Active Learning and Student Engagement

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Your tasks while watching this video

- Consider how you can use the frameworks to go beyond 'delivering content' when teaching

- Think about possible active cognitive tasks to help your students learn

What is Active Learning?

- Chickering, A. W., Gamson, Z. F., Poulsen, S. J., & Johnson Foundation (Racine, Wis.). (1987). *Seven principles for good practice in undergraduate education*. Racine, WI: Johnson Foundation.

3. Uses Active Learning Techniques -
Learning is not a spectator sport. Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must **talk** about what they are learning, **write** about it, relate it to past experiences, **apply** it to their daily lives.

What is Active Learning?

- Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. Washington, D.C: School of Education and Human Development, George Washington University.

Students must engage in such **higher-order thinking tasks** as analysis, synthesis, and evaluation. Within this context, it is proposed that strategies promoting active learning be defined as instructional activities involving students in **doing things and thinking about what they are doing**.

Active learning is when students carry out an

Active Cognitive Task (ACT)

Active Cognitive tasks

Active
- Active, not passive
- Students own the learning process
- Mutual trust and student agency

Cognitive
- Not just doing but thinking
- Construct mental schemas by reinforcing connections
- Meaningful long-term memory
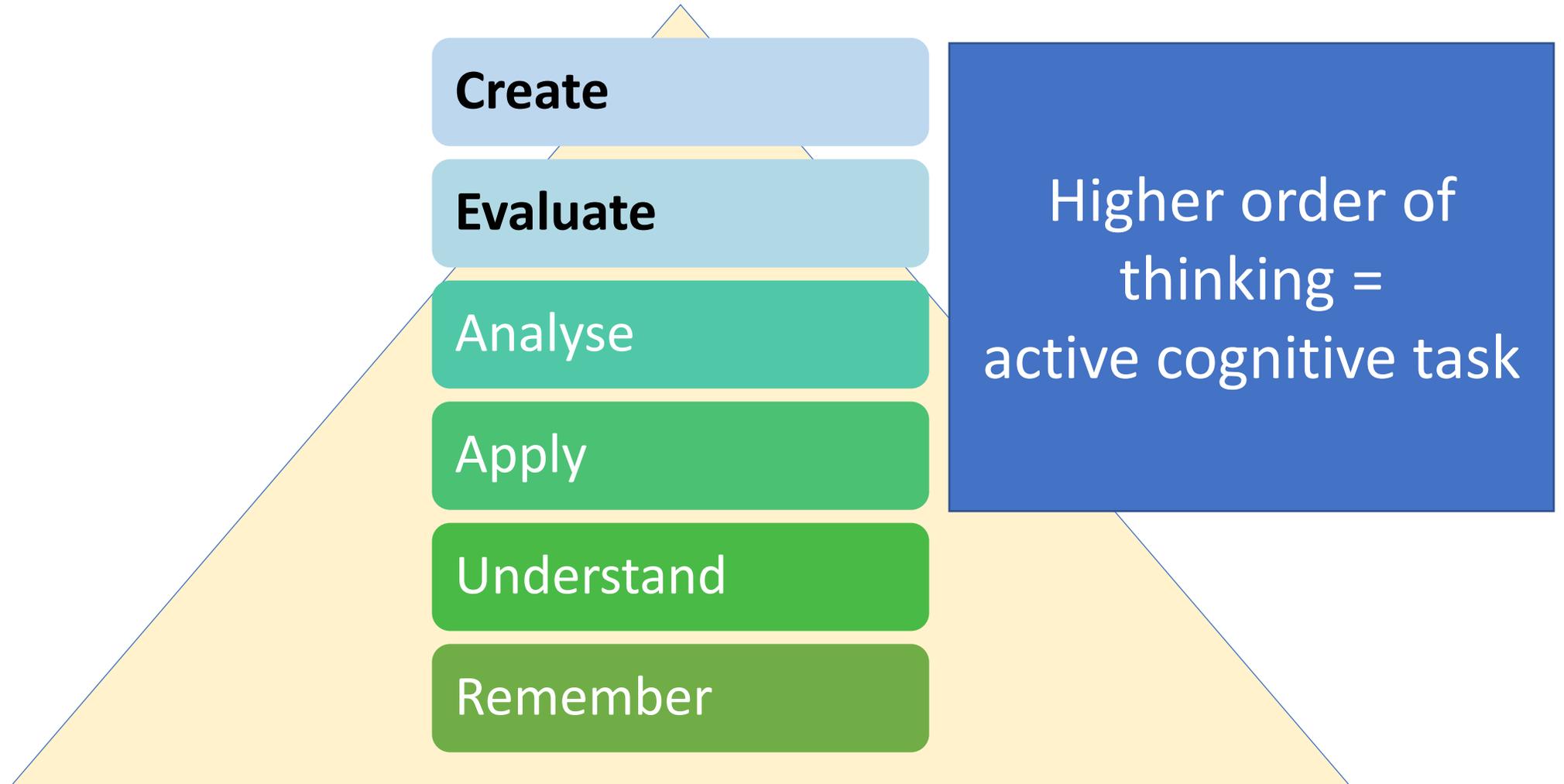- 'Effortful learning' (Brown et al, 2014) or 'Desirable difficulty' (Bjork, 1994)

Task
- Carry out a task
- Not just absorb information or perform an operation by rote
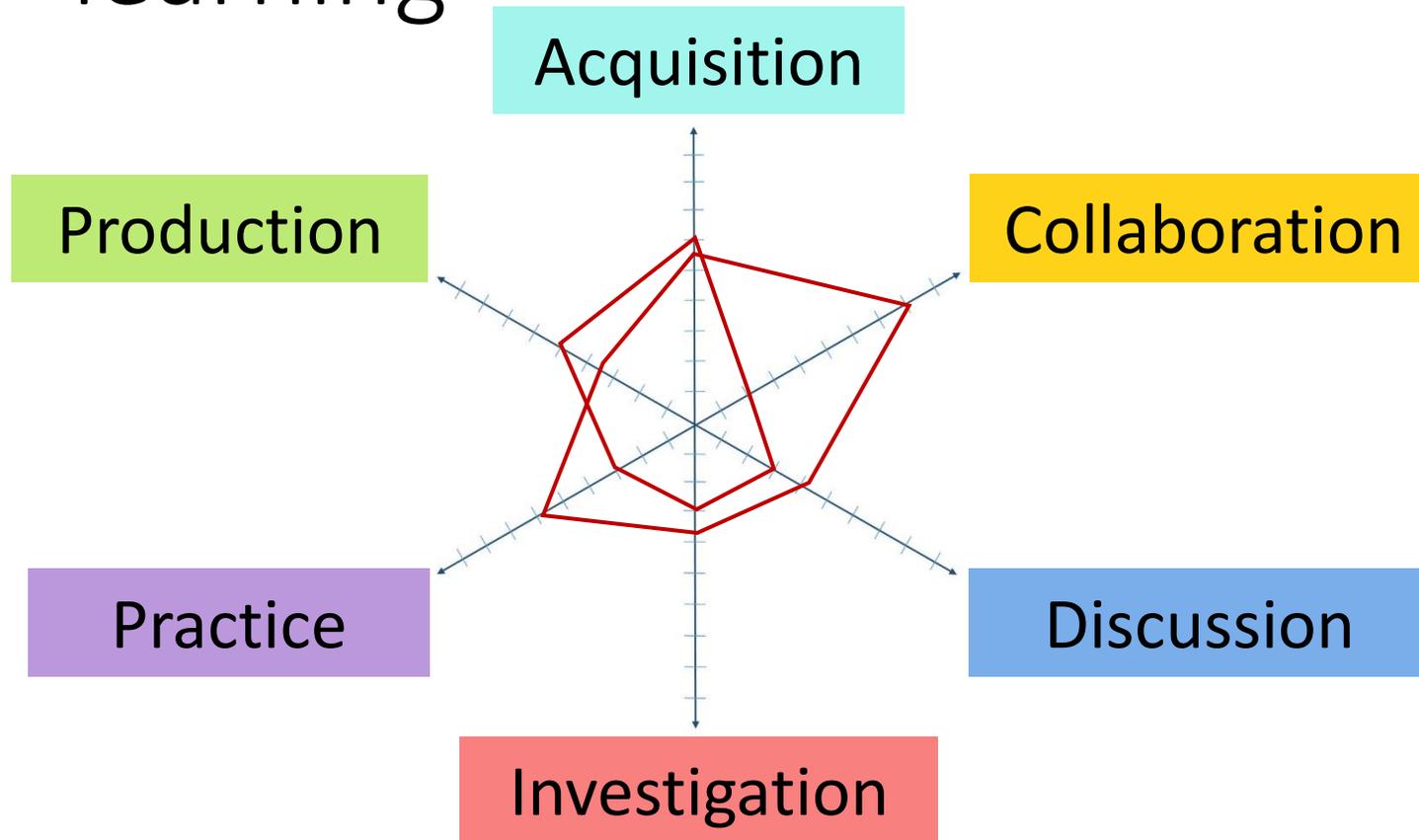- Not the content but what they do with it that matters

Mary Jacob, 'Active Cognitive Tasks: Synthesising frameworks for active learning online', in *Active Learning in Higher Education*, edited by Wendy Garnham and Isobel Gowers. Forthcoming.

Make it active - ICAP

	Interactive	Constructive	Active	Passive
Characteristics	Dialogue with other students or teacher	Produce output beyond given information, discovery learning	Do something, often physical	Receive given information
Overt activities	**Instructional dialogue or joint dialogue:** revise errors from feedback, or build on partner's contribution	**Self-construction activities:** explain, elaborate, concept map, plan/predict outcomes	**Engaging activities:** underline, point, paraphrase, manipulate objects, select, repeat	**No activities:** Listen, read, or watch without an associated cognitive task
Cognitive processes	**Creating jointly:** create while incorporating partner's contributions	**Creating individually:** infer new knowledge, integrate new with existing knowledge, restructure own mental model	**Attending:** activate existing knowledge, store new information	**Receiving:**

Chi, M. T. H. (2009). Active-Constructive-Interactive: A Conceptual Framework for Differentiating Learning Activities. *Topics in Cognitive Science*, 1, 1, 73-105.

Make it cognitive - Bloom's taxonomy

Create

Evaluate

Analyse

Apply

Understand

Remember

Higher order of thinking = active cognitive task

Based on Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J. D., ... Bloom, B. S. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of educational objectives*. New York: Addison-Wesley.

Make it a task - ABC Learning Design types of learning

Acquisition

Production

Collaboration

Practice

Discussion

Investigation

3- minute video from Diana Laurillard

Except acquisition, all are necessarily active

Young, C. & Perović, N. (2016). Rapid and Creative Course Design: As Easy as ABC?, *Social and Behavioral Sciences* 228, Pages 390-395.
Laurillard, D. (2012). *Teaching as a design science: Building pedagogical patterns for learning and technology*. New York, NY: Routledge.

ABC Learning Design - Acquisition

Acquisition

Learning through acquisition is what learners are doing when they are listening to a lecture or podcast, reading from books or websites, and watching demos or videos

Acquisition

Conventional method	Digital technology
☐ reading books, papers	☐ reading multimedia, websites, digital documents and resources
☐ listening to teacher presentations face-to-face, lectures	☐ listening to podcasts, webcasts
☐ watching demonstrations, master classes	☐ watching animations, videos
☐	☐
☐	☐
☐	☐

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ABC Learning Design – Investigation

Investigation

Learning through investigation guides the learner to explore, compare and critique the texts, documents and resources that reflect the concepts and ideas being taught

Investigation

Conventional method	Digital technology
☐ using text-based study guides	☐ using online advice and guidance
☐ analysing the ideas and information in a range of materials and resources	☐ analysing the ideas and information in a range of digital resources
☐ using conventional methods to collect and analyse data	☐ using digital tools to collect and analyse data
☐ comparing texts	☐ comparing digital texts
☐ searching and evaluating information and ideas	☐ using digital tools for searching and evaluating information and ideas
☐	☐
☐	☐
☐	☐

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ABC Learning Design - Discussion

Discussion

Learning through discussion requires the learner to articulate their ideas and questions, and to challenge and respond to the ideas and questions from the teacher, and/or from their peers

Discussion

Conventional method	Digital technology
☐ tutorials	☐ online tutorials
☐ seminars	☐ seminars
☐ discussion groups	☐ email discussions
☐ class discussions	☐ discussion groups
☐	☐ discussion forums
☐	☐ web-conferencing tools
☐	synchronous and asynchronous
	☐
	☐
	☐

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ABC Learning Design - Collaboration

Collaboration

Learning through collaboration embraces mainly discussion, practice, and production. Building on investigations and acquisition it is about taking part in the process of knowledge building itself

Collaboration

Conventional method	Digital technology
☐ small group project	☐ small group projects using online forums, wikis, chat rooms, etc. for discussing others' outputs
☐ discussing others' outputs	
☐ building joint output	☐ building a joint digital output
☐	☐
☐	☐
☐	☐

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ABC Learning Design - Practice

Practice

Learning through practice enables the learner to adapt their actions to the task goal, and use the feedback to improve their next action. Feedback may come from self-reflection, from peers, from the teacher, or from the activity itself, if it shows them how to improve the result of their action in relation to the goal

Practice

Conventional method	Digital technology
☐ practising exercises	☐ using models
☐ doing practice-based projects	☐ simulations
☐ labs	☐ microworlds
☐ field trips	☐ virtual labs and field trips
☐ face-to-face role-play activities	☐ online role play activities
☐	☐
☐	☐
☐	☐

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ABC Learning Design - Production

Production

Learning through production is the way the teacher motivates the learner to consolidate what they have learned by articulating their current conceptual understanding and how they used it in practice

Production

Conventional method	Digital technology
producing articulations using:	☐ producing and storing digital documents
☐ statements	☐ representations of designs
☐ essays	☐ performances, artefacts
☐ reports	☐ animations
☐ accounts	☐ models
☐ designs	☐ resources
☐ performances	☐ slideshows
☐ artefacts	☐ photos
☐ animations	☐ videos
☐ models	☐ blogs
☐ videos	☐ e-portfolios.
☐	☐
☐	☐

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Mapping ABC, ICAP, and Bloom

There is more than one 'right' answer.

ABC Learning Design	ICAP	Bloom's taxonomy
Acquisition	Passive?	Remember
Collaboration	Interactive	depends on task
Investigation	Constructive	Evaluate
Discussion	Interactive	Understand
Practice	Active	Apply
Production	Constructive	Create

Online engagement framework for HE

Redmond, P., Heffernan, A., Abawi, L., Brown, A., & Henderson, R. (2018). An Online Engagement Framework for Higher Education. *Online Learning*, *22*(1), 183–204.
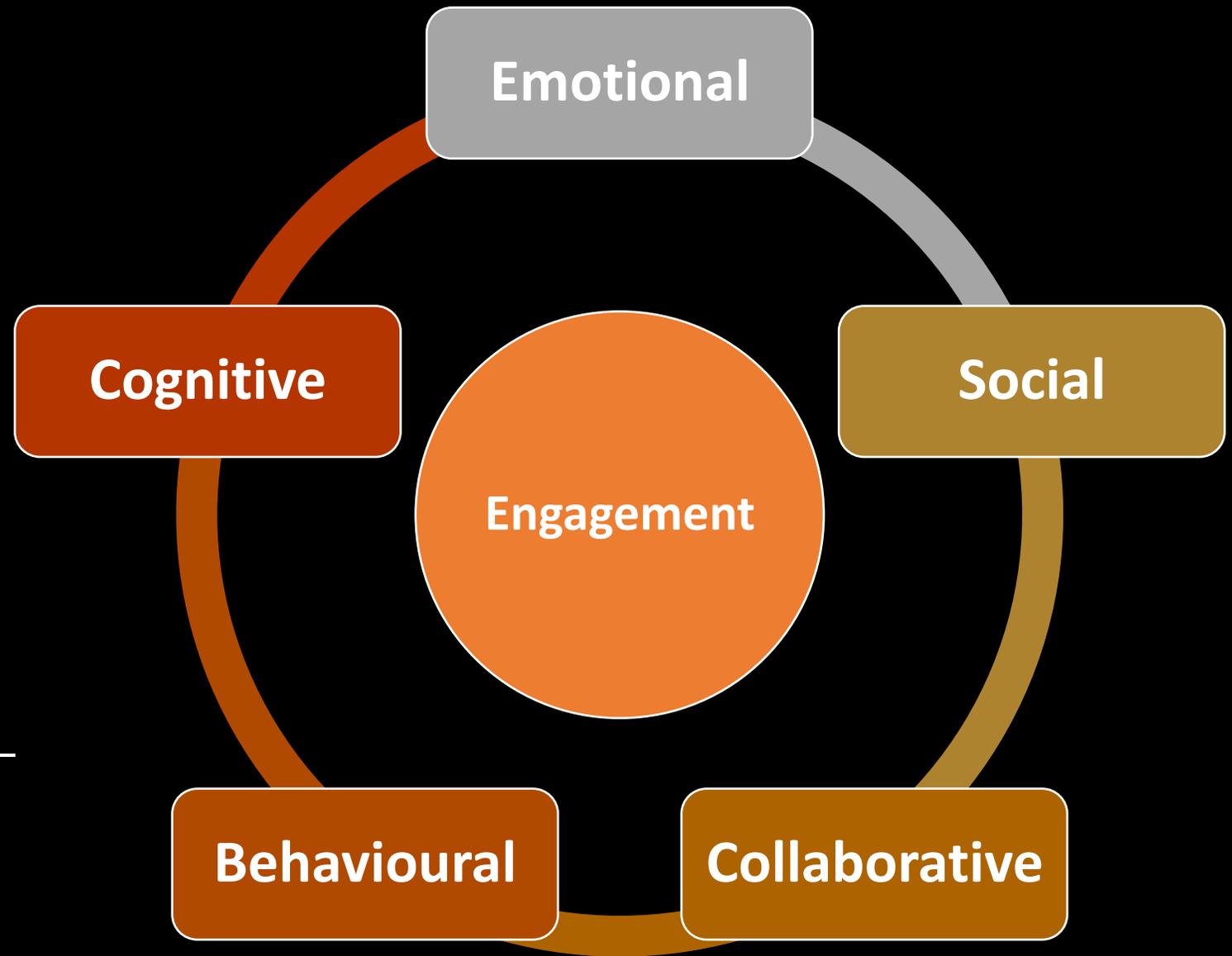
Turn passive into active learning with ACTs

Watch video or lecture
- Define key terms in your own words
- Find real-world examples
- Link new ideas to prior knowledge

Read an article or chapter
- Evaluate the argument, does evidence support conclusions?
- How you would apply the new ideas in practice?
- How does the new theory fit in with ones you have already learned?

Key message

Have students do an **active cognitive task** – not just passively absorb information.