HERA stands for Holistic Educational Resources and Assessment System

What is HERA?
HERA is a model for learning scientific thinking skills in an easy and engaging way; based on research in gamification and engagement theory.

✓ Research-based prototype
✓ Bridging assessment & learning
✓ Variety of difficulty levels
✓ Adaptive Learning scaffolds and algorithm

What makes HERA different?
HERA is based on an expansion of the ECD framework (e-ECD), ACT’s holistic framework, and Next Generation Science Standards (NGSS).

Each lesson combines a PhET simulation with 10 learning scaffolded items. Two lessons will include a final performance task. This involves the student making a prediction, testing it out with the simulation, and applying the concepts learned to a new situation.

The vision involves an adaptive algorithm that will provide students with easier or more difficult lessons based on their performance in the system.

There are three key benefits to students using HERA within its features:

➢ Practice with Simulation
  ○ Learning by doing, constructivist/activist learning principles, introduction to content, familiarity, allows exploration, not scored, helps students develop their scientific reasoning skills

➢ Learning Scaffolded Items
  ○ Personalized and supportive learning, three levels of metacognitive scaffolds unique in the marketplace.
    • First attempt – looks like a regular test item. After incorrect response:
      • Rephrase → try again; Break it down → try again Teach me → try again; Skip

➢ Engaging Format
  ○ Promotes STEM and inclusion, aligned to NGSS in assessing both practices/skills, flexible application in lesson planning, adaptive potential, elicits curiosity via scientific phenomena, and uses a variety of item types and performance tasks.

HERA User Experience Research:
✓ Spring 2019, ACT conducted focus groups with 10 middle-school science teachers across the U.S., updated the design using wireframe software, and conducted usability testing with six middle school students in Iowa City.
✓ March 2020 – May 2020, ACT will be conduct user testing of the prototype in classrooms across the U.S. and establish a team of students for user experience feedback to guide our improvements.

Additional Resources:
For additional information regarding HERA please visit www.actnext.org website or contact Yigal Rosen, Sr. Director – Learning Solutions at ACT by emailing yigal.rosen@act.org.