (how far we've travelled, if something is sufficiently cooked). Feedback is simple action and response (we touch something and feel how hot or cold it is, the faces of an audience as we are speaking tell us if we are sufficiently audible etc.).

In education, assessment is at the very heart of learning (we only know we are learning if we can gauge progress). But for many of us, schooling has hurt the heart of learning. Assessments occupy a negative cognitive-emotional space. We fear them – they signal being judged, being inadequate. Assessment is anxiety-filled, oppressive, counter to well-being, something to avoid, if possible, to be survived if not avoidable. Assessment done badly dampens the drive to learn.

A natural drive to learn

However, we did not begin life this way. We are all born with a drive to learn.

Think about young children in your life – and your own childhood. Children begin with curiosity to explore and discover. Especially before formal schooling, assessment is natural and joyful; it's discovery of whether or not something is happening or possible as we try things out. Think of babies learning to crawl or stand; toddlers exploring books, learning to talk, draw, write; figuring out how a toy works; learning to ride a bicycle or skateboard etc. When we engaged in all this pretty intense learning, we did not feel so anxious about taking a learning risk, failing, and falling. In fact, it might have been quite exciting and revealing!

Why is this instinct to learn so powerful? One reason is that the human brain is the only organ still unfinished at birth. Brain development depends on interaction with our environments; we are thus integrally interconnected with our world. In addition to our genetic code that determines many things about us, our neuro-interactions with the world shape the languages we speak and think with, the social mores, assumptions, values, and beliefs that we embody.

A sense of play

Our drive to explore and discover overcomes falling and making mistakes - especially in play. When children play, we often hear the refrain of “Again! Again!” (in serious parlance – iterative learning through feedback!). [Play based learning research](#) points to the significant role that playing has in human development. There is also some research as well on play in the [adult spheres of creativity and innovation](#).

Children around the world are very good at the following:

- Asking questions ... the endless “Why?” “what if”, “how” ...
- Non-linear, divergent, [philosophical thinking](#)
- Risk-taking – exploring, being curious

- Imaginative thinking – what ifs, maybe, exploring possibilities and impossibilities
- Observing – noticing, giving attention to something, looking behind and beyond
- Persisting and struggling to get something
- Rising skills – falling and getting up both physically and in other ways.
- Embodied learning – engaging with their minds, bodies, all their senses, emotions.
- Seeking and using feedback – they want to know if they're ok

These are all powerful skills for adaptivity, learning how to learn, creation and innovation, and working well with others. Leaders, skilled professionals, and scholars apply these skills a lot! These are the skills we seek to foster in all learners to prepare them for the future.

Legacy schooling often dampens this, transforming learning, assessment, and feedback into judgments and rankings in a binary “good-not good” determination. This shifts many learners into a mindset and emotional space of anxiety about assessments, grades, and feedback. The words "assessments", "assignments", "grading", and "feedback" become anxiety inducing. This is a learned response that suppresses (or erases) our natural drive to learn. We adopt negative narratives without even realizing it:

- Assessments are a judgment of how smart a person is.
- Assessments are filters that select the best students to enter the next level.
- Not everyone is smart enough for the rigor of this discipline.

We should also wonder why more of this happens in schools in low-income districts serving children of color.

Reflect: Lessons from children on learning mindsets

1. Which of the qualities above from children's sense of play do we want to foster in college students, working adults, and community members? Why? Consider inherent self-actualization of individuals as well as the emerging world and how we need to live for a more life-sustaining future.
2. How and why are these qualities suppressed or erased by schooling and other social conditioning?
3. Where are the inequities in the way we assess learning that prevent some learners from developing these qualities? Are these flourishing and learning drives dampened more in some populations than others – why and how?

Task. A Drawing Reflection – Recollections of Assessment

In this task, you will make 2 drawings – each one a visual representation of your response to assessment in different contexts.

1. **Assessment outside of formal schooling.** Think of informal, non-schooling contexts, at any age, where you learned something. How did “assessment” and “feedback” (by someone else or by you in self-assessing) feel in this process? Write a list of words/phrases that describe how you felt.
2. **Assessment within formal schooling.** Think of formal schooling contexts at any age. How did “assessment” and “feedback” (by someone else or yourself) feel as you learned something? Write a list of words/phrases that describe how you felt.

Stick figures are welcome. Your drawings can also be abstract representations of how you felt. Add your images to your Journal.

The drawing task might have revealed some of the embodied and conditioned responses you have to “assessment” depending on whether your experiences were generally positive (empowering, joyful, engaging, fun, deep learning, meaningfulness) or negative (stressful, inducing fear, guilt, self-doubt, imposter syndrome).

Our conditioned responses to assessment

Here are some common associations with the word “Assess”. What can you add?

- **Actions:** Evaluate, judge, measure, rank, compete
- **Forms of Assessment.** Quizzes, exams, final papers, presentations, performance evaluation
- **Measures and Indicators:** Rubrics, points, grades, GPA
- **Processes:** Compete, generally done alone, submit for judging
- **Emotions:** Negative stress, anxiety, trepidation,

Here are positive associations with “assessment”. What can you add?

- **Actions:** observe, gauge, measure
- **Forms of Assessment.** Observation of activities, drafts, rehearsals, conversations
- **Measures and Indicators:** criteria, checklists, rubrics
- **Processes:** Observe, feedback, review, growth, collaborate
- **Emotions:** Anticipation, curiosity, interest, caring, passion

Legacy System: Oppression and inequities in assignments and assessments.

Legacy assignment and assessment formats in many disciplines can be woefully incongruent to students' current contexts and futures. They often center around timed and closed book tests, term papers and presentations. These come from a pre-Information age world, where knowledge was acquired and contained in oneself, where knowledge and skills were stable and changed slowly, and where performance yardsticks in school and beyond were individual expertise and competitive performance. These forms of assessments were especially inequitable and oppressive to marginalized student groups in their one-size-measures-all approach that did not take lived experiences and contexts into consideration.

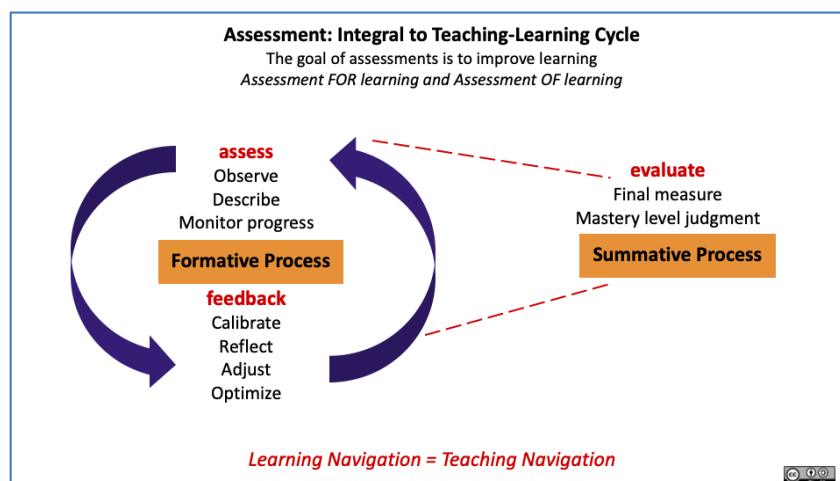
In addition, our students live in and are preparing for entry into information and knowledge-based global systems, where knowledge lives both in oneself and is in dynamic information systems. They work and communicate with multiple modalities and forms of expression. Knowledge and skills are fluid and rapidly evolve; therefore crowdsourcing, collaborating with others, just-in-time learning, and learning how to learn are critical. The legacy system forms of assignments and assessments are incongruent with the needs and contexts of learners preparing to enter this knowledge and information-saturated world.

Problems with legacy system assignments and assessments.

1. **Inaccurate measures of learning.**
 - a. **Emotions.** Think about negative emotional responses to assessments, stress caused by students' circumstances associated with assessment, especially high-stakes assessment. Are we in fact measuring fear and confidence more than learning?
 - b. **Social determinants of learning:** Do assessments in fact measure advantages and barriers to student learning? Do large summative and highly weighted assignments create high risks for some students more than others depending on life contexts? For example, a student who worked hard through the semester might not do so well in the single opportunity of the final or large summative assignment for many contextual reasons. Does the A that a student gets in a timed exam actually measure their being able to afford tutoring, access to quiet study spaces, not having to work? Could the C another student gets be a measure of working two jobs, or being a caregiver, and not having access to study space or tutoring?
2. **Decline in learning.** The structures and processes of legacy assessments and assignments impede learning. Anxiety and learning barriers can lead to disengagement from learning and poor demonstration of learning, or even impact levels of learning.
3. **Lack of relevance.** Many legacy assessments do not adequately prepare learners for their futures. Closed book, timed exams test short-term capacity to recall in an isolated manner, whereas we live and work in a world where for most jobs and life, we find information through multiple resources and collaborate.

Formative Processes in Assessment

The purpose of assessment is to foster learning and growth. We often think of assessment as something that comes after learning. The words ASSESS, EVALUATE, FEEDBACK, are often used interchangeably which mixes up two narratives about assessment - judgments of the person (product-orientation) and summation or gauging of their work at a point in time (process orientation). To clarify, we can frame formative assessment as an intentional process to improve learning, distinct from a final mastery judgment about learning.



Formative Assignments and Assessments	Summative Assignments and Assessments
Allows students to try or practice knowledge or skills. Involves scaffolding that breaks tasks into smaller chunks that build knowledge and skills that students can then bring into a final graded task.	The level to which a student has mastered knowledge and skills at end of unit, course, degree. Judges and categorizes learners.
Involves feedback and revision or re-doing. Feedback can be from teachers, peers, or self-assessment reveals information about learning to help students reflect, calibrate, and adjust to optimize learning.	Feedback for final version does not usually lead to revision.
Not counted in final grade or low weightage.	Counts in final grade. More highly weighted than formative work.
Supports metacognition of learning and development of learning how to learn skills	

Formative assessment is a way to deepen learning. Formative assessment reframes assessment as integral to learning. It is in fact where the learning is activated and stretched. Formative assessment enables us and our students to gauge progress – without judgment - along the way, as part of learning in order to make timely adjustments to deepen, correct, or

stretch learning. This includes tasks that “form” or shape the emerging learning and create opportunities for modification of the work, or even reframing the assignment to align to students’ interests and deepen learning.

Formative Assessment and Inclusive Productive Struggle

Struggle means to make visible effort to be free of restraints or limitations. This process takes on different coloring in learning:

- **Struggle as growth.** Struggle is seen as a positive process: crossing a threshold, stretching beyond current capacity to reach new levels, making effort and focusing on moving beyond current capacity, restraints or limitations. Difficulty and challenge are seen as inherent and natural to the process; struggle involves falling and failing. We often see young children relish struggle, laughing in delight as they try and things go awry. They want to “do it again” until they reach the delight of doing it well. And then ... on to a new struggle.
- **Struggle as anxiety.** Schooling unfortunately teaches many of us to dislike and avoid struggle. Work is seen as a way to measure and judge how clever one is, how capable. This implies that struggle is an indication we are not smart or good enough, that we might be judged by others; and so we learn quickly to judge ourselves negatively when struggle appears. Struggle tells us that failure might be around the corner

Productive struggle. This term was developed in mathematics research to focus on struggle as growth rather than struggle as an indicator of problems in learning.

“Productive struggle is a state of engagement that enables students to work through increasingly challenging problems and new problems they have never seen before.” [Mind Research Institute – ST Math](#)

We don’t need students to calculate quickly in math. We need students who can ask good questions, map out pathways, reason about complex solutions, set up models, and communicate in different forms.” – [Boaler, 2015](#)

These quotes coming from productive struggle research in math education, apply to learning across all subjects. The idea of “productive struggle” is also connected with Carol Dweck’s work with growth mindsets, a mindset or self-theory that sees one’s ability as malleable or unfixed. Productive struggle presents struggle as a positive indicator that a learner is stretching beyond what they know and reaching toward mastery of something new, learning and growth are happening. It connects with learning as a creative adaptive process that engages complex domain thinking. And therefore, it shifts attitudes to seeing struggle as a positive, growth-oriented process. If learners – and teachers - can embrace productive struggle, they are less likely to be limited by a fixed sense of their abilities and to persist in a task.

Key Elements of Inclusive Productive Struggle

Productive struggle can be used to amplify inclusion and equity-minded teaching design:

Clear and meaningful goals. Learners should know specifically what they are trying to achieve (learning destinations) and see these goals as relevant and meaningful to them.

Scaffolding to balance levels of challenge and ability. The learner is balanced between their level of ability and challenge. Too high or an unrealistic challenge defeats motivation while unchallenging tasks can evoke boredom and disengagement. Work should be challenging, with sufficient scaffolding to ensure the learner is stretching yet sees the task as achievable rather than overwhelming. This means providing sufficient flexibility to meet learners where they are.

Safe and transparent process. Since many students come to us having been conditioned to fear failure, we must create an explicit invitation to engage in the process with no fear of failure – for example no-grades given for drafts, allowing multiple attempts ungraded etc. as well as creating opportunities for autonomy, choice, and peer collaboration to solve problems. This creates a learning context of sharing, support, and effort. Mistakes are clearly signaled to be part of the process and points of useful information rather than indicators of ability. Feedback is purely to provide direction for continuing and improving the work with time for revision and development, i.e., it is formative.

Benefits of Formative Assessment and Productive Struggle

Supports Achieving Course Outcomes - formative assessment that supports productive struggle leads to better final work and higher achievement.

Formative Processes with Productive Struggle Supports Equity-Minded Teaching

1. We make no assumptions about readiness or unreadiness, but offer flexible scaffolding to all learners to deepen learning, develop positive, growth-oriented learner identities, and set up the best pathways for strong outcomes and achievement.
 -
2. We build learner self-awareness, metacognition, and learning how to learn skills. This helps learners to move toward positive and internal self-regulation and autonomy, greater self-efficacy, and a more intrinsic interest in the subject.
3. We create safety for productive, meaningful struggle toward excellence in learning by stretching learning through feedback and self-assessment to build confidence and competence. When done with support and collaboratively with peers, learners also develop learning habits of seeking feedback. This sets up conditions to develop a growth mindset as they develop knowledge and skills.

Integrating Formative Processes.

FORMATIVE PROCESSES are any tasks that “form” or shape the learning and create opportunities for:

- Feedback from teachers, peers, and self-assessment, with time and opportunity for revision and redoing.
- Practice before a graded attempt.
- Scaffolding or chunking into smaller elements that build knowledge and skills that students will then bring into a graded task.

Formative processes are SAFE, ITERATIVE, SCAFFOLDED, COLLABORATIVE

1. **SAFE:** Formative assessments are low-stakes work - either ungraded or graded with low points. This makes them safe-fail processes which lower anxiety and encourages trying, taking learning risks, and engaging in productive struggle.
2. **ITERATIVE:** There are multiple points at which students can use feedback to revise work to improve and stretch. This makes them more willing to focus on effort to improve for a good final grade, which in turn fosters a growth mindset.
 - a. **Multiple sources of feedback.** Feedback can be from teacher, peers, as well as self-assessment using a clear set of criteria in a rubric or checklist.
 - b. **Time** is an important consideration to ensure that students are able to use formative feedback to stretch and improve their work.
 - c. We normalize “errors” and “failing” as a natural and expected part of learning.
3. **SCAFFOLDED:** Formative assessment guides learners in doing the work while gauging progress and adjusting along the way. Informal formative assessment – quick activities to gauge learning, check-ins, observations - are in themselves scaffolds that support learners in the flow of knowledge and skills development. Formative assessment is part of [Transparent Assignment Design](#) that presents assignments comprehensively – what it is, why we’re doing it, how to do it, and checklists or rubrics to guide the process.
 - a. **Rubrics** function as guiding tools to help students understand the final destination or outcomes, and plan their work to meet the requirements. More than just a grading tool, rubrics help develop metacognition of learning and learning confidence and autonomy.
4. **COLLABORATIVE:** Learning is empowered in co-creative, dialogic exchange between teacher and learner, as well as between students. Apart from teacher feedback, formative assessment includes peer-review where learners use the rubric and guiding questions to give each other feedback. In fact, engaging in peer review, helps students build metacognition of the assignment and subject matter and their own learning.

Based on the above, the assessment design of a course could have the following structures.

1. Formative work with summative assessment at the end of course.
 - a. This design is a series of formative assignments throughout the semester that scaffold learning. This is then applied in final projects or summative assignments.
 - b. This works when all the topics that are learned in the are connected and can be assessed together at the end of the learning arc, which is the end of the course.
 - c. This design ensures that students have opportunities to engage with each element of the larger summative assignment to deepen knowledge as they go. They are also then going to bring their best work to synthesize into their larger summative assignment.
 - d. For example, students work on parts of a larger summative assignment in a series of small formative assignments through the semester – outlines, annotated bibliographies, drafts of parts of a paper or presentation. These come together in the final paper or presentation at the end of semester. Or students work on short summary papers and quizzes in a formative process with feedback in preparing for a final exam.
2. Formative work toward summative assessment at the end of a topic.
 - a. This design works when the course contains a series of topics that can be assessed separately, i.e. when the knowledge of one unit is not dependent on knowledge and skills from a previous unit. For example, in a survey course covering 5 different genres of literature or 5 key theories.
 - b. The assessment design could be a series of formative assignments that culminate in a small summative assessment for that topic. This is repeated for each of the course topics.
 - c. For example, in each topic, students can do formative quizzes or problem sets with peers, short pieces of writing with feedback, before a summative topical assessment. Each summative topical assessment is added to count toward the final course grade rather than averaged. This helps learners master and complete each topic in turn without penalty because of issues in other topics.

Formative assessment design enables productive struggle to happen without any threat to their final product, especially if the formative work is not heavily weighted (or not counted) in the final grade. This allows students safe-fail space and time for growth before they are actually summatively assessed. Formative design also facilitates flexibility for a diverse group of students to ensure space and time to bring their best selves to the work, rather than a one-off design that would impose barriers for many students.

Classroom Assessment Techniques (CATs)

CATs are small, ungraded activities we do in class that create quick glimpses into learning and give you and your students feedback as they are learning. In our Active Learning framework – CATs are part of checking for understanding.

CATs are useful as we teach because they give us on-going learning feedback and moves learning and teaching into an adaptive process: teaching and learning – checking-in and probing – and adjusting as we go. When done anonymously – polls, Jamboard etc. – it creates a safe space for students to raise questions that help their learning.

Some examples are:

- One-minute papers – after a lecture chunk, asking students to briefly answer a question to check understanding and discover muddy areas to clarify.
- Exit tickets – quick questions or a poll at the end of a unit or class session.
- Induction questions or reflections before starting a topic of unit to gauge student's prior knowledge or lived experience connections and assumptions about the topic.

Explore: [Classroom Assessment Techniques](#). This is a great overview by Vanderbilt University's Center for Teaching with examples, and why and how to use CATs

Designing Assessments: Centering Students with Flexibility and Choice

Flexibility. Rethink strict deadlines and assignment requirements.

- “Stretch Deadlines” – allowing students a range of time in which they can submit an assignment. For example, the preferred deadline is Wednesday, but they have till Saturday evening to turn it in. This broadly supports different student situations.
- Remove rigid penalties for late work. Penalties for late work punish students who are likely to be already challenged by their life-study circumstances. Doing this leads to grades that measure privilege and barriers more than learning. By offering flexibility, we allow students to work with us to self-manage in ways that optimize their learning.

Choice. With some assignments, it is possible to create different options for students?

- Choosing from a number of topics or problem sets. Students select from a range of problem sets or topic areas and formats, as well as from a range of difficulty. This allows students to begin where they are and build themselves up through different assignments. The teacher helps in this process by guiding students to choose items in a progression that will stretch them.
- Set up different assignments due at different times of the semester. Students choose a set number of assignments rather than all of them. This allows them to select assignments best suited to their circumstances and other work they might have due. For

the teacher, this might also spread a grading load as each assignment might be selected by just some students.

- Allow students to create their assignments. Give guiding parameters and let students create their own questions and formats. For example, rather than set a quiz or short answer test, ask students to submit questions with worked out answers that you use in your exams. Instead of setting writing prompts, ask students to set writing prompts or project ideas that become the set from which the class chooses.

Reflect: Examine the impact of legacy assessments

- Do you need large summative high stakes assignments? Can you build a series of formative assignments allowing revision for improvement up to the end of the course?
- Consider the inequities that come from summative assignments that are highly weighted. How might this inaccurately reflect learning? For example, a student who has worked hard and learned a lot might not do so well in the single opportunity of the final or large summative assignment for many contextual reasons. While in the end summative assignments judge levels of mastery, how can you build in some time for re-doing to improve their final grades?

Resource: Ideas for Multiple Modalities Integration in Assignments

Use this table of different modalities and forms in creating assignments, either as final assignment format or as processes to develop ideas and “rehearse” learning. Planning a few different types of assignments, assessments, and activities helps you differentiate the teaching-learning process to cater to different learner’s interests and abilities.

Modality	Examples of text types and learning processes
Reading Viewing	WHAT: advertisements (print, video), books (fiction, non-fiction), blogs, book reviews, extracts, film/video (movies, documentaries, news etc.), interview transcripts, journal articles (conceptual and empirical), magazines, newspapers (print and online), play scripts, social media feeds, reports, websites, etc. SENSE-MAKING & ORGANIZING INFORMATION: Annotate, take notes, sort and categorize RESPONDING TO Reading: Summarize, critique/review, trace trends and patterns, compare and contrast, connect within and across texts, create visual representation or model of ideas from reading items (see visual category below), respond collaboratively (wikis, discussion forums, blogs), quick-write reviews
Writing	academic paper, annotated bibliographies, blog post, collaborative writing (paper/wikis), creative response, critique, essay, group writing, literature reviews, reflection journals (guided, open, solo, group, class), op-ed, posters, report, response paper, critique, summary, twitter responses, translating works
Listening & Speaking	debates (formal, informal), discussion (whole class, groups, on-line), following a set of verbal instructions, interviewing, verbal one-minute summaries, panel discussions, presentations (solo, group), role-play, readers' theatre
Outside Class	community involvement/service projects (group or solo), group work meetings, observations and note-taking
Collaboration	Discussion forums, group projects, partner projects, whole class collaboration, wikis.
Visual, AV Presentation	3D model or representation, collage, drawing, documentary, flow charts, flyers, film clip, photo essay, podcast, presentation poster, slideshow, storyboard, scrapbook, wall mural
Tests/Exams	fill in the blanks, lab tests, multiple choice, open book exam, open web exam, performance or hands-on tests, project presentation, quizzes, short answer, short essay, student constructed tests, take home exams
Portfolios (Individual Or Group)	Process based work – drafts are submitted for feedback (instructor/peer), final draft submitted for grading, all work kept in a portfolio (paper or electronic), whole portfolio submitted at end of semester together with a reflection and self-assessment piece
Performative	Performance art, dance, musical theatre, mime, human statues, physically acting out concepts, skits and dialogues representing concepts and key ideas, instructor performs - student responds (e.g., paraphrases, adds to)
Research Projects	Research literature based, community-connected research, quantitative, narrative-based, ethnographic, visual research, curation...

Resource: Types of Formative Assessment

1. **QUIZZES & TESTS** – open book, multiple attempt quizzes, low grade weightage with highest grade taken at the end, or not graded, Practice test with feedback before actual test. Practice quizzes and tests in take-home format – bring answers to class to check and discuss.
2. **PEER REVIEW:** Guided peer review using a checklist or rubric in pairs or small groups, followed by class discussion. These guided reviews can be done in students' own time asynchronously and then brought to class for discussion.
3. **SELF REVIEW.** Students use a checklist to review and annotate work in a self-review to submit together with their first draft, or bring to class for discussion in pairs, small groups, or whole class format.
4. **TEACHER FEEDBACK:** Summary feedback and action items in response to reading all or part of students' work. This can be given asynchronously or in person – in summary to the whole class, small groups, or in 1-1 meetings.
5. **CREATION PROCESS IN STAGES.** Chunking or scaffolding assignments to incorporate stages and time for drafting-feedback-revision processes. Each part then becomes a focused learning chunk that receives formative feedback that deepens learning and supports success in upcoming stages.
6. **FORMATIVE SCAFFOLDING.** Having students work on problems in pairs/groups, discussing challenging points before taking on solo problem-solving tasks; non-graded or low-weighted problem sets for practice with feedback with time for revision and practice before final graded assignment.
7. **LEARNING ReflectiONS** – Ask students to reflect by responding to learning questions about an assignment (What did you enjoy doing? What was challenging (can be the same as what you enjoyed doing)? How did you address the challenge? What did you learn in doing this task?) Learning reflections support the development of learning metacognition and learning how to learn skills (Fink's taxonomy).
8. **IN-THE-MOMENT CHECKS** as part of active learning processes: One Minute Papers, polls, short quizzes, applying learning to build something, creating questions, analyzing scenarios, reflections on learning, exit tickets etc.

Transparent Assignment Design

The purpose of assessment is to foster learning and growth.

Transparent assignment design walks the talk of inclusivity and equity-minded teaching. In transparent design, assignments are written so students know WHY they are doing it (relevance and meaningfulness) and HOW to do it (clarity and scaffolding).

Transparent design uses formative processes to guide students while developing learning metacognition, self-regulation, and learning how to learn skills as they build knowledge.

The Transparency in Learning and Teaching in Higher Education project (TILT Higher Ed) is an award-winning national educational development and research project to help faculty implement a transparent teaching framework that promotes college students' success. It began at the University of Illinois, Urbana-Champaign in 2009-2010 and has involved over twenty-five thousand students in hundreds of courses at more than forty institutions in seven countries. Now housed at Brandeis University, the project invites participants from all institutions of higher education in the US and abroad. In 2014-2015, the Transparency Project began partnering with the Association of American Colleges and Universities (AAC&U) to focus on advancing underserved students' success in higher education.

Watch [this video on Transparent Design](#) [7:43 mins]

Professor Mary Ann Winkelmes gives an overview of a study on transparent assessment design and how it supports inclusive teaching toward student success. The study was conducted in 2014-2016 by AAC&U. [Link a set of slides on this study](#)

Read: [Ridiculously simple and very successful](#). (2021). [Approx. 6 minute read]

A case study on transparent assignment design on the AAC&U website. "Transparent assignments help to take some of the guesswork out and demystify the curriculum ... This is especially important for students who may feel more insecure about whether they belong in college." – Jodi Fisler, senior associate for assessment policy and analysis for the State Council for Higher Education in Virginia (SCHEV.)

Read: Kasey Christopher 2018 - Biology professor. Blogpost [Approx. 2 pages]: [What are we doing and why?](#) Transparent Design benefits faculty and students alike.

"Briefly, transparent assignments are constructed with three key components: *purpose*, *task*, and *criteria for success*. This lies in stark contrast with the more traditional approach of providing only the task, perhaps with a rubric attached for higher-stakes assignments. ... I was shocked at the results; by simply mentioning that learning to make observations and hypotheses was part of the key goal, and providing a successful sample response, I avoided the vast majority of confused student questions. Concurrently, the depth of thought that students put into their hypotheses increased noticeably."

Explore: [Example of transparent assignment](#) - Example of a more and less transparent assignment

Resource: How to Use Transparent Assignment Design

These design questions help you think about inclusion and excellence in designing assignments. The questions engage you in Design Thinking to understand the learners (Empathize) and the contexts of learning (Define) before creating your assignment (Ideate). This practice is essential to design assignments that will support learning and remove barriers for a diversity of learners.

Task and Assignment Process:

1. What is the final product?
2. What is the process or key steps in creating the final product?
3. Does it require specialized knowledge and when will I be teaching this?
4. Do they have choices rather than a single option?
5. Can they modify the assignment to connect to an interest?
6. Will they work alone, in pairs, in groups? Will they collaborate in some parts of the assignment and do solo work in other parts?
7. How much time will it take? What is the time needed for each stage?
8. Will they have time in class for some parts of the work?
9. How many drafts are reasonable? And what are the deadlines for these so that I can give feedback in a timely manner so they can make revisions?

Purpose/Meaningfulness:

1. What skills are practiced, and knowledge is gained?
2. Why are they doing it? Is it worth doing? How does it connect with students' interests?
3. How does the assignment connect with previous or future assignments?
4. How will this help in and beyond the course?
5. Who is the audience - just the teacher, teacher and peers, an external audience? The more authentic the audience, the more meaningful the task becomes. For example, rather than write a paper for no real audience (the teacher being the only audience), they could write the same paper but as a policy brief for a larger world context, as a journal article with a specific academic audience, an op-ed for a specific publication whose audience has certain interests etc.

Criteria for Success.

1. What does excellence look like? This is the basis for developing a useful rubric.
2. How can students self-evaluate?
3. Will students have rubrics to help them plan and do their work rather than just at the end for grading?
4. Will there be self- and peer-review and when?

Resource: Template or Structure for Transparent Assignment Design

Use this as a template to create assignment-handouts

Goal or Task: What is this assignment? Be specific. For example: In this assignment, we will analyze 2 contrasting cases of classroom engagement and suggest interventions.

Purpose: Why is this assignment important? What outcomes are addressed in doing this assignment - content knowledge mastery, skills development? How is this useful to students within and beyond the course?

Format and submission: Provide specific instructions for any formatting requirements and submission, for example number of pages, mode of submission, where to submit.

Deadlines: Provide all interim deadlines and final deadlines and any protocols and policies about missing deadlines.

Instructions and Resources: Provide critical scaffolding steps to guide students in working through the processes needed to do the assignment. If there are important resources provide information and links to them where possible.

Criteria for Success: provide a checklist of criteria for success that will help students plan and produce the work to meet the standards you are using for grading. It is best not to attach points to these and present that guidelines for success so that it's a learning rather than a scoring tool.

Reflect

1. What are typical assessments and assignments like in your discipline? What forms and modalities are used beyond writing and presentations?
2. To what extent have you experience formative learning and assessment processes in your undergraduate experience? If you did how did they work for you? If you did not experience formative learning and experience, think about how they might have helped you?
3. How would you transform assessments and assignments into positive and productive processes of growth for your students? Think about the topics covered so from starting from fostering Classroom Community to create a sense of belonging and mattering, Active Learning, UDL and Multiliteracies. What ideas from those topic areas can you use to create assignments that are meaningful, that engage learners actively, and empower them to co-create and use multiple modalities for expression?
4. In developing your teaching philosophy and diversity statement, what are some principles that you will implement in designing assignments and assessments, and what values inform this approach? *This connects with question 4 in your TPS worksheet.*

Further Resources

Productive Struggle

Betts, P., & Rosenberg, S. (2016). Making sense of problem solving and productive struggle. *Phi Delta-Kappan*, 53(2) 26–31.

Dweck, C. S. (2008). *Mindset: The new psychology of success*. New York, NY: Ballantine Books.

Eggleton, P. J., & Moldavan, C. C. (2001). The value of mistakes. *Mathematics Teaching in the Middle School*, 7(1), 42-47. [Link to Article](#)

Kapur, M. (2016). Examining productive failure, productive success, unproductive failure, and unproductive success in learning. *Educational Psychologist*, 51(2), 289-299.

Murdoch, D., English, A. R., Hintz, A., & Tyson, K. (2020). Feeling heard: Inclusive education, transformative learning, and productive struggle. *Educational Theory*, 70(5), 653–679. [Link to Article](#)

Good analysis of concept of productive struggle and discussion of conditions for cultivating educational relationships that support students to feel heard.

Transparent Assignment Design

Christopher, K. (2018). What are we doing and why? Transparent assignment design benefits students and faculty alike. *The Flourishing academic: A Blog for teacher-scholars*. Duquesne University Center for Teaching Excellence. [Link to Article](#).

Leuzinger, R., & Grallo, J. (2019). Reaching first-generation and underrepresented students through transparent assignment design (Vol. 11, p. 21). California State University, Monterey Bay. [Link to article](#)

Willingham-McLain, L. (2017). Just a TAD: Transparent assignment design. *The Flourishing academic: A Blog for teacher-scholars*. Duquesne University Center for Teaching Excellence. [Link to Article](#).

Winkelmes, M., et al. (2016). A teaching intervention that increases underserved college students' success. *AAC&U Peer Review*. 18 (1/2). [Link to Article](#)

Yong, D. (2017) How transparency improves learning. *Teaching Tidbits* (Mathematical Association of America blog). [Link to Article](#)

Authentic Assessments

Martinez, M., O'Brien, M., Roberts, K., & Whyte, D. (2018). Critical pedagogy and assessment in higher education: The ideal of “authenticity” in learning. *Active Learning in Higher Education*, 19, 9–21.

Villarroel, V., Boud, D., Bloxham, S., Bruna, D., & Bruna, C. (2020) Using principles of authentic assessment to redesign written examinations and tests, *Innovations in Education and Teaching International*, 57(1), 38-49

Angelo T. A. Cross, P. K. (1993). *Classroom Assessment Techniques: A handbook for college teachers*. (2nd ed.). Jossey Bass.

This book has 50 CATs that the authors have organized in a convenient index. A great book to acquire for your teaching library: This book has 50 CATS.

[Harwood, E. M. \(1999\).](#) Student perceptions of the effects of classroom assessment techniques (CATs). *Journal of Accounting Education*, 20.

Chapter 12 - Assignments and Assessments 2. Feedback and Grading

In this chapter, we continue exploring assignments and assessments focusing on feedback as part of formative process, and grading issues and methods.

Our goal is to reframe feedback as a positive, growth-oriented process as part of inclusive and equity-minded productive struggle. Here is a metaphor for feedback – a magnifying glass that enables us to pause and take a close look at our work. Feedback helps us to magnify and focus on areas of strength that we can keep building and stretch, as well as errors or areas we need to sharpen and develop. What other metaphors come to mind?



[Photo Credit](#)

Recall and Reflect: Before reading on, do these activities to activate your lived experiences of feedback.

1. Write a single sentence definition of “feedback”.
2. How does it feel when you realize you will be getting feedback for something? Consider how it felt through your schooling, in working life, as well as in personal life.
3. Do you have any of the following internal responses and how do they differ in different contexts? Who or what situations make you feel these 2 different responses?
 - a. Brace for feedback – anxious or worried what might be wrong
 - b. Relish and anticipation – look forward to hearing what’s working and what’s not.
4. What do you think made the difference for you in experiencing these different internal responses to feedback?

Exploring Feedback

Here are some words associated with “Feedback”. Notice that these are all value-neutral, but when associated with “feedback”, many take on positive or negative connotations.

NOUN: Data, Information, Description, Observation.

VERB: Assess, Analyze, Comment, Critique, Criticize, Correct, Describe, Evaluate, Explore, Guide, Gauge, Inform, Observe, Probe, React, Respond.

The Outcomes of Feedback: Adjust, Adapt, Change, Discover, Focus, Modify, Navigate, Reframe, Respond, Revise, Sharpen, Stretch

“The most powerful single moderator that enhances achievement is feedback. The most simple prescription for improving education must be dollops of feedback. This does not mean using many tests and providing over-prescriptive directions. It means providing information about how and why the student understands and misunderstands, and what directions the student must take to improve”. John Hattie (1999), [Influences on Student Learning](#)

Vulnerability: Fear of Feedback – Fear of Failure – Fear in Learning

Learning is a creative, adaptive process – moving from not knowing something to knowing through a process of building knowledge and skills with others. This engages Complex domain thinking: the ability to embrace the dissonance of not knowing and feeling vulnerable, the ability to engage in productive struggle to explore, try, fail, get feedback to navigate through the process and build knowledge.

One of the most vulnerable spaces in education is making mistakes and feedback

Think about the meaning of these words and phrases in your lived experiences both in school and outside school in personal and professional life.

- Failure
- Mistakes
- Errors
- Did not know something

Watch: [Fear of Failure](#). [3:02 mins]

Brene Brown speaks of the connection between fear of failure and shame. As you watch, think of how this illuminates schooling and assessments, and especially our responses to feedback.

The Other Side of Vulnerability: Courage in Teaching and Learning

Vulnerability does not have to be a negative emotional space.

In Complex domain thinking – and creative adaptive work – positive vulnerability supports courage in adaptive learning behavior. How is positive vulnerability connected to these words?

- Open
- Curious
- Exploring

Here are 2 quotes from Brene Brown linking vulnerability to courage. What elements of Complex space thinking and learning emerge for you from these quotes?

“The courage to be vulnerable is not about winning or losing, it’s about the courage to show up when you can’t predict or control the outcome.” – Brené Brown. [Link to webpage](#)

“If you cannot manage discomfort, that sends you barreling into perfectionism, excuse making, blame, rationalizing, fixing it, cleaning it up without taking away the key learnings from a failure or a disappointment, or even a heartbreak.” Brene Brown. [Link to webpage](#)

Read: Andrew J. Martin & Herbert W. Marsh (2003) Fear of failure: Friend or foe?, *Australian Psychologist*, 38(1), 31-38. [6 pages] [Link to Article.](#)

Reflect

1. How does vulnerability connect with productive struggle toward learning?
2. Why might marginalized and underrepresented students have more negative vulnerability and fear of failure?
3. How does working with inclusive process-based approaches to assignments and assessments support positive vulnerability and learning?

Feedback for Equity-Minded Teaching

Feedback is a under-estimated tool for inclusion and equity-work.

Many students come into college out of punitive, marginalizing systems where a large narrative – maybe their single story - was that they were not important and that learning and soaring in learning was not for them. In addition, legacy schooling creates a transactional approach to school; do the work in exchange for the grade. Learning is not always part of this.

We can help our students transgress, transcend, and transform this narrative to create a counter-narrative in which they have agency to become strong learners who can learn for life.

Feedback need not only be about improving the work at hand to get the grade. It can do so much more. Through effective, mindful feedback (and effective, empowering assignment

design), we can support all students to engage in productive struggle by reframing learning as a process of growth that is designed for all rather than a competitive achievement race that those with privilege will win. In addition, students can develop self-awareness of their learning patterns, build their learner identity and self-efficacy as learners, and especially develop learning how to learn skills.

These are all powerful capacities for future life and work no matter what subject you are teaching.

Using Feedback to Support Inclusive Productive Struggle

Feedback can be broken down into 2 parts – observing or focusing on something and then constructive information to support moving the work forward. The following principles and strategies help us work inclusively with our students to support learning.

Focused and descriptive. The first role of feedback is to create focus and awareness, to call attention to something. Therefore, it is descriptive. *This argument needs evidence, the sources are unconnected to the text, your foot placement makes you unbalanced, you have made 3 contributions to your group.*

Non-judgmental. Make feedback work-focused not person-focused, with no assumptions about the student. Descriptive work-focused language allows the student to focus on the work without feeling blamed. It also sets the tone for providing action steps, and to continue conversations with the student.

Reflective and/or question finding. Connect with your own ideas and perspectives. This kind of feedback can help you pose questions to deepen thinking and synthesis. It invites learning. This helps students feel that you are not merely “checking” their work, but that you are engaging intellectually and meaningfully with them. For example, *This makes me think of the last unit we covered on historical amnesia. Do you think what you say here can bring that in?; I have not thought of looking at trauma this way – I think you’re on to something. Do you think this applies to girls as well?* Notice these examples invite the student into a co-creative process of revision. Rather than being told “do this” – the instructor is asking them to consider an idea, signaling agency and supporting the development of the students’ learner identity and self-efficacy.

Both strengths and areas to fix. Focus on what’s working as well as what needs fixing. Understanding what they are good at helps students to intentionally do that again and stretch that ability. It also signals to students that feedback is not just a criticism of all the things that are wrong. *Great use of evidence from peer-reviewed articles, You’ve made productive contributions to this group project, the argument logically connects commentary to the assertion, the volume worked well to support the ensemble.*

Directions for growth. Feedback also includes providing direction and resources that help students with learning and moving their work forward.

- **Action steps.** Give students a few action steps to address the issues or amplify the strengths you observed. If you are able, point to or provide resources. *Bring in evidence from peer-reviewed articles. See this link for resources. Do the exercises in your book to increase voice volume, Say how and why in your commentary so that it connects to your assertion.*
- **Institutional resources.** Your students – and you – have allies to improve work that are often missed. Some students might not know how these resources work for them, or not even know they exist (even though you might have them in your syllabus and mentioned them before). Bringing them in now engages just-in-time learning and awareness. For example, part of your feedback could be to point to a helpful resource like librarians, writing centers, or technology centers. Receiving these as feedback will help some students seek them out to improve their work.

Context-seeking adjustments. (Design Thinking – Empathize and Define)

No matter how carefully descriptive our feedback is, students are likely to have an internal narrative that judges themselves – *I messed up again, I'll never get this*. We can surface and address these hidden narratives of shame, self-blame, and guilt. As part of this, we can seek to understand the students' contexts, which can lead to adjustments that allow the student to move forward more productively and with deeper learning. Examples:

- Adjust the assignment rhythm to be better connected to student's life and interest. For example, working with the student to align the work with other deadlines, job and life roles for the semester, rather than just going extensions piecemeal for each part. Creating a manageable and coherent calendar is more efficient and strategic.
- Reframe the assignment to work better with students' strengths and limitations. A writing assignment is generally not a test of grammar (unless that is the assignment), but about ideas and arguments. Would it work better for the student to do a video presentation instead? Or create an infographic? Use your knowledge of UDL and multiliteracies to work creatively while still meeting your learning goals.

Some of this can be preempted by addressing these possibilities as you design assignments and assessments and launch your course.

- Create assignment options so students can choose a format that works better with their interests, skills, and time. This is more inclusive in avoiding a one-size-fits-all approach that set-up barriers for many students.
- Make time early on to do a calendar check with everyone about course deadlines and deliverables. Explicitly invite students to discuss a plan with you (or a TA) to organize themselves for the semester.

Self-assessment. Use your rubrics for self -assessment rather than just for grading. Give them out as part of your Transparent Assignment Design and work proactively with them:

1. **Use the rubric.** Before handing in a draft, ask students to indicate where in their assignment they are responding to criteria in the rubric by highlighting or adding marginal notes. This helps them see their strengths and gaps themselves rather than passively wait to be told by the teacher. One result of this approach is that they will be able to identify and address some gaps, thus realizing these are errors of process rather than gaps in knowledge. They will also find things they are not able to address so any help they get on that will be “stickier”. You can integrate this with peer-review so students can help each other out. This also makes your feedback process more focused and effective ... and usually less onerous and time consuming.
2. **Self-assessment reflection.** Ask students do a short self-assessment quiz as part of handing in a draft. For the student, this pause helps them to see themselves as a learner and the work as something in progress. For the teacher, this information can reveal patterns of areas you might want to address in your design and teaching.
 - a. What were your strengths in this draft?
 - b. What challenged you?
 - c. What do you think you need to do to sharpen this work?

Peer Review (see Chapter 10 for details). Working collaboratively in pairs or small groups builds metacognition of the material and the work process. This also signals that the emphasis is on learning. It also helps take away the sense of individual competition in the class.

There is no failure; there is only practice. - Resmaa Menakem. June 2020. On Being. With Krista Tippett (podcast)

“In a growth mindset, challenges are exciting rather than threatening. So rather than thinking, oh, I’m going to reveal my weaknesses, you say, wow, here’s a chance to grow.”— Carol Dweck

Grading

Who loves grading? The students certainly don't. And many teachers agree with them!

Grading – and grading in specific ways are part of the legacy system. It's a hard area to transform because many of us think of grading using Clear and Complicated space thinking; "we've always done it this way", this is what the experienced teachers do", if we do not grade this way, we lose rigor", "students won't do the work unless it is graded".

To what extent do you think you share some of these assumptions? And are they all correct?

We can question this legacy paradigm of assessment and grading.

1. Do students really learn because we grade them?
2. Do we lose learning rigor if we use different methods of assessment?

We can frame these questions with an equity and justice lens to ask – how do we compromise ethical rigor in different methods of grading? How can we use a grading process as part of formative, equity-minded learning?

Read: [What's wrong with school grading this year? The same thing that is wrong every year.](#)
[approx. 6 mins].

The turbulence of the COVID pandemic, surfaced many underlying issues in assessment in learning in the legacy system that have been long ignored.

Read: [Taking the stress out of grading.](#) ACSD, 78(1). 2020.

Joe Feldman 2020. [approx. 13 mins]

In this article, Joe Feldman covers 4 outdated grading practices: Using a 0-100 scale, Curving Grades, Grading Homework, and Grading Participation. He then offers ideas and strategies on Retakes, Lowering Stress, and Increasing Equity.

Reflect: Here are the reflection questions Feldman poses at the end of the post (to which we have added one more). Think about this in terms of your own classes (if you have taught/are currently teaching) or in terms of your learner experiences as an undergraduate.

1. Which of these legacy grading practices are most prevalent in your discipline?
2. How have you seen grades negatively impact students' mental health?
3. Which of these four "outdated" grading practices could you commit to ending? What's the first step to do so?
4. How could you make retakes a consistent part of your school or classroom's grading culture?

Standards Based Grading (SBG) – also known as Mastery Based Grading.

SBG focuses on learning and evaluates how students are progressing toward specific outcomes or learning goals. The goal is to support productive struggle by creating a visible pathway and documentation of students' learning and growth. When integrated in a formative process of authentic assignments with a learning community, this is a powerful method to engage in meaningful growth-focused assessment.

SBG is an inclusive and equitable approach. Students enter college with different levels of cultural capital in approaching academic work, understanding the discourse styles of their disciplines, in how they were prepared with college-level skills. Some will sail through assignments and others will find assignments opaque and confusing and the difference comes from social, contextual factors rather than intelligence or learning capacity.

1. **Transparency, clarity, proactive work.** Standards based grading takes the mystery out of the learning process and help students plan their work proactively. It becomes the teacher's responsibility to communicate the standards clearly.
 - a. They will know from the start what the goals are for the assignment and its specific criteria and deliverables.
 - b. Well-written standards eliminate the issue of some students not really understanding expectations, e.g., "a good argument", "integrating sources", or not realizing that they needed to use a specific academic style etc.
 - c. This also enables you to check-in with students to ensure they understand the criteria/standards, and to modify them as needed to meet students where they are while stretching them to meet the goals.
2. **Focus on formative feedback and learning.** Mastery-goals or standards communicate to students that they are in a process to build toward the goals. Combining standards-based grading with formative assessment makes this clearer. All assessment therefore is designed to give them feedback to reach the goals.
3. **Elimination of classroom management measures.** Standards-based grading helps teachers really think about assessment of learning, rather than muddy this with classroom management – attendance, late-work, and participation grading. The latter are not part of making learning visible.

•

Read: [Standards based grading. Definition, benefits, and comparison with traditional grading.](#)

(2021) This web article summarizes the benefits of SBG compared to traditional grading. As you read, pay attention to how SBG has potential as a tool to make assessment inclusive and equitable. What resonates most with you as a learner and in thinking about how you might approach grading in your courses?

Ungrading. A radical transformation of assessment for learning

"Ungrading" means raising an eyebrow at grades as a systemic practice, distinct from simply "not grading." The word is a present participle, an ongoing process, not a static set of practices – Jesse Stommel.

Ungrading – or going gradeless – is an approach to assessment that does not include grades. Instead, students get formative feedback that supports growth. The feedback is therefore purposeful and supports productive struggle. Students can take risks, fail, and improve.

“When teachers give feedback together with a grade, the students see the feedback as justification for the grade, but if there is feedback without a grade, then students can see the feedback for its own sake and act on it” (Blum et al. 2020. p. 96).

In addition, this approach brings in flexibility and opportunity to co-create with students to develop authentic, meaningful assignments. We are better able to work inclusively and ensure equity in learning. As long as students are working toward the course goals, they are not locked into all doing the exact same assignment using the same modalities. Standardization of work is removed, while integrating standards of excellence with diverse students’ skills, strengths, and circumstances.

Read: [Ungrading](#). Baylor University. Academy for Teaching and Learning. [approx. 7 mins]

This is a comprehensive overview of ungrading – why we grade, and examples of different ungrading methods and some good references.

Read: [Jesse Stommel](#) is an educator and advocate for the process of ungrading – a movement gaining ground among educators seeking more equitable and learning-oriented ways to assess student work. In this blog post, he provides links to a bunch of articles on grading.

- **Please read this one:** [The Case Against Grading](#) – Alfie Kohn 2011. [approx. 15 mins]
Alfie Kohn has done years of research on the interaction of grading and learning and has been a strong advocate to change how we assess learning.
- **Select and read any one or two of the other articles that are linked on the webpage.**
[Link to webpage](#)

Reflect: How do ideas from ungrading resonate with you? What values and principles from your developing teaching philosophy and diversity statement connect with elements of ungrading that you can bring into your practice?

The Rubric as a Compass for Success

What is a rubric? A common understanding of "rubric" (another opaque word) is that it is used in grading. But rubrics can do so much more. Rubrics are:

- **A transparent list** of skills and knowledge that students aim to develop as they journey through a course or assignment
- **A compass** we can use to pause and check if we are on track or need to adjust the work. The rubric as compass can be used by the teacher, a peer, or by the learner themselves to generate feedback that helps them adjust and move ahead effectively.
- **A final gauge** of how we have completed the journey. If the rubric is in the hands of students all along and they have used it well as they journeyed, they will arrive in good shape at the end of the journey. They should all do well.

Reflect Think about your experiences with rubrics as a teacher and/or a student. Here are some questions to help you unpack and examine your perspectives on rubrics.

1. Which kind of rubric is typically used in your discipline ... if at all?
2. In your undergraduate studies, did you receive a rubric when an assignment was given out? How did this help you?
3. Did you have any opportunity to use a rubric as a guide or checklist to help in doing an assignment?
4. How is giving students a rubric as part of an assignment inclusive and ethical?
5. How do rubrics help students develop metacognition of learning, self-regulation, and learning how to learn skills?

3 categories of rubrics: Analytic, Holistic, and Single Point rubrics.

Holistic Rubric

1. Each level of performance has an organic description of what achievement looks like at that level. All criteria used to assess something are considered together.
2. Holistic rubrics are appropriate when the elements you are assessing are all interrelated. For example, in an oral presentation, eye contact confidence is connected with posture and energy. It is hard to assess one independently of the others.
3. Great for formative feedback as students and teacher can use this indicating which specific elements to work on, and where the strengths are to amplify.

•

Analytic Rubric

1. This is a well-known format - arranged in a grid with sets of criteria and performance levels such as Emerging, In Development, Competent Performance, Mastery.
2. The form helps granulate different categories of mastery so that we can give feedback to different areas of performance where students might be in different developmental stages. For example, a student might be great at logical argument but be struggling with grammar as a non-native user of a language.

Single Point Rubric

1. This is like an analytic rubric with specific categories and criteria to demonstrate. But, there are no performance levels like developing, competent, or mastery.
2. There is space on the left and right of the criteria – the left for notes on how to improve on a specific criterion, the right for notes how to stretch and go beyond the criteria. This makes single-point rubrics good for creative/innovative work as there is no upper limit for stretching oneself and thinking out of the box. This rubric also enables co-creating criteria with students and modifying assignments.

Resource: Sample of Rubric Types

Sample: Single Point Rubric

Please note: If you do not recall what some of the terms in this rubric mean or what they should look like in your work, check our List of Writing Terms in Canvas, ask a peer, or ask me.

Improvement Actions	Competency Criteria	Going Above and Beyond
	Introduction There is a specific focus on a social issue. You show how and why the issue is important. You end your introduction with a thesis statement that presents an overview of the rest of your essay.	
	Paragraph Structure Each paragraph has an assertion that connects with the thesis statement. The assertion is developed and explained with evidence and commentary. There are no irrelevant details in each paragraph; everything in the paragraph connects with the assertion.	
	Organization Each paragraph connects with and leads to the next one; your reader can follow the sequence or logic of your thinking from one paragraph to the next. As we read from one paragraph to the next, we can see how all your paragraphs connect to and support your thesis statement. You use transition markers to help your reader understand how one paragraph leads to the next.	
	Paraphrase and Citation (avoiding plagiarism) You use citations to indicate when you bring in someone else's ideas.	

	You use quote marks when you bring in someone else's words.	
	Mechanics - Syntax, punctuation, spelling You have proofread your essay to correct errors of grammar, spelling, and punctuation.	

Sample: Holistic Rubric. Presentation Skills

Mastery

All the presentation is audible and comprehensible. Voice is energized and well-modulated through the presentation. Excellent eye contact with the audience consistently. Posture is open and faces the audience the whole time.

Almost There

Most of the presentation is audible and comprehensible. Voice has energy and is well-modulated through most of the presentation. Eye contact is quite consistent with occasional gaps. Posture is open and faces the audience with occasional lapse and turning away.

Coming Along

Many parts of the presentation are not audible, some mispronunciations impede clarity and comprehensibility. Voice has energy for the most part, there is some modulation, but tends to drop in energy frequently. Eye contact is attempted but is inconsistent. Posture is open and faces the audience for at least a third of the presentation time. Nervousness is apparent but does not mar the presentation.

Emerging

Many parts of the presentation are not audible, some mispronunciations impede clarity and comprehensibility. Voice lacks energy and there is no modulation. Eye contact is missing for the most part. Posture is closed and often turned away from the audience. Nervousness is apparent and mars the presentation.

Overall Strengths:

Areas for Growth and Stretching Further:

Sample: Analytic Rubric: Debate Preparation.

Here is an analytic rubrics used formatively to give feedback to students preparing material for a debate.

Category of Work	Emerging	Becoming Competent	Mastery
Selection of ideas	You have chosen a set of ideas to use. You have tried to justify some of your ideas. Many ideas are left unjustified. Your ideas are not connected to your position on the debate.	You have justified each one of your selected ideas. Some of your justifications lack evidence from reliable sources. You do not show clearly how they support your position on the debate.	You have justified each one of your selected ideas. In justifying them, you state clearly how they support your position on the debate
Use of evidence	You have some evidence, but need to gather more. You are struggling to explain how and why your evidence is reliable. You have not yet connected most of your evidence items to specific assertions for the debate.	You have good evidence, but not all of them are clearly reliable or are not fully explained. Most evidence items are connected to specific assertions you plan to make in the debate.	You have good evidence from reliable sources. You explain how and why your sources are reliable. Each evidence item is connected to a specific assertion you plan to make in the debate.

The AAC&U's VALUE project (Valid Assessment of Learning in Undergraduate Education) developed 16 analytic rubrics, each tested and validated by teams of faculty experts in colleges and universities across the United States. The rubrics cover their Essential Learning Outcomes:

Quantitative Literacy • Ethical Reasoning • Inquiry and Analysis • Problem Solving • Teamwork
• Creative Thinking • Critical Thinking • Written Communication • Oral Communication
• Reading • Integrative Learning • Civic Engagement Local and Global • Information Literacy
• Global Learning • Intercultural Knowledge and Competence • Foundations and Skills for Lifelong Learning

You can view and download a set of analytic rubrics on [the AAC&U website](#).

Further Exploration

Blum, S. (2020). *Ungrading. Why rating students undermine learning (and what to do instead)*. West Virginia University Press. [Link to e-book at Claremont Colleges Library](#)

Susan Blum is editor of this collection of foundational perspectives and methods different educators have used in developing an alternative approach to assessment that transforms legacy practices into inclusive, equity-minded, and deep learning oriented learning.

Feldman, J. (2019). *Grading for equity. What it is, why it matters, and how it can transform schools and classrooms*. Corwin Press. [Link to e-book at Claremont Colleges Library](#)

Rubrics

An e-community that offers a rubric creation and sharing tool. With a free account you can filter their thousands of rubrics by subject and grade/college level, and then modify to work with your specific assignment. Again, no need to reinvent the wheel - use your time and energy to modify and improve what there is as a community resource. The good thing is the rubric you create is then shared back into the database of rubrics so the collection is continually growing.

[Andrade, Heidi L., and Ying Du. \(2005\).](#) Student perspectives on rubric-referenced assessment. Educational & Counseling Psychology Faculty Scholarship 2. (2005) [approx. 7 pages].

This study suggests that students use rubrics to support their own learning and academic performance. In focus groups, fourteen undergraduate students discussed the ways in which they used rubrics to plan an approach to an assignment, check their work, and guide or reflect on feedback from others. The students said that using rubrics helped them focus their efforts, produce work of higher quality, earn a better grade, and feel less anxious about an assignment. Their comments also revealed that most of the students tend not to read a rubric in its entirety, and that some may perceive of a rubric as a tool for satisfying a particular teacher's demands rather than as a representation of the criteria and standards of a discipline

Phase 3 - Consolidation and Integration
Class Sessions 13 - 15

Chapter 13 - Integrating Learning Sciences and Pedagogies

In this chapter, we present learning science and pedagogies as launch points to consolidate principles for transformative ethical education. You will explore some theories from learning science as well as a selection of pedagogies

We have selected the following learning and motivation theories:

1. Maslow - hierarchy of human development
2. Dweck - self-theories for growth and fixed mindsets
3. Deci & Ryan – self-determination theory
4. Piaget – cognitive assimilation and accommodation
5. Vygotsky – Zone of Proximal Development
6. Social Emotional Learning (CASEL model)
7. Seligman – PERMA (positive emotions, engagement, relationships, meaning, achievement)

We have selected the following pedagogies:

1. Abolitionist
2. Arts-Based
3. Contemplative
4. Critical Race
5. Culturally Relevant
6. Indigenous

Each is presented in thumbnail fashion with a visual if available and a short explanation. We also provide further references if you want to dig deeper into any of the theories or pedagogies that ignite curiosity to dive into more exploration.

Your goal is not to learn these as separate theories but to find how they connect with each other, with your values and goals, and how they can inform how we design inclusive equity-minded teaching.

Keep the following questions in mind as you explore:

- What connections do you notice between learning science theories, and between different pedagogies? What connections are there between learning science principles and pedagogies? Are there common principles for supporting engagement that in inclusive and equity minded?
- What connections do you notice to your own experience as a learner? Do any principles from these theories illuminate your own learning experiences, both positively and negatively?

Reflect Write some notes in response to these questions about yourself as a learner. This will prime you to explore the learning science theories and principles in this chapter and engage in class.

1. Think of yourself in any learning experience - any age - where you were **fully engaged**, motivated, and enjoyed the learning process. This can be in formal or informal situations. What contributed to your positive engagement and learning in this situation?
2. Think of yourself in any learning experience - any age - where **you were NOT fully engaged**, motivated, and enjoyed the learning process. This can be in formal or informal situations. What contributed to your negative engagement and learning in this situation?
3. Babies and little children love to learn - they are hungry to learn and find it joyful. Why do you think some people grow up to not love learning or going to school?

Lenses on Learning: Behaviorism, Cognitivism, and Constructivism

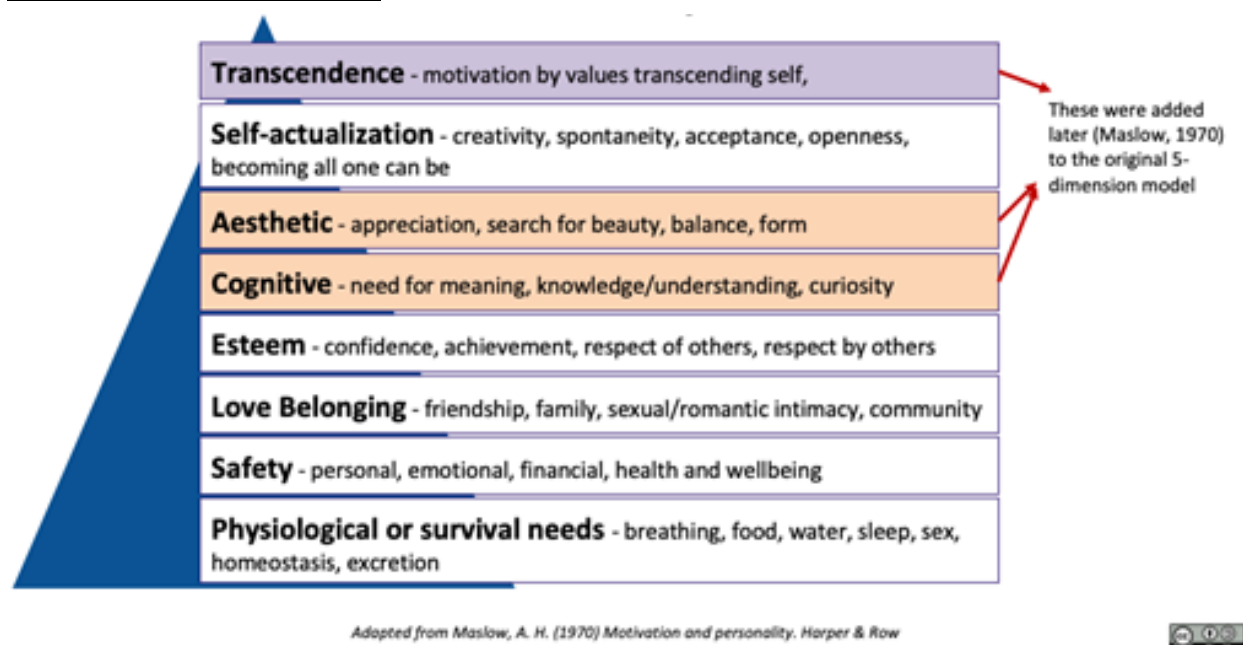
Watch: [3 lenses on learning](#) [2:58 mins]

This video presents 3 perspectives on learning - behaviorism, cognitivism, and constructivism that have shaped teaching practices and design.

- How do these lenses on learning connect with or diverge from your definitions of teaching and learning?
- Which perspective most represents the ways in which your discipline (especially in undergraduate settings) has traditionally approached learning?
- The video uses metaphors to describe the human mind - a black box (behaviorism), a computer (cognitivism), a rhizome (constructivism). Which one/s do you most resonate with and why? If you had to come up with your own metaphor for the human mind, what would it be?

Thumbnail Learning Theories

Maslow: Hierarchy of Needs



Maslow's (1943, 1954) original five-stage model was expanded to include cognitive and aesthetic needs, and then transcendence needs (Maslow, 1970b). Maslow distinguished between Deficiency needs (Physiological, Safety, Love and Belonging, and Esteem), and Growth needs (Cognitive, Aesthetic, Self-Actualization, and Transcendence).

Deficiency needs when unmet negatively affect a person's development; we seek to satisfy them in order to avoid feeling bad. Growth needs do not arise from a lack of something, but from a desire to flourish.

While the model presents needs in a hierarchy, Maslow (1987) pointed out that motivation is complex and that "any behavior tends to be determined by several or all of the basic needs simultaneously rather than by only one of them" (p. 71). For example, one might be hungry and face safety risks, but be deeply motivated to search for beauty and new ideas, or work for social change. There are also cultural and contextual differences in how these needs manifest and affect motivation and engagement. Tay and Diener (2011) found, for example, that in many societies, people whose basic needs had not been met reported having pursued higher level needs such as social relationships and self-actualization.

Application

As a heuristic model to support equity-minded teaching, Maslow's model gives us categories for designing teaching-learning environments. We can take a systems-view to understand learner needs that impinge on how and why they engage and disengage in learning and where we can invite assets and build support for effective engagement and flourishing. What are some areas in course design and facilitation in the classroom where you can do this?

Self-Theories • Carol Dweck

Dweck identified two main perceptions or “self-theories” that affect our learning motivation:

Entity or Fixed Mindset – see intelligence as fixed and stable. Hence, they can be confident, motivated and will try as long as they feel the task is within their grasp. But they will avoid taking risks - error or failure would imply they had reached their limits. Therefore, they tend to be performance goal oriented and avoid situations they perceive as risky.

Incremental or Malleable Mindset – see intelligence as fluid and changeable. Hence, they are oriented to errors as points from which they can learn and improve. They like challenges and are more mastery-goal oriented and willing to take risks. Dweck calls this the learning mindset.

Learning – by its very nature – means we begin in a state of not knowing without full competence. Building competence includes trying, making and correcting errors, as we develop mastery. The malleable mindset is more suited to learning than an entity mindset.



Adapted from: Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.

Watch: [Growth Mindset. The Power of Yet](#) [11:19 min]

As you listen to Carol Dweck speak on enabling change by fostering a malleable, learning, or growth mindset, think how this plays out on the Cynefin framework. In which sense-making space would a learner have to see themselves in order to persist in engagement? What are the

internal and external factors that lead toward a fixed mindset? What can we do to shift learners from fixed to growth mindsets?

Application

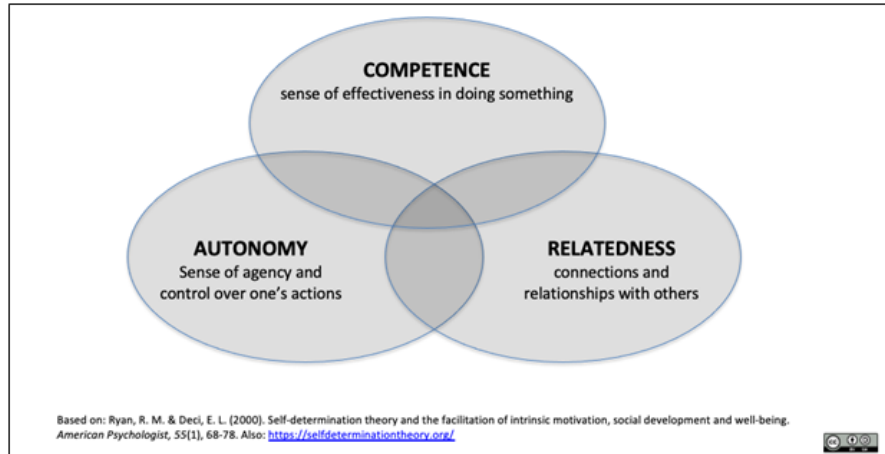
Learning engages an individual in being curious, wondering, exploring. Experimenting and playing helps one understand that “failure” is not a bad thing; real discovery is about walking into the unknown, taking risks, trying things out that do not work, but using that trial to discover what works. What are some strategies you can think of in the pedagogy you are developing that will support this growth mindset development? What can you do in course design, assessment and assignments, community development, your facilitation methods etc.?

Self-Determination Theory (SDT). Edward Deci & Richard Ryan

SDT focuses on the interaction between external factors that impact us and intrinsic drives and motivations toward action. It also focuses on how social and cultural factors affect our sense of agency and motivation. Six mini theories make up the larger SDT and one of the fundamental theories in SDT is Basic Psychological Needs Theory (BPNT) that looks at 3 universal needs – Autonomy, Competence, and Relatedness. Ryan & Deci (2000) defined a basic psychological need as critical for the “optimal functioning of the natural propensities for growth and integration, as well as for constructive social development and well-being” (p. 68).

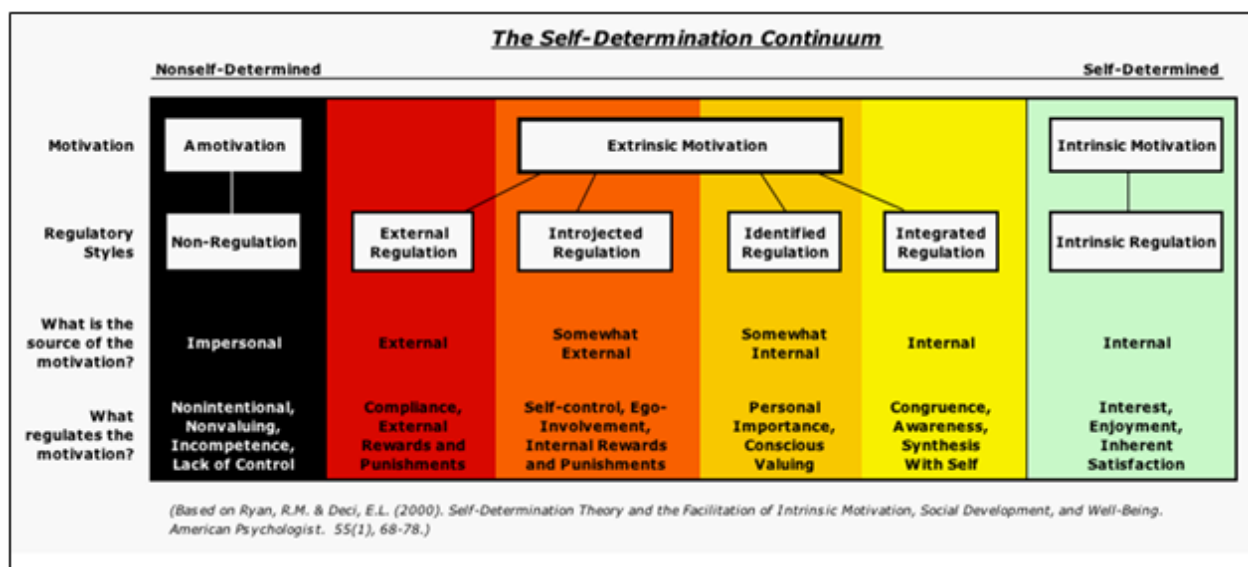
Watch: [Edward Deci on Self-Determination Theory](#) [8:02 mins]

Edward Deci explains self-determination theory - autonomous or volitional motivation (as opposed to controlled motivation), and the universals of the need for autonomy, competence, and relatedness. Again, think of how this can be interpreted through the Cynefin framework - one needs self-determination to persist through the dissonance of learning. In which sense-making spaces could we build scaffolds toward establishing greater autonomy, competence, and relatedness that would a learner to develop the self-determination to persist in the Complex space where learning happens?



- **Autonomy:** The experience of having control or volition and being willing. When we have autonomy, we experience a sense of authenticity in the integration and validation of our actions, thoughts, and feelings. Not having autonomy, we feel pushed in unwanted directions, blocked, and often experience conflict.
- **Competence:** The experience of mastery or being effective at something when we engage in activities that enable us to use and extend our knowledge and skills effectively. Not having competence, we feel helpless and a failure.
- **Relatedness:** The experience of positive connections and care, meaningful sense of belonging. Not having relatedness, we feel alienated, excluded, and invisible to others.
-

The Self-Determination Continuum



With this model, Deci & Ryan (1985) introduced an Organismic Integration Theory as part of SDT that articulated how contextual factors like levels and sources of regulation affect different levels of intrinsic and extrinsic motivation.

Rather than a binary of intrinsic and extrinsic motivation, there is a continuum. The taxonomy of motivation levels ranges from left to right in terms of degree of external and internal (self-determined) motivation sources.

Amotivation – source of motivation is impersonal, no regulation. Not valuing an activity or not feeling competent to do something - there is no action or action with no intention (going through the motions). Apathy. *I have homework – who cares.*

Extrinsic Motivation is granulated different kinds of regulation:

- **External Regulation** – completely external source of motivation. Regulation is imposed through compliance, external rewards and punishments. *If I do not do homework, the teacher will punish me. If I do the homework, I get to have candy.*
- **Introjected Regulation** – source of motivation is still external (impacts someone else) but not yet one's own actual desire. We act to avoid guilt or anxiety – “contingent self-esteem”. *If I don't do homework, I will let ____ down and feel bad.*
- **Identified Regulation** – source of motivation is somewhat internal but there is a conscious valuing through identification so that we own and accept the action. *Doing homework will help my college application and I want to go to college.*
- **Integrated Regulation** – source of motivation is internal. Regulation of actions comes from assimilation into internal values and sense of self. This might sound like intrinsic motivation, but the difference is that integrated regulation is still done to achieve something rather than for the inherent enjoyment of something. *Doing homework reflects my work ethic and sense of responsibility.*

Intrinsic Motivation - source of motivation is internal, regulation is internal. Deeply valuing an activity and engaging for inherent satisfaction. Highly autonomous, full self-determination. *I love history – what a kick I get from this!*

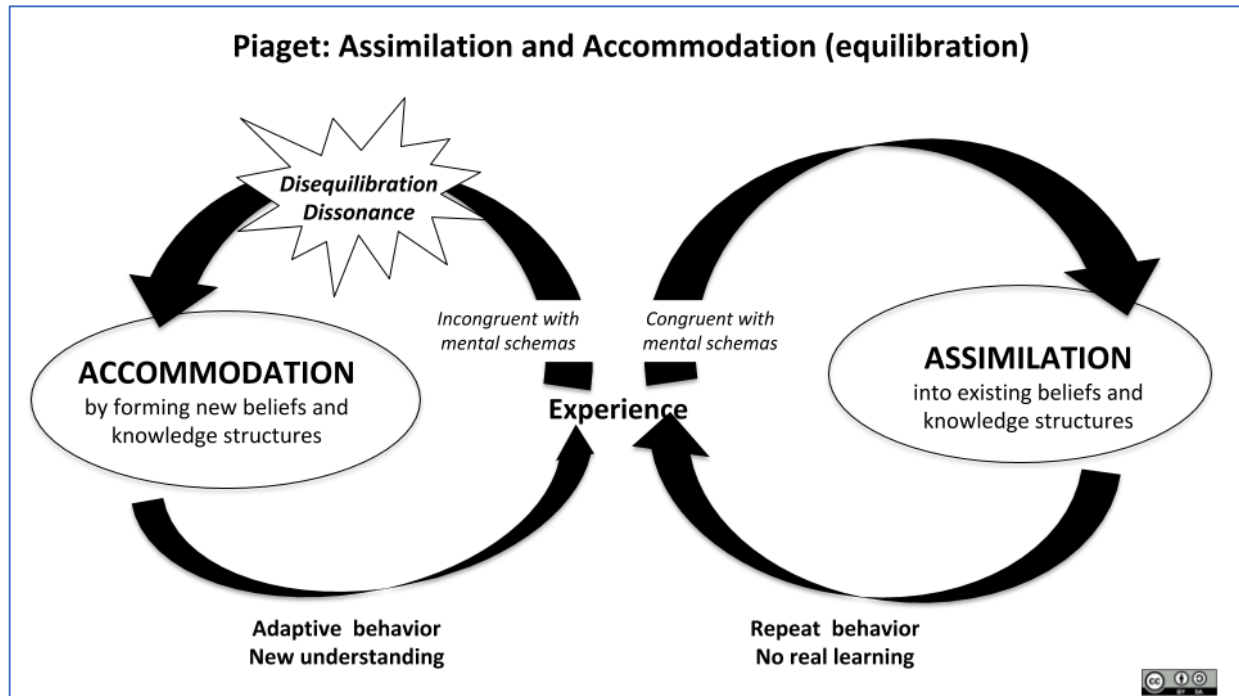
Application

1. Can you think of areas in your life in formal schooling and informal learning where you experienced each of these different levels of motivation?

2. Many students have been in school and/or socialized into being more extrinsically motivated. What principles and strategies from the pedagogy you are developing can support students to move further along the continuum toward intrinsic motivation?

Cognitive Equilibration - Assimilation and Accommodation • Jean Piaget

Piaget is most well-known for his stage theory of child development. He also explained the learning or knowledge construction as a process of equilibration or adaptation, moving from assimilation to accommodation.



Adapted from: Ginsburg, H. P. & Oppen, S. (1987) Piaget's theory of intellectual development. (3. Edition). NY: Prentice-Hall.

Assimilation

When we meet a new object or situation, we use existing schema or knowledge structures to explain or understand it. This is a conservative process, and no new knowledge is created. We explain what we see through knowledge we already have.

We have a knowledge schema for "dog" and so when we meet a new 4-legged creature that barks, we will interpret it as a "dog" – we engage in an assimilation process. While we have added to our knowledge base, we have not made any significant shifts.

Accommodation

When we meet something that existing knowledge structures or schema are not able to explain, we find ourselves in disequilibrium. This is an unstable state and is cognitively dissonant. If we can create new knowledge structures to accommodate the new item or experience, we regain stability. Thus, we construct or grow knowledge.

For example, in travelling to a new culture, we meet things that our existing knowledge structures cannot explain, for example, people helping themselves to food from a shop counter without paying. We might experience cognitive dissonance and feel puzzled, even alarmed. But

if we learn this custom, we accommodate the experience and develop a new knowledge schema about this cultural practice.

A more extreme example – someone from 1950 is transported to the 21st century; they encounter a hard, oblong, metallic object that glows and beeps. They do not have any knowledge schema to interpret it. Unable to assimilate it, they experience dissonance and disequilibrium. If they learn about it through exploration and talking to others, they accommodate it and expand their knowledge schemas for “telephone” – the cell phone.

Imagine how much more dissonant it would be for someone from even further back in time when there were no phone technologies at all for communication over a distance.

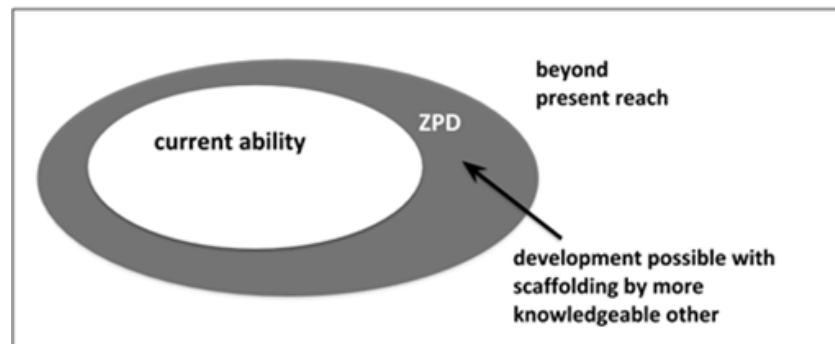
Application

Piaget’s concept of learning as an adaptive process indicates dissonance as a natural part of coming to know something, of expanding, and developing knowledge. The learner enters a state of disequilibrium in encountering something new. Depending on contextual and internal factors the learner could feel overwhelmed by this, fall into Chaotic domain thinking, and disengage.

1. What are some contextual factors students experience in addition to the natural dissonance of learning something new?
2. How do socio-ecological factors and different elements of systemic barriers and oppression create this additional dissonance?
3. What pedagogical principles and strategies can address this additional dissonance so that students can effectively engage with the natural dissonance of learning?

Zone of Proximal Development • Lev Vygotsky

Social constructivism sees language and culture as critical in learning development. Learning happens through social and community interactions; knowledge is co-constructed with others.



Adapted from: Vygotsky, L. (1978). *Mind in Society*. London: Harvard University Press.

Vygotsky developed the idea of the Zone of Proximal Development (ZPD), as the zone of potential growth. This is where the skill is just beyond what the learner can achieve independently, their competence level, but which is possible to achieve IF the learner is assisted. The person assisting – or scaffolding the learning (Wood, Bruner, & Ross, 1976) - is a More Knowledgeable Other (MKO) and could be an expert or a peer who is just a step ahead in skill level. This means the MKO is not limited to teachers and includes peers, community members etc., and supports peer-teaching and community-based learning approaches.

Application

In Piaget's model, accommodation means entering a place where the new situation or encounter is beyond what one knows (Complex domain in the Cynefin framework). This leads to adaptation - re-structuring one's mental schemas to "accommodate" the new knowledge. This is a dissonant space and can make students anxious and decrease engagement and motivation. In considering Vygotsky's idea of the ZPD, we see that the ZPD is that new situation of accommodation and hence the ZPD is potentially a dissonant space, unless the learning is happening through interaction with others, especially if that includes an MKO, someone who scaffolds the accommodation process.

What kind of scaffolding can you use to help students work effectively in stretching their skills and abilities? How can you begin with where students are, and help them take incremental steps to stretch their skills and reach new ability levels? Consider how you break down steps in giving instruction, whether you point out clear steps when you model and demonstrate, and how and when you have students teach each other.

Not forgetting other impinging factors that create dissonance in learning: socio-ecological determinants of learning, systemic barriers and oppressions, what scaffolding (by the teacher and peers) might be important in addition to the direct support of the learning process?

Social-Emotional Learning

Emotion or affect has long been absent from educational settings. Pause and think about the deep strangeness of the idea that learning is all about cognition. Part of this can be attributed to the binary distinction we make between “cognition” and “emotion”, rational thought and irrational feeling, where it seems as if the former of these pairs is somehow superior, and that emotions takes away objectivity and rigor. In college level teaching, we also have the added idea that emotions are part of K-12 teaching and learning; after all, many pioneers who champion holistic education like John Dewey, Maria Montessori, and the Reggio Emilia Schools are all in the domain of early childhood education. At college, we are expected to work with rational people who can go about the business of learning as a cognitive process of knowledge development. However, neuroscience research (Damasio 2005, Immordino-Yang, 2011) show that emotions are woven integrally into all decision-making, motivation, and learning through our lifetime.

Watch: [CASEL Social Emotional Learning](#) [6:14 mins]

CASEL (Collaborative for Academic, Social, and Emotional Learning) is a Chicago-based nonprofit organization that catalyzed research and practice in social emotional learning (SEL) and needs, and began defining this field more than 20 years ago. In this video, they explain what SEL is, and why it is important. Again, ask why and how this is important for college level teaching and workspaces ... and why we have been slow to bring this in.

Emotions are at the heart of human experience and interaction.

- “the classroom is already a highly charged emotional atmosphere; why not harness that power and direct it at learning” (p.9) – Susan Rose Cavanagh, *The Spark of Learning*. 2016
- “First, emotion and cognition are intertwined, and involve interplay between the body and mind. Second, social processing and learning happen by internalizing our subjective interpretations of other people’s beliefs, goals, feelings, and actions, and vicariously experiencing aspects of these as if they were our own. Together, these two results from neuroscience could have important implications for the design of learning environments” – Mary Immordino-Yang, 2011.
- Human beings have distinguished themselves from all other beings by creating a spectacular collection of objects, practices, and ideas, collectively known as cultures. ... Language, sociality, knowledge, and reason are the inventors and executors of these complicated processes. But feelings get to motivate them and stay on to check the results... Cultural activity began and remains deeply embedded in feeling. The favorable and unfavorable interplay of feeling and reason must be acknowledged if we are to understand the conflicts and contradictions of the human condition. (p 3- 5). Antonio Damasio, *The strange order of things*. 2018.

- “Social and emotional learning (SEL) is the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships and make responsible decisions”. **CASEL** (Collaborative for Academic, Social, and Emotional Learning).



Self-awareness: Able to accurately recognize one’s emotions and thoughts and their influence on behavior. This includes accurately assessing one’s strengths and limitations and possessing a well-grounded sense of confidence and optimism.

Self-management: Able to regulate one’s emotions, thoughts, and behaviors effectively in different situations. This includes managing stress, controlling impulses, motivating oneself, and setting and working toward achieving personal and academic goals.

Social awareness: Able to take the perspective of and empathize with others from diverse backgrounds and cultures, to understand social and ethical norms for behavior, and to recognize family, school, and community resources and supports.

Relationship skills: Able to establish and maintain healthy, rewarding relationships with individuals and groups. This includes communicating clearly, listening actively, cooperating, resisting inappropriate social pressure, negotiating conflict constructively, and seeking and offering help when needed.

Responsible decision-making: Able to make constructive and respectful choices in personal behavior and social interactions based on ethical standards, safety concerns, social norms, the realistic evaluation of consequences of various actions, and the well-being of self and others.

Application

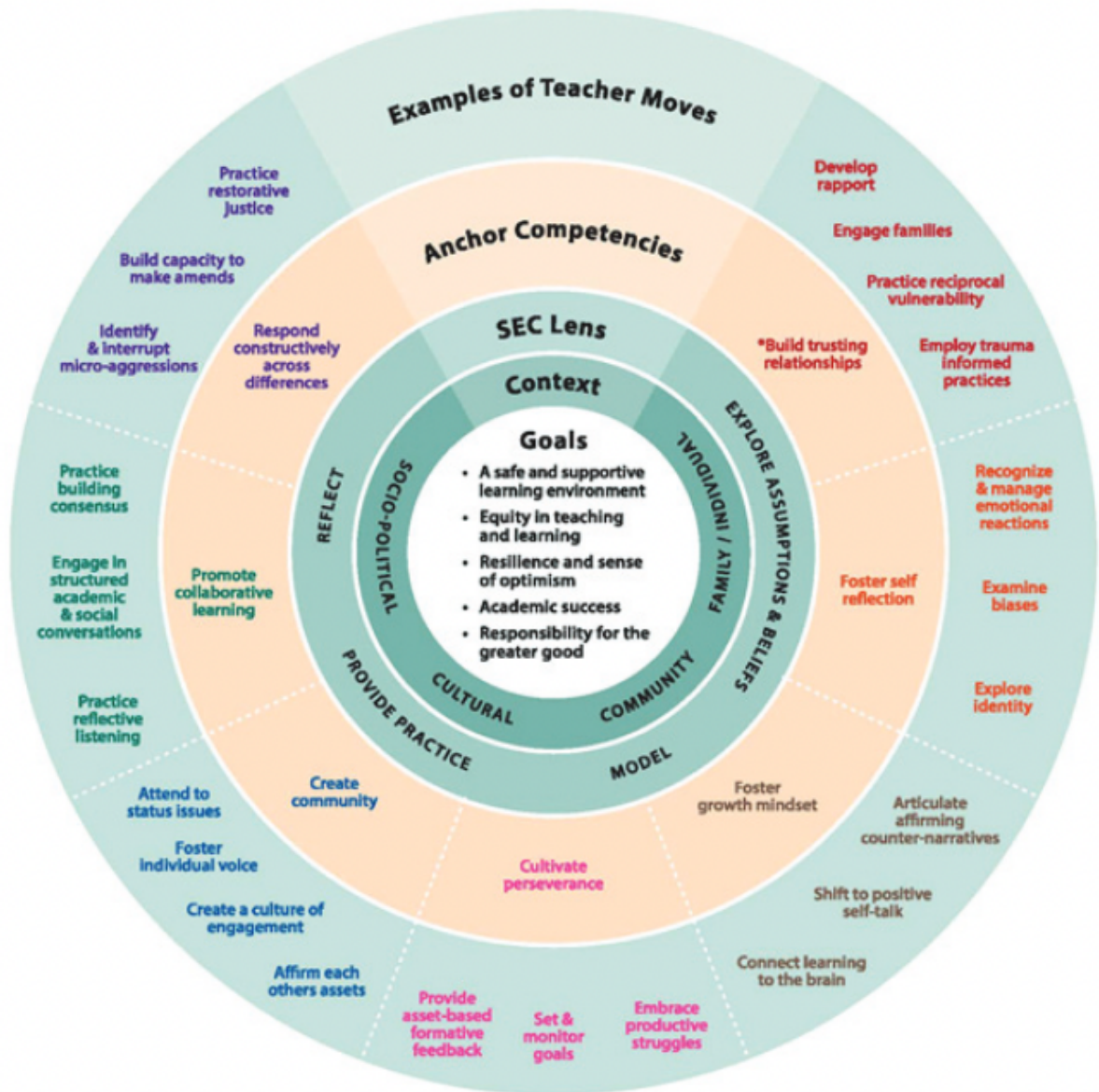
SEL has been of concern in K-12 settings and even then practice lags behind research. It is less visible in higher education pedagogy (student affairs and student life professionals seem more concerned than faculty).

1. Why do you think this is so? To what extent might legacy disciplinary teaching cultures block awareness of SEL as a key element in student engagement and achievement?
2. Does the pedagogy you are developing make space for recognizing, inviting, and creating positive emotions into the teaching-learning process?
3. When we begin recognizing the place and role of emotions, we also see how emotions can also be barriers to joyful learning and flourishing. To what extent and in what ways does the legacy system of education foster negative emotions that oppress learning.

Social-Emotional-Cultural Competencies

How are race and complex intersectional identities represented in social-emotional learning? We experience our identities phenomenologically; there is no separating our physiological, social, cognitive, and emotional selves in this experience. In thinking about this, we can ask – what exactly is “the mind” – if not a thinking-sensing-feeling process. Therefore, our experiences as a teacher and learner are shaped and attuned with WHO we are in all our complexity. This model brings in anchor cultural competencies

Social, Emotional, Cultural (SEC) Anchor Competencies Schema



*Building trusting relationships is essential to the development of all anchor competencies.

PERMA and Positive Psychology

Martin Seligman (2011) developed a model for wellbeing called PERMA - Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment.

- **Positive Emotions:** Experiencing emotions such as joy, gratitude, contentment, interest, hope.
- **Engagement:** Full absorption and attention in activities that are challenging but draw on your competence (experiencing Flow)
- **Relationships:** Experiencing relationships of mutual trust, that are meaningful
- **Meaning:** A sense of belonging and connectedness to something we see as bigger than oneself.
- **Accomplishment:** Experiencing mastery and success.

This is connected to research on Subjective Well-Being led by Edward Diener, Sonja Lyubomirsky and others. Health disciplines have adopted the PERMA model, adding Health (PERMAH) to integrate nurturing health habits - diet, sleep, and exercise - as part of positive education ((Norrish & Seligman, 2015).

Watch: [Martin Seligman on PERMA](#) [4:43 mins]

A quick overview by Seligman defining the 5 elements of PERMA. What aspects of PERMA are important in our work toward equitable education?

Watch: [The Geelong Grammar School - Positive Education](#) [3:09 mins]

Geelong Grammar School in Australia adopted Positive Education and developed a model they integrate in their curriculum. As you watch this video, ask how and why any of this is important at college level teaching and learning especially given the changing higher education landscape and our mission for ethical education that prepares all students for their futures. Why do you think we have not broadly adopted these principles so far at college level? If you're interested to do a deeper dive, check out the [school website](#):

Application

In many disciplines, the legacy culture of teaching does not take emotions into consideration in the design and facilitation of learning. Why is it important to change this and look at things like PERMA? What are some pedagogical principles that would address PERMA elements as a way to ensure inclusivity and learning success for all students?

Resource: Supporting Learning as a Complex Adaptive Process

Here are some strategies that support learners in navigating learning dissonance so that they understand challenges as spaces for growing and learning.

1. **Develop an exploratory and meaningful classroom culture** – a paradigm or microsystem - invite curiosity, exploration, questions. Explicit care, connection, and community. Make trust and respect part of class culture.
2. **Use safe-fail design** – space and time for mistakes, a culture of mistakes as part of learning.
3. **Use formative growth-based processes** - drafts, low-stakes progress assessments, feedback and revision, collaborative work and assignments, multiple opportunities to revise and improve.
4. **Build metacognition and learning how to learn** – self- and peer-feedback, learning reflections.
5. **Build autonomy and competence** – student choice, flexible options, co-creating work processes with learners, making learning visible to students as they work, celebrating progress.
6. **Build a sense of relatedness and meaningful connection** – collaborative and supportive classroom community, inviting and engaging the whole student – recognizing identities, histories, and lived experiences as assets, collaborative active learning, connecting contents to students’ lives, current events, and future needs.
7. **Critically examine your curriculum and teaching design** as an ongoing reflexive practice, that is use Design Thinking to be iterative in a cycle of Empathize-Define-Ideate-Prototype-Test. Use periodic and open student feedback, reflect with students.
8. **Create flexible learning environments.** Use UDL and Multiliteracies to create learning structures, resources, and processes that create meaningfulness, access in multiple modalities, in order to support a diversity of learners in engaging and persisting in learning.

Counter-Mapping Legacy Education with Transformative Pedagogies

What might be a counter-mapping of pedagogy that addresses systemic inequities and oppressions, and that will transform the processes of teaching and learning to invite all learners, supporting them in re-connecting with the joy and wonder of meaningful learning?

In this section, you will explore a set of pedagogies from which you can develop your approach in alignment with your goals and values as an ethical educator.

As you explore these pedagogies, look for connections with the learning theories in the previous section.

Exploration Directions

We have presented a few different pedagogies – there might be others you know of that are not here but bring them into your exploration. All these pedagogical frameworks are interconnected as a system counter stories to legacy education. We invite you to understand the richness of these interconnections and boundary crossings.

Look for values and principles from these different pedagogies that connect with your values and can help you shape your goals as an educator to create your own transformative pedagogical approach. You can draw different ideas from different pedagogical ideas to create a pedagogy around a core idea or value – like Hope, Peace, Joy, etc.

Based on this, you will be able to respond more deeply to your TPS and DVS questions.

Here are some guiding questions to help you in this process:

1. How do these pedagogies or parts of these pedagogies resonate with your values, how you think about education and schooling, and what you hope to do as an educator?
2. Is there one that might work as your foundation - from which you can bring in ideas from other pedagogical visions?
3. Is there a pedagogy you have or want to create that is not listed? Feel free to bring what you have or be creative and build your own.
4. Do not feel like you must select and abide by a single pedagogy. Use these as lenses to find principles that connect authentically to who you are and to your values and goals. Remember you are working in the Complex domain, sometimes in Aporia, seeing multiple truths as part of the process.

Things to remember

Plurality and interconnectedness of pedagogies - pedagogies are not formulaic - rather they are lenses into values, histories, goals, and approaches as to why and how we engage and support. In the few pedagogies sketched here, I hope you see correspondences and overlaps as well as different colorings, emphases, and developments of each one in seeking to articulate the philosophy and vision they bring.

Pedagogies are unique and embodied. [Yolanda Sealey-Ruiz, in a conversation on abolitionist pedagogy](#) pointed out there is no magic pedagogy, only the deep work we each do with ourselves if we are to be ethical educators. We create our unique embodiment of teaching. This also connects with Parker Palmer's idea that we teach who we are.

Pedagogies are fluid because they are embodied. Know that your pedagogy will change - as you change have new experiences and grow as an educator. So, your pedagogy will evolve along with you. You might find that just within this semester, working with your group will open new insights and question assumptions you hold that could lead to shifts in your pedagogy before the course ends.

Holistic Pedagogy

- Rudge, L. T. (2016). [Holistic pedagogy in public schools](#). A case study of three alternative schools. *Other Education. A Journal of Educational Alternatives*, 5(2). 169-195. The article has a good theoretical overview of the background and philosophy of holistic pedagogy.
- [Holistic education website](#) - short articles and overviews of the approach and a bibliography

“holistic education integrates the idealistic ideas of humanistic education with spiritual and philosophical ideas; it incorporates principles of spirituality, wholeness, and interconnectedness along with those of freedom, autonomy, and democracy.” (Rudge, 2016; p. 170)

Key Principles

1. Wholeness and authenticity. Spirituality - Reverence for Life/Nature - Interconnectedness - Human Wholeness
2. Freedom and Democracy. Recognizing and promoting the unique meaningfulness of each individual and their lived experiences, the importance of mutual love and caring relations toward freedom, autonomy, and a true democracy.
3. Caring. Learning is founded upon caring relationships in the classroom - compassionate learning and peaceful classrooms, connections with school, homes, and wider community. The whole child's experiences are valid and integrated. Bronfenbrenner's bio-ecological model.

4. Transformative. Learning is not transmission and transaction - Learning is transformative engagement of the whole student. Connects with constructivist epistemology. Meaningfulness and personal connection, learner self-awareness (metacognition of learning). Fink's dimensions of Caring, Human Dimension, and Learning How To Learn are relevant to holistic pedagogy.
5. Flexible and open classrooms - flexible pacing and formative processes, creative processes.
6. Transdisciplinary - thematic connected curriculum rather than fragmented into separate disciplines. Focus on inquiry - Project based and community engaged learning across the curriculum.

Contemplative Pedagogy

- [Tree of contemplative pedagogy](#) - a graphic representation of the different practices.
- Kaufman, P. (2017). [Critical contemplative pedagogy](#). *Radical Pedagogy* 14(1). - Kaufman shows how principles and practices of contemplative pedagogy connect with those of critical pedagogy.
- [Contemplative Pedagogy Network](#)
- Laura Rendon - [Contemplative Practices Centering Social Justice](#) - video. [View time: 42:39 mins] While this is a long video, it is worth watching if you are interested in how contemplative pedagogy as a tool can further social justice goals and outcomes.

Key Principles

Contemplative pedagogy is a relational and holistic approach to education.

1. Non-duality and therefore of interconnectedness and interdependence. Hence rejection of the notion of dominance and "otherness" as causing suffering and injustice, seeking connection as the basis for peace and justice.
2. Recognition of impermanence and fluidity and hence of emergence and change. Teaching is therefore an intentional, mindful, and responsive approach.
3. Learning is an embodied experience that connects the mind, heart, spirit, and community. The inner and outer worlds of students and teachers are inextricably connected and part of the learning process. Learning thus focuses on meaningfulness to self and to self-in-community and the importance of the full self-turning up in the teaching-learning process.
4. Multiple modalities for learning, including art-based processes, the use of contemplation through integration of mindfulness processes such as meditation, deep listening, silence, free writing and journaling etc. It also embraces and promotes the legitimacy of different ways of encountering the world, of knowing, and expressing one's full self. This therefore makes space for multiliteracies and students' cultural histories, practices, and identity expressions. Used as tools contemplative practices can be powerfully integrated in pedagogies of liberation and justice.
5. The human-centered classroom - moving away from the power dynamics of compliance structures toward co-creative, open, flexible, and joyful ways of teaching and learning.

Based on the principle of non-duality, there is also an impetus to dismantle the implicit power dynamics of compliance based teaching and Freirean dismantling of the authoritarian teacher-student dynamic toward opening to the wisdom and mutual exchange possible between learners and educators at all ages.

Indigenous Pedagogy

- [Pulling Together: A Guide for Curriculum Developers](#) by Asma-na-hi Antoine, Rachel Mason, Roberta Mason, Sophia Palahicky, and Carmen Rodriguez de France. This is a thorough Open Access resource at the University of British Columbia.
- Explore the chapter - [Indigenous Epistemologies and Pedagogies](#) for a good overview of this approach.
- Allen Luke - [videos on Indigenous Education](#).
- [First Nations Principles of Learning](#) - Video [8:59 mins]

Allen Luke - Engaging with indigenous cultures goes beyond political correctness, white guilt, post-colonial concerns, but rather with planetary well-being where traditional ways of healing and living are working where western ways are not. Learning from the wisdom of elders is important for the future.

Key Principles

Epistemological and ontological concepts:

1. Relationality and interconnectedness - we are all related and connected with each other and the natural environments i.e., a worldview that is not anthropomorphic.
2. Sacred and secular are intertwined - the world is an inextricably linked process between material and spiritual dimensions. The spirit and spiritual well-being of the child is as important as the physical (body), cognitive (mind), social and emotional (Heart) well-being.
3. Ancestral knowledge and the future are connected. Tradition, history, and place are important aspects of identity and experience. Learning as an embodied, place-based process forms the connection between past and future.
4. Therefore, the whole is greater than the sum of its parts and pedagogy must be holistic, place-based, and open to the child's full development. The 4 interconnected dimensions of knowledge are Spirit, Heart, Body, and Mind. Teaching and learning therefore is holistic, reflexive, experiential and relational. - It is grounded in place, community, and reciprocity.

Culturally Relevant Pedagogy

- Ladson-Billings, G. J. (1995). [Toward a theory of culturally relevant pedagogy](#). *American Educational Research Journal*, 32(3), 465–491.
- Gay, G. (2010). *Culturally Responsive Teaching: Theory, research, and practice*. New York: Teachers College Press
- Paris, D., & Alim, H. S. (2014). [What Are We Seeking to Sustain Through Culturally Sustaining Pedagogy? A Loving Critique Forward](#). *Harvard Educational Review*, 84(1), 85-100,134,136-137.

Culturally responsive teachers use “the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them.” (Gay, 2010. P. 31).

Key Principles

1. Asset-Based approach. Culturally responsive teachers hold high academic expectations for students and see them as successful from the start.
2. Self-and other awareness – teachers understand that their perspectives and experiences may or may not align with those of their students and so they are open, curious, and eager to learn
3. Awareness of social-political inequities and a willingness to act on these in their classrooms to help students develop a critical awareness of inequities as part of building flourishing capacities.
4. Building students’ metacognition to think critically about inequities in their own and/or peers’ experiences. To overcome barriers, the learner must first become aware of these in order to find an inner strength and self-determination in realizing one’s own worth and value to persist and flourish.

A Variation of Culturally Responsive Pedagogy - Culturally Sustaining Pedagogy

Culturally Sustaining Pedagogy - Django Paris and Samy Alim - pedagogy that is responsive to evolving identities and cultures given global developments of plurality especially in multilingualism and literacies as sources of access and empowerment.

“CSP seeks to perpetuate and foster-to sustain-linguistic, literate, and cultural pluralism as part of the democratic project of schooling and as a needed response to demographic and social change.” (Paris & Alim, 2014; p. 88).

“The future of CSP must extend the previous visions of asset pedagogies by demanding explicitly pluralist outcomes that are not centered on White, middle-class, monolingual, and monocultural norms of educational achievement. As we reposition our pedagogies to focus on the practices and knowledges of communities of color, we must do so with the understanding that fostering linguistic and cultural flexibility has become an educational imperative, as multilingualism and multiculturalism are increasingly linked to access and power. At the same time, CSP must resist static, unidirectional notions of culture and race that reinforce traditional

versions of difference and (in) equality without attending to shifting and evolving ones. Finally, CSP must be willing to seriously contend head-on with the problematic as well as the many progressive aspects of our communities and the young people they foster.” (Paris & Alim; 2014; p. 90).

Abolitionist Pedagogy

- Davis, A. Y. (2003). *Are Prisons Obsolete?* New York: Seven Stories Press
- [U.S Incarceration compared to nations in the OECD](#) - graphic.
- [Interview with Bettina Love](#) - author of *We want to do more than survive: Abolitionist teaching and the pursuit of educational freedom*. Boston: Beacon Press. 2019.
- [Abolitionist Teaching Network](#)
- [Bettina Love explains aspects of abolitionist pedagogy](#) - series of video clips.

“Embracing the historical necessity of innovation, improvisation, and radical rearticulation ... to generate new epistemic and intellectual approaches to meaning, knowledge, learning, and practice for the sake of life, liberation, and new social possibilities.” (Rodriguez, 2010; p.9)

The foundations for this is the parallel between the carceral state (racist policing and prison system and the schooling state that similarly controls and is punitive).

Angela Davis (2003) - “when children attend schools that place a greater value on discipline and security than on knowledge and intellectual development, they are attending prep schools for prison” (p. 39)

Schooling is an industrial process that parallels the prison industry - categorizes and places students in various hierarchies and pathways - gifted, at-risk, undocumented, gang affiliated, exceptional, average, as well as through demographic determinants like race, class, neighborhood etc. Students are also categorized and mechanically sorted through testing systems. Schooling is built around power imposition, compliance, and policing of bodies, movement, voice, and thought toward standards and outcomes that perpetuate the dominant narrative of white supremacy. Students are privileged or alienated. “The idea of the U.S. prison apparatus as a regime, in this context, brings attention to how prisons are not places outside and apart from our everyday lives, but instead shape and deform our identities, communities, and modes of social interaction” (Rodriguez 2010, p. 9)

Key Principles

1. Freedom not reform - “choosing to engage in the struggle for educational justice knowing that you have the ability and human right to refuse oppression and refuse to oppress others, mainly your students”. (Love, 2019; p. 11).
2. Mattering. Belief that all Black, Brown, or Indigenous children are powerful; no one is disposable, i.e., “mattering” is critical and hence the importance of loving Blackness, freedom dreaming, and Black joy.

3. Freedom Dreaming - refusing the victim status, engaging the imagination for new visions; “any revolution must begin with thought, with how we imagine a New World, with how we reconstruct our social and individual relationships, with unleashing our desire and unfolding a new future on the basis of love and creativity rather than rationality” (Kelley, 2002; p.191)
4. Teaching as resistance - a way of life and living - includes how we see the world and a way of taking action against injustice. “It seeks to resist, agitate, and tear down the educational survival complex through teachers who work in solidarity with their schools’ community to achieve incremental changes in their classrooms for students in the present day, while simultaneously freedom dreaming and vigorously creating a vision for what schools will be when the educational survival complex is destroyed. ... Currently, we are tweaking the system, knowing that these adjustments are what we need for the here and now, but we are always keeping our eyes on the root cause of dark children’s suffering.” (Love, 2019; p. 89)

Critical Race Pedagogy

- [Critical Race Theory and Education](#) - Gloria Ladson Billings - Video [view time: 1:32:54]
- Lac. V. T. (2017). [In real time. From theory to practice in a critical race classroom](#). *Inquiry in Education*, 9(1). Article 3.
- Ladson-Billings, G., & Tate, W. F. (2006). [Toward a critical race theory of education](#). In A. D. Dixson & C. K. Rousseau (Eds.) *Critical race theory in education: All God’s children got a song* (pp. 11-30). New York, NY: Taylor & Francis
- Lynn, M., Jennings, M. E. & Hughes, S. (2013) [Critical race pedagogy 2.0: lessons from Derrick Bell](#). *Race Ethnicity and Education*, 16(4), 603-628,
- Derrick Bell - [Critical Race theorist - discusses racism](#). Video. [View time 29:08 mins].
- Derrick Bell - *Faces at the bottom of the well. The permanence of racism*. This is a powerful book - a collection of articles that are parables that show the deep roots of racism in the United States as a result of the “ultimate betrayal” of slavery and thus, the failure of integration.
- Delgado, R. (Ed.). (1995). *Critical race theory: The cutting edge*. Philadelphia: Temple University Press

Critical Race Pedagogy is rooted in critical race theory and postmodern critical theory, especially the Frankfurt School, and includes radical feminism, black feminism, queer theory, post-colonialism, deconstruction, and Marxism. American critical race theory was formalized in 1989 in the first Workshop on Critical Race Theory organized by Derrick Bell. Paulo Freire is a originating figure in establishing a critical approach to education in his distinction between banking and problem-posing education.

McLaren (2003) - “From the perspective of critical educational theorists, the [legacy] curriculum represents much more than a program of study, a classroom text, or a course syllabus. Rather, it represents the introduction to a particular form of life; it serves in part to prepare students

for dominant or subordinate positions in the existing society” (The Critical Pedagogy Reader, p. 86)

Key Principles

1. Build awareness of racism and other oppressions as normal and not aberrant. - it is in the fabric of the dominant paradigm. Meritocracy gives the idea of equal opportunity which is not the case, and in fact maintains the status quo of those in positions of power and privilege. Critical Race Pedagogy seeks to emancipate students from their unconscious participation in an oppressive system by building explicit awareness of racism and other oppressions as part of the curriculum.
2. Positionality. The process of education is not neutral nor benign; rather it is a systematic imposition of a dominant narrative of white supremacy. Therefore the teacher takes a deliberate stance, an explicit positionality that is transparent to the learners and that guides the learning process toward emancipation.
3. The intersectionality of race, class, gender, and sexuality should be central in one’s approach to designing and leading teaching and learning. Use explicit awareness of how this creates privilege and barriers; integrate intersectionality as assets that empower learners.
4. Integrate the lived experiences of students as counter stories and a legitimate source of knowledge. This multidimensionality of other “knowledges” and ways of knowing disrupts the idea of a metanarrative rooted in a white western hegemonic epistemology and ontology. Therefore, allow alternative personal narratives that bring forward marginalized experiences as critique, revelation, and celebration toward inclusion and justice.

Arts-Based Pedagogy

[Maxine Greene institute](#) - Maxine Greene was a proponent of engaging the individual and social imagination through the arts.

ArtsEdge by the [Kennedy Center for the Arts](#) - a resource site for arts-integration education.

[ArtsEd Search database](#) - a great database to look at research on arts in connection to multiple aspects of education for social justice.

[Theatre of the Oppressed](#) - Augusto Boal inspired by Freire created a process theatre approach with liberatory and transformative goals. Here is a [London based group](#) that uses theatre of the oppressed to address and humanize homelessness.

Catterall, J. S. (2012) [Doing well and doing good by doing art](#). A 12-year national study of education in the visual and performing arts.

Process Drama - open, improvised, scaffolded role play in learning. Created by Dorothy Heathcote in the UK, it has been used around the world for transformative, reflexive learning. Here is a [description as used in a high school class](#) exploring the 8th Amendment. [Theatre in Education video](#) - View Time: 3:30 mins.

[10 Lessons that the Arts Teach](#) – based on work by Stanford professor, Elliot Eisner

Art “is the social technique of emotion, a tool of society which brings the most intimate and personal aspects of our being into the circle of social life” (Vygotsky 1971, p.249)

Art as social practice connects people and contexts in ways that can develop a metacognition of self and other and the social spaces and modalities that oppress or help us flourish. Maxine Greene describes the idea of “wide-awakeness” - without the ability to think about yourself, to reflect on your life, there’s really no awareness, no consciousness. Consciousness doesn’t come automatically; it comes through being alive, awake, curious, and often furious.”

Key Principles

- Disrupting fear-based, compliance cultures of schooling. Using creative processes drawn from the arts brings open exploration, contemplation, imagination and playfulness into the classroom. This necessitates a flexible learning environment and process, student autonomy, sharing, and celebration that counters fear-based, authoritarian, compliance cultures of schooling.
- Holistic and meaningful. Arts-based processes enable students to bring their whole selves into the learning space, integrating their lives, interests, and hidden talents meaningfully.
- Community. Arts based pedagogy creates community in the classroom in sharing, helping, and celebrating each other’s work, and can extend to integrating community based work that connects learners, families, and local / global communities.
- Arts as disruption and revolution. The arts give us rich examples as well as processes to interrogate and understand our lived experiences, histories, and identities, to reveal spaces of oppression and spaces of joy.
- The centrality of imagination and transformation - arts-based processes open opportunities for re-imagining the self and the self in the world. Through the arts students can build empowering narratives of who they are and are becoming.
- Voice - the multiple modalities and multiliteracies of arts based learning encourage and foster the development of each learner’s unique voice and stories, revealing them to themselves in the metacognitive, reflexive process of arts-based learning, and scaffolding them toward a full expression of who they are and are becoming.

Reflect In exploring the learning and motivation theories and pedagogies – what common themes or connections have you noticed? What “story” about teaching and learning emerges for you in seeing these connections?

In choosing your fluid pedagogy or pedagogies (whether from this list or your own) - what are your top 5 illuminating values or guiding lights that helped you make your choice?

Consider these distinctions:

- Legacy Schooling - the compliance-based, authoritarian, legacy system of education that contains, reflects, and perpetuates social-political-economic inequities in larger society.
- Justice and Future-Oriented Education - a humanized ethical practice that seeks to liberate and empower learners to flourish both in the microcosm of the classroom and in their future engagement with the world around them.

How do principles from learning science and these pedagogies support the distinction we make between legacy “schooling” and justice and future-oriented education?

Further Exploration for Learning and Motivation Theories

Maslow

- <http://www.simplypsychology.org/maslow.html> - a website for quick overviews of many psychological theories.
- Maslow, A. H. (1970). *Motivation and personality*. New York: Harper & Row.
- Maslow, A. H. (1987). *Motivation and personality (3rd ed.)*. Delhi, India: Pearson Education.
- Hale, A. J., Ricotta, D. N., Freed, J., Smith, C. C., & Huang, G. C. (2018). Adapting Maslow's Hierarchy of Needs as a framework for resident wellness. *Teaching and Learning in Medicine*, 31(1), 1–10. <https://doi.org/10.1080/10401334.2018.1456928>
- Tay, L. & Diener, E. (2011). Needs and subjective well-being around the world. *Journal of Personality and Social Psychology*, 101(2), 354-365

Carol Dweck: Mindsets

- TED Talk by Carol Dweck (2014) The Power of Believing That You Can Improve.
- Mangels, J. A.; Butterfield, B.; Lamb, J.; Good, C.; Dweck, C. (2006). Why do beliefs about intelligence influence learning success? A social cognitive neuroscience model. *Social Cognitive and Affective Neuroscience*. 1 (2): 75–86.

Edward Deci & Richard Ryan: Self-Determination Theory

- <http://www.selfdeterminationtheory.org/theory> This website has a ton of wonderful articles, videos, and links to research on SDT.

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. [Click here to access at Honnold Library](#)
- Reeve, J. (2002). *Self-determination theory applied to educational settings*. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (p. 183–203). University of Rochester Press.

Jean Piaget – Assimilation And Accommodation

- The Equilibration of Cognitive Structures: The Central Problem of Intellectual Development (Chicago: University of Chicago Press, 1985) [L'equilibration des structures cognitives (1975), previously translated as - The development of thought: Equilibration of cognitive structures (1977)].

Lev Vygotsky - Zpd

- <https://www.simplypsychology.org/vygotsky.html> - overview of Vygotsky's theory.
- Kozulin, A., Gindis, B., Ageyev, V., & Miller, S. (Eds.). (2003). *Vygotsky's Educational Theory in Cultural Context* (Learning in Doing: Social, Cognitive and Computational Perspectives). Cambridge: Cambridge University Press.
doi:10.1017/CBO9780511840975. [E-Book at Honnold Library](#)

Social Emotional Learning

- Cavanagh, S. R. (2016). *The spark of learning*. West Virginia University Press.
- Damasio, A. (2005). *Descartes error: Emotion, reason, and the human brain*. Penguin.
- Damasio, A. (2018). *The strange order of things. Life, feeling, and the making of culture*. Vintage.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). [27 pages] The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432. [Access at Honnold-Mudd Library](#)
- Immordino-Yang, M. H. (2011). Implications of affective and social neuroscience for educational theory. *Educational Philosophy and Theory*, 42(1), 98-103
- Reinert, P.M. (2019). Social-emotional learning: a model for higher education [1.5 pages], *Journal of Research in Innovative Teaching & Learning*, Vol. 12 No. 2, pp. 114-115. <https://www.emerald.com/insight/content/doi/10.1108/JRIT-02-2019-0039/full/html>
- Simmons, D. (2019). [Why we can't afford whitewashed social-emotional learning](#). ASCD.
- Quinlan, K. M. (2016). [10 pages] How emotion matters in four key relationships in teaching and learning in higher education. *College Teaching*, 64(3), 101–111. <https://ccl.on.worldcat.org/oclc/7407766091>

Martin Seligman - Perma

- Watch Martin Seligman explain PERMA https://youtu.be/iK6K_N2qe9Y [View Time: 25:05 minutes]
- Martin Seligman (2018) PERMA and the building blocks of well-being, *The Journal of Positive Psychology*, 13:4, 333-335, <https://doi.org/10.1080/17439760.2018.1437466>
- Positive Education applied in an Australian school - the Geelong Grammar School. There are some excellent pages where they describe positive education and key elements in their model and how they have applied it in teaching and learning. <https://www.ggs.vic.edu.au/School/Positive-Education/What-is-Positive-Education>
- Seligman, M. E. P. (2011). *Flourish*. New York: Simon & Schuster.
- Diener, E. (2020). Happiness: the science of subjective well-being. In R. Biswas-Diener & E. Diener (Eds), *Noba textbook series: Psychology*. Champaign, IL: DEF publishers. <http://noba.to/qnw7g32t>

Chapter 14 - Strategies for Lifelong Learning and Practice

As we near the end of the journey and complete consolidating our explorations of transdisciplinary pedagogy for ethical education, we begin taking a look ahead to new journeys. In this chapter, you will examine the interconnections or the weavings of your two journeys through the external landscapes of education and your internal landscapes of your teaching philosophy and transdisciplinary mindsets.

Transdisciplinary Mindsets for Future-Focused Transformative Education



Ethical. A deep yearning for justice in education. Awareness of legacy schooling structures and practices that perpetuate inequities and barriers to learning and flourishing. In response, designing teaching and learning to remove barriers and ensure all learners are engaged and supported in preparing to flourish in their future.

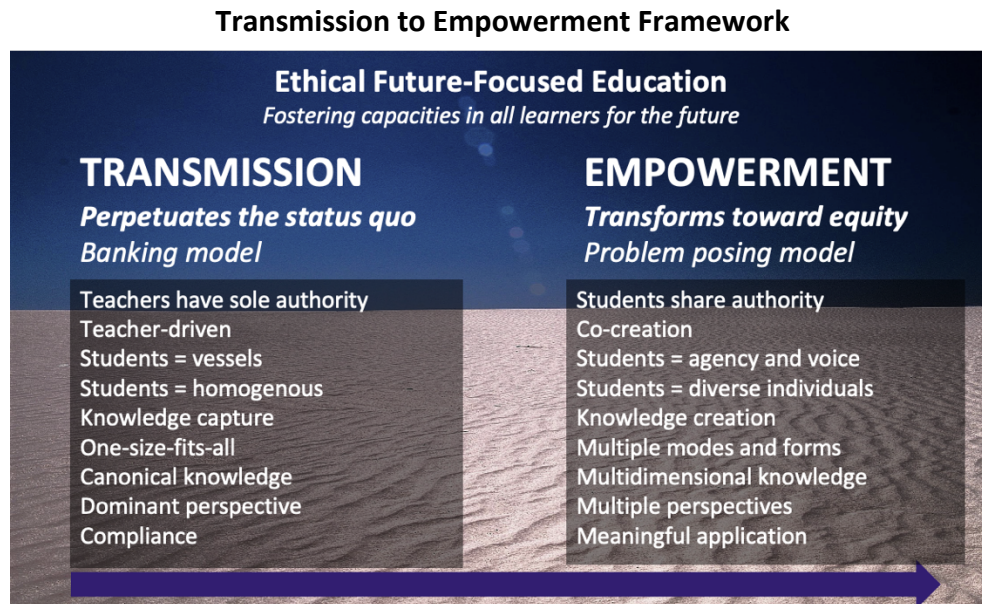
Design. A people and context focused intentional approach. Always starting with a focus on learners and their current and future contexts, the removal of barriers to success, and integrates evidence-based teaching and learning strategies and environments. Therefore, also a flexible, adaptive approach that is responsive to emerging information and opportunities.

Reflexive. Critical introspection as an on-going practice to examine assumptions, build self-knowledge, and work with a coherent, explicit value set. Critical introspection from a systems and disciplinary perspective to examine legacy assumptions and biases that are harmful or misaligned to students' future flourishing. Sustaining a living philosophy and becoming a lifelong learner.

Co-Creative. Collaboration for growth. The ability to listen with openness and curiosity to new and different ideas, to invite and engage with feedback toward growth. Developing teaching

and learning as co-creative, collaborative processes with learners, other educators, and communities.

Systems and Complexity. Embracing plurality. Working with the interconnected, non-binary, non-linear, and emergent nature of education. Engaging in complex adaptive thinking in questioning the status quo and staying open, imaginative, and creative in responding to emerging situations.



Reflect Which of these mindsets do you feel have developed the most in this course and how have they informed the values and goals that shape your teaching philosophy?

What has changed or amplified in your understanding of education, legacy education, and a justice and future-focused education? How does this inform your goals as a teacher-scholar and leader in your future practice?

Practicing into the future

As a teacher-scholar and leader, think about how the journey you began in this course can continue into your future. What can you do to ensure that you maintain a living, evolving philosophy and practice?

Read: Teaching from a Heart of Hope. Parker Palmer.

[Link to e-book at the Claremont Colleges Library](#)

This is the final chapter of Parker Palmer's book *The Courage to Teach*. It looks at a teacher's ability to persist in transformative work. As you read it, consider what practical ideas it gives you for finding community and resolve to do transformative work within and as a part of the legacy system. There are many others doing this good work ... what can you do to find and connect with them.

Explore your professional and scholarly association/s. Does it have a section devoted to teaching and learning? Or a teaching and learning journal? How might you get involved?

Explore the Scholarship of Teaching and Learning (SoTL)- SoTL is scholarship that involves faculty in doing research on student learning and sharing results with peers. Based on the work of Ernest Boyer in his landmark report in 1990, *Scholarship Redefined. Priorities of the Professoriate*, SoTL advocates that faculty bring their scholarly minds and research practices to the practice of teaching so that teaching becomes an evidence-based practice that questions and sharpens how we engage learners and support them in deep learning.

Read: [Elon University's Overview of SoTL](#).

- Do you think you might be able to engage in SoTL research?
- Explore the International Association for the Scholarship of Teaching and Learning ([ISSOTL](#))

Commitments to practice.

What 3 things will you do to ensure that you keep your practice fresh and remain energized and committed to transforming your course and classrooms?