Organizing Remote Instruction Lessons in the 5E Learning Cycle Using Engagement Activities
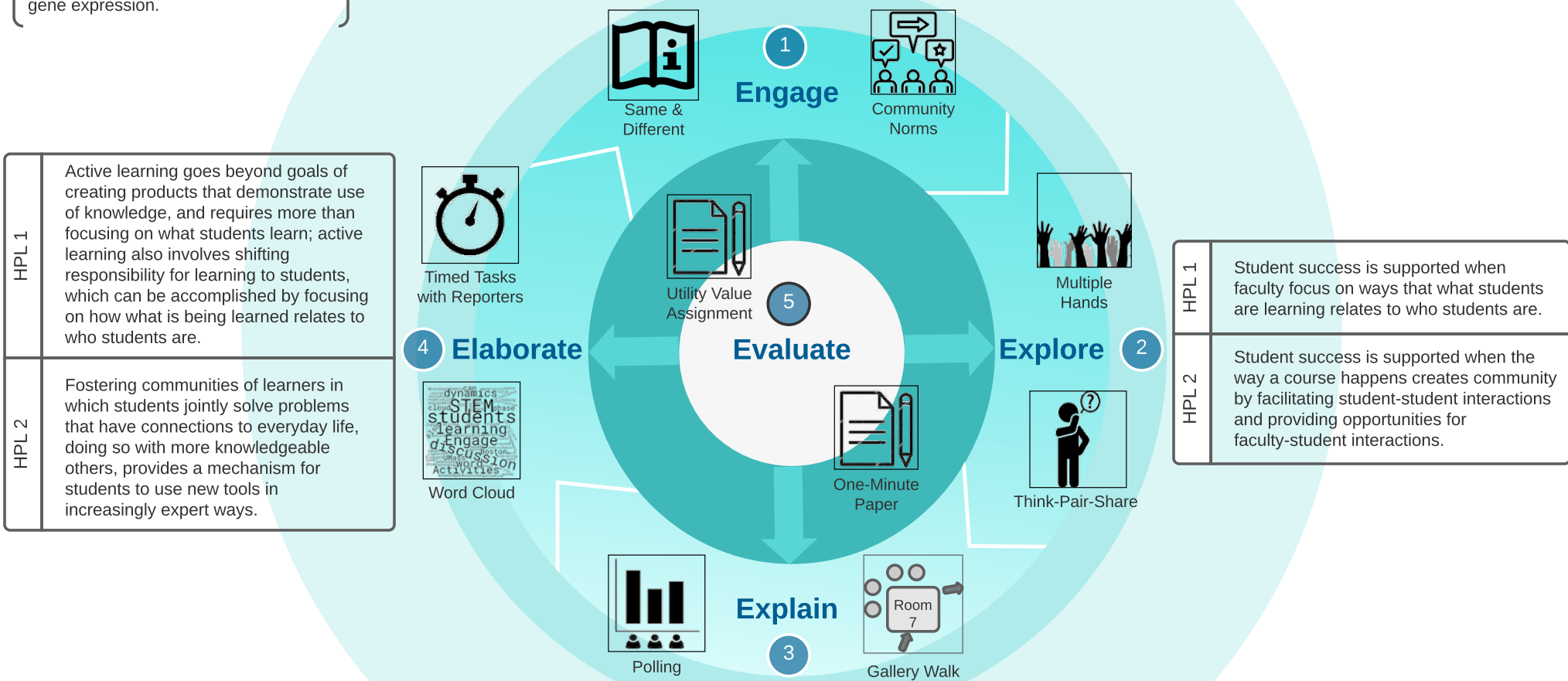
Guidance in using the 5E model for planning university STEM courses:
* Tanner (2017), Order matters: Using the 5E model.
* Idsardi et al. (2019). Modifying undergraduate intro science lessons using the 5E model.
* Cupillari (2015), Example 5E lesson in first-semester calculus.
* Withers (2016). Example 5E lesson on gene expression.

HPL 1 — Student success is supported when faculty pay attention to knowledge and beliefs that learners bring to a task. Use these as starting points for new material.

HPL 2 — Student success is supported when opportunities to learn give students ways to honor, use, and adapt cultural practices of their own (linguistic, relational, etc.) to make sense of what they are learning.

Icons refer to engagement activities from the STEM EDX workshops. Summary of these is available here.

HPL 1 — Active learning goes beyond goals of creating products that demonstrate use of knowledge, and requires more than focusing on what students learn; active learning also involves shifting responsibility for learning to students, which can be accomplished by focusing on how what is being learned relates to who students are.

HPL 2 — Fostering communities of learners in which students jointly solve problems that have connections to everyday life, doing so with more knowledgeable others, provides a mechanism for students to use new tools in increasingly expert ways.

Same & Different

Community Norms

1 Engage

Timed Tasks with Reporters

Word Cloud

4 Elaborate

Utility Value Assignment

5 Evaluate

Multiple Hands

Think-Pair-Share

Explore 2

One-Minute Paper

Polling

Gallery Walk

Room 7

Explain 3

HPL 1 — Student success is supported when faculty focus on ways that what students are learning relates to who students are.

HPL 2 — Student success is supported when the way a course happens creates community by facilitating student-student interactions and providing opportunities for faculty-student interactions.

HPL 1 — The meaning of "knowing" has shifted from being able to remember and repeat information to being able to find and use it.

HPL 2 — More knowledgeable others can include faculty, TAs, or more advanced students (e.g., learning assistants), or can be members of student groups when group membership is carefully selected and structure/norms for interactions are given.

HPL1 = *How People Learn: Brain, Mind, Experience, and School*, pp. 3-14, see link
HPL2 = *How People Learn II: Learners, Contexts, and Cultures*, pp. 21-27, see link

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