



Professional Development with BSPH CTL

The Empowered Learner: Busting Myths, Building Mastery

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Learning Objectives

- ▶ Identify three common learning myths and articulate why they persist in educational settings
- ▶ Explain the evidence-based reasons why these myths are ineffective or harmful for student learning
- ▶ Design teaching strategies that replace debunked myths with research-backed practices



Learning Styles

Kinesthetic



Visual



Auditory



Reading/Writing



Session logistics

- ▶ Poll Everywhere

- ▶ How to join

- ▶ Join by Web: PollEv.com/luchi835
- ▶ Join by Text: Send **luchi835** to **22333**
- ▶ **Join by QR code:**



- ▶ Click on “**Skip for now**” when the page “**Register for credit**” shows up.
- ▶ Enter a screen name you like to use and click on the “**Continue**” button. Or you can skip this step.
- ▶ Select the response that you think is correct. You can only respond once.
- ▶ Wait for the presenter to show next question.

Poll Question #1

Students learn best when taught in their preferred learning style.



Learning Style-Reality

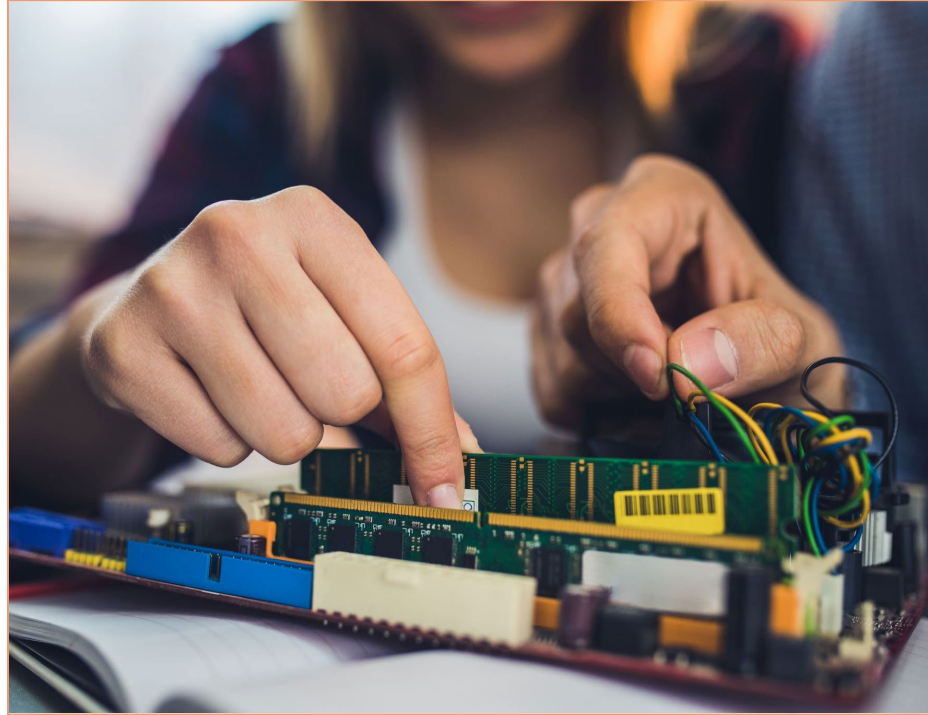
- ▶ It's a myth!
- ▶ **There is no evidence that supports teaching to a person's specified learning style results in better learning** (Alley, et. al., 2023; Cuevas, 2015; Kirschner & van Merriënboer, 2013; Krätzig & Arbuthnott, 2006; Pashler et al., 2008; Rogowsky et al., 2020).
- ▶ **Teaching to a self-identified learning style has no impact on learning in children or adults** (Krätzig & Arbuthnott, 2006; Paschler et al., 2008; Rogowsky et al., 2015, Rogowsky et al., 2020).
- ▶ **Some students performed better on tasks when taught in a different modality than their self-identified “learning style”** (Krätzig & Arbuthnott, 2006, Rogowsky et al., 2020).

Learning Style- Teaching Tips

- Universal Design for Learning
 - Design multiple means of engagement
 - **Design multiple means of representation**
 - **Design multiple means of actions & expression**

Discovery Learning

- ▶ Key Principles (Bruner, 1966)
 - ▶ Problem-Solving
 - ▶ Learner-Driven Exploration
 - ▶ Integration and Connecting Prior Knowledge
 - ▶ Scaffolding (Support and Guidance)
 - ▶ Reflection and Feedback



Poll Question #2

Students learn best when teachers let them
“discover” everything independently.



Discovery Learning - Reality

- ▶ It's a myth!
- ▶ **Minimal guidance does not work well in complex or unfamiliar domains because students often lack the foundational knowledge to successfully explore and construct understanding on their own (Mayer, 2004).**
- ▶ **Unguided or purely independent discovery often leads to confusion, frustration, and misconceptions, especially for novice learners (Kirschner, Sweller, & Clark, 2006).**
- ▶ **Guided discovery provides scaffolding, which helps students learn productively while still promoting active engagement (Alfieri et al., 2011).**

Discovery Learning - Teaching Tips

- Demonstrate a task before asking students to try it independently
- Offer timely feedback during projects to correct misconceptions
- Check in frequently and offer scaffolds, such as examples, guiding questions, templates, framework
- Move from guided practice to independent application as learners gain skills.

Learning Pressure

- ▶ Causes of pressure
 - ▶ High expectations from teachers, parents, or themselves
 - ▶ Heavy coursework
 - ▶ Poor organization and time management
 - ▶ Exams
 - ▶ Competition



Poll Question #3

Students won't perform well under excessive pressure.



Learning Pressure- Reality

- ▶ It's a truth!
- ▶ **High-pressure academic environments can impair working memory and negatively affect performance, especially for students experiencing anxiety** (Owens, Stevenson, Hadwin, & Norgate, 2012).
- ▶ **Pressure perceived as threatening (vs. motivating) reduces academic performance, especially in students with low self-efficacy** (Putwain & Daly, 2013).
- ▶ **Mild stress can enhance performance on simple or implicit tasks, while high or chronic stress often impairs explicit memory and higher-order thinking** (Sapolsky, 2004).

Sapolsky, R. M. (2004). Stress and Cognition. In M. S. Gazzaniga (Ed.), *The cognitive neurosciences* (3rd ed., pp. 1031–1042). Boston Review. Owens, M., Stevenson, J., Hadwin, J. A., & Norgate, R. (2012). Anxiety and depression in academic performance: An exploration of the mediating factors of worry and working memory. *School Psychology International*, 33(4), 433–449. <https://doi.org/10.1177/0143034311427433>

Learning Pressure- Teaching Tips

- Offer emotional and academic support (e.g., hold regular office hours or offer optional review sessions; refer students to academic support services or mental health resources.)
- Scaffold assignments to gradually build difficulty.
- Use formative assessments to provide low-stakes practice.
- Provide consistent and timely feedback to reduce uncertainty.
- Create a classroom culture where errors are part of the learning process.

Engagement

- ▶ It refers to the level of attention, curiosity, motivation, and emotional investment that students bring to their learning experiences.
- ▶ Categories (Fredricks, Blumenfeld, & Paris, 2004)
 - ▶ Behavioral
 - ▶ Emotional
 - ▶ Cognitive



Poll Question #4

Engagement doesn't equal learning.



Engagement - Reality

- ▶ It's a truth!
- ▶ **Engagement is necessary but not sufficient** for learning (Bryson & Hand, 2007).
- ▶ Only **cognitive engagement** is consistently and strongly linked to **academic achievement**. Emotional and behavioral engagement **may contribute**, but not reliably without cognitive effort (Fredricks, Blumenfeld, & Paris, 2004).
- ▶ Engagement is a **mediator** between instructional practices and outcomes—but only when it's connected to **intentional learning behaviors** (Appleton et al., 2006).

Engagement - Teaching Tips

- Align engaging activities with learning objectives
- Frequent, low-stakes checks for understanding (e.g., polls, quick writes, concept maps) help confirm whether engagement is leading to actual comprehension.
- Design learning activities that foster **cognitive and metacognitive engagement** (e.g., reflection, retrieval, elaboration)
 - Think, pair, share, and then explain how their thinking changed after the discussion
 - Ask “why” and “how” questions to challenge students to explain reasoning rather than recall facts.

Rote Memorization

- ▶ Memorize vocabulary, facts, formulas, sequences, dates, etc.
- ▶ Characteristics
 - ▶ Repetition-based
 - ▶ Surface-level learning
 - ▶ Short-term retention



Poll Question #5

Rote memorization is not needed in modern education.



Rote memorization - Reality

- ▶ It's a myth!
- ▶ **Rote memorization provides the foundational knowledge stored in long-term memory that is necessary for complex thinking and problem-solving (Willingham, 2009).**
- ▶ **It also supports comprehension by familiarizing students with essential facts and vocabulary (Beck, McKeown, & Kucan, 2002), and when combined with retrieval practice, it enhances long-term retention far more effectively than passive review (Roediger & Karpicke, 2006).**

Rote memorization - Teaching Tips

- Design active lectures with pauses for reflection or peer discussion.
- After memorizing terms or procedures, apply them in complex problems, discussions, or creative tasks.
- Spread review over days or weeks rather than cramming.

Digital Literacy

- ▶ UNESCO (2023) defines digital literacy as “the ability to access, manage, understand, integrate, communicate, evaluate, and create information safely and appropriately through digital technologies.”
- ▶ Impact (Peng, D., & Yu, Z. (2022))
 - ▶ academic performance
 - ▶ motivation



Poll Question #6

Digital natives (Gen Z) don't need training to use technology for learning.



Digital Literacy - Reality

- ▶ It's a myth!
- ▶ **Comfort with social media ≠ ability to use tech for research, critical thinking, or ethical AI use** (Kirschner & De Bruyckere, 2017).
- ▶ **While students were confident in basic technologies, they lacked skills in advanced tools like data analysis, academic research databases, or content creation platforms** (Bennett, Maton, & Kervin, 2008).

Kirschner, P. A., & De Bruyckere, P. (2017). The myths of the digital native and the multitasker. *Teaching and Teacher Education*, 67, 135–142. <https://doi.org/10.1016/j.tate.2017.06.001> Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775–786. <https://doi.org/10.1111/j.1467-8535.2007.00793.x>

Digital Literacy - Teaching Tips

- Use short surveys or self-assessments to identify students' skill gaps.
- Scaffold digital skills
 - Provide checklists and tutorials for tech-based tasks like uploading assignments or creating portfolios
- Model use of digital tools in lectures or assignments.
- Integrate AI ethics discussions into assignments (e.g., “When is ChatGPT appropriate?”).

Scenario 1

- ▶ "I believe students learn best when they take ownership of their learning. So, in my course, I avoid giving too much direction—I let them figure out solutions on their own through open-ended projects and discussions. I also try to cater to their learning styles. If someone says they're a visual learner, I encourage them to create diagrams instead of writing papers. The goal is to personalize everything and let them lead."
- ▶ What might be the unintended consequences of minimal guidance and learning style personalization?

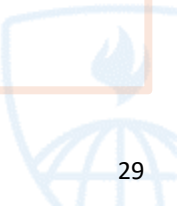


Scenario 2

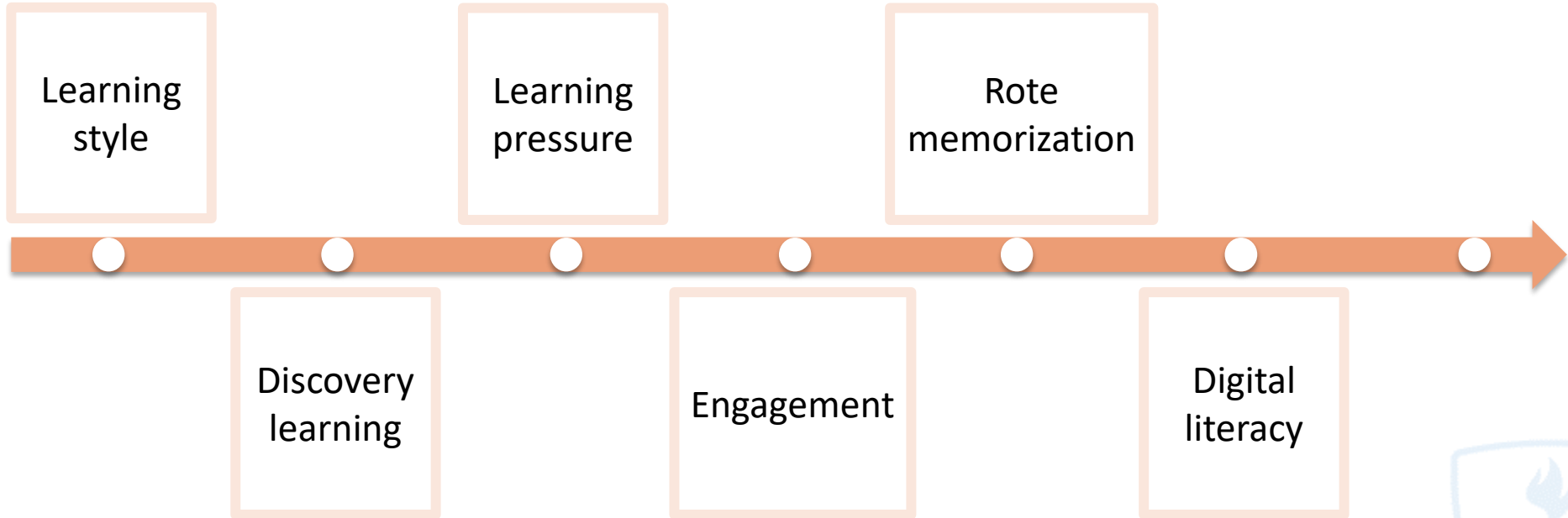


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- ▶ "I've noticed my students seem unmotivated and disengaged. I'm thinking of adding some high-stakes assessments and shortening deadlines to give them a 'real-world' sense of urgency. Maybe the pressure will push them to take the course more seriously."
- ▶ What evidence-based strategies could help motivate students without overwhelming them?



Summary



Continuing Professional Development with CTL

Essentials of Course
Design,
Development, and
Teaching at BSPH

Teaching
Assistantship
Training

Workshops, On-
demand Videos, and
Blog

Anonymous, 2- Minute Workshop Evaluation

2025 Workshop Evaluation Form: <https://forms.office.com/r/YmXFUqRCAd>

