

Transforming Education Through Emerging Educational Technologies

T-561

<https://canvas.harvard.edu/courses/18484>

Chris Dede

Chris_Dede@harvard.edu

<https://www.gse.harvard.edu/faculty/christopher-dede>

Teaching (with Technology): How Students Learn

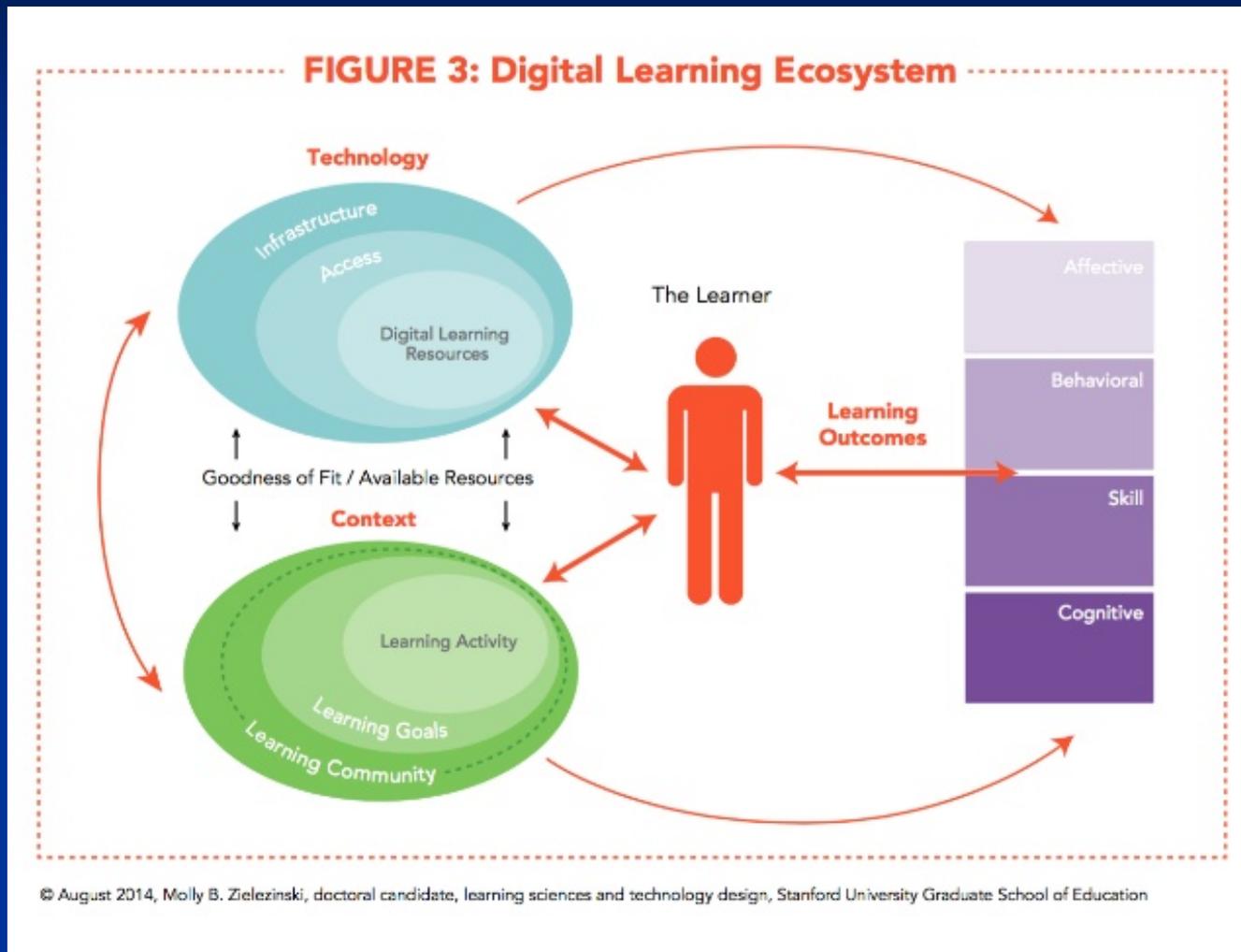
- The *learner-centered* lens encourages attention to preconceptions, and begins instruction with what students think and know.
- The *knowledge-centered* lens focuses on what is to be taught, why it is taught, and what mastery looks like.
- The *assessment-centered* lens emphasizes the need to provide frequent opportunities to **make students' thinking and learning visible as a guide** for both the teacher and the student in learning and instruction.
- The *community-centered* lens encourages a culture of questioning, respect, and risk taking. Community-centered design is depicted as an overarching lens to frame interaction within which the other three design lenses are actualized.

Teaching with Technology: Process

“Next generation” models are characterized by

- moving beyond place-based, time-based learning
- involving many types of people as “teachers” in various life-settings of students
- focusing teaching on participatory, collaborative, guided learning
- infusing deep content rapidly updated as knowledge evolves; and
- centering learning on the needs and interests of individual students (**personalization**), rather than on a curricular framework or an instructional method

The Digital Learning Ecosystem



What's missing?

Technology and (At-Risk) Students

- (At-risk) students benefit most from technology that is designed to promote high levels of interactivity and engagement with data and information in multiple forms
- Curriculum and instruction should enable students to create content as well as to learn material (*Innovating Pedagogy*)
- Technology policies should aim for one-to-one computer access with high bandwidth
- Policymakers and educators should plan for blended learning environments, characterized by significant levels of teacher support and opportunities for interactions among students, as companions to technology use (*DBIR*)

Enrichment vs Remediation

Teaching with Technology: Division of Labor

- Digitized pedagogical agents, peer mentors using social media, and informal educators remotely coordinating learning activities can accomplish some aspects of instruction, enabling teachers to extend and deepen their own activities by building on these complementary supports
(Digital Teaching Platforms)
- This creates profound shifts in what teachers do, who/what supports their instruction, what outcomes are accomplished—and how teachers themselves can unlearn their old job role and master an altered profession

BPS: Questions for Shared Reflection

- What strategies might you use to educate various stakeholders about TSJ's strategies on technology and STEM learning, and then involve them in helping TSJ succeed?
- What tactical investments would you make over the next year—and what current activities would you reduce or eliminate to fund those tactical investments?
- What kinds of measures and evidence would you use to determine if TSJ is succeeding in its mission? How would you convince stakeholders of the validity of that evaluation?
- What, if anything, would you change about TSJ's current “theory of action” about education and social justice?

Egypt: Questions for Shared Reflection

- How will you address what is an inclusion setting with special needs students, but without adequately licensed teachers? In particular, how might technology be used to individualize learning for special needs students who are not receiving adequate services?
- How might you use technology to address the bullying and gender discrimination that is prevalent among students?
- How might you get staff buy-in to make the use of educational technology more integrated into the academic curriculum?
- How might technology be used as a tool to level the playing field for Egyptian students who do not have access to full information in their daily lives, given geopolitical issues?

