# The "How People Learn" Framework and the *STAR Legacy* Inquiry Cycle

How People Learn

The "How People Learn" (HPL) theory offers classroom approaches that are different from the methods of instruction and assessment traditionally used in classrooms. Using the theory as their guide, John Bransford and his colleagues developed the HPL framework as a way to organize thinking about the design of effective learning environments. The HPL framework highlights four overlapping lenses that can be used to analyze and enhance any learning situation (Bransford, Brown, & Cocking, 1999). Harris, Bransford, and Brophy (2002) describe these four lenses:

- *Learner centeredness* – Instruction is tailored, based on a consideration of learners' prior knowledge as well as their previous experiences, misconceptions, and preconceptions.

- *Knowledge centeredness* – Rigorous content is provided and students are helped to understand the material rather than simply to memorize it. This has implications for how instruction needs to be sequenced in order to support the comprehension and use of said knowledge in new situations.

- *Assessment centeredness* – Frequent opportunities for monitoring students' progress toward the learning goals are provided and the results fed back to instructors and learners.

- *Community centered* – There is recognition that students are members of multiple communities (e.g., classroom, professional organizations) and that these communities offer opportunities for students and instructors to share and to learn from each other.
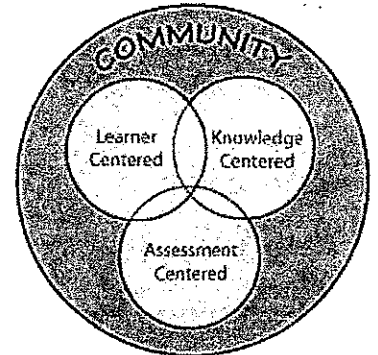
STAR Legacy

Many instructors find it difficult to balance all four of the HPL lenses. For example, an instructor may successfully create a knowledge centered learning environment but find creating a learner centered one more challenging. At times, a sense of community might not be sufficiently promoted. Many environments also lack opportunities for frequent assessment and revision. In response to this difficulty, the *STAR* (Software Technology for Action and Reflection) *Legacy* model was designed to help introduce and balance the features of learner, knowledge, assessment, and community centeredness for instructional settings. This model uses an inquiry cycle that anchors learning, is easy to understand, and is pedagogically sound. The cycle is composed of five parts that have been repeatedly recognized in educational research as important, yet often implicit, components of learning (Schwartz et al., 1999). IRIS *STAR Legacy* Modules incorporate these five components, balancing the four HPL lenses.
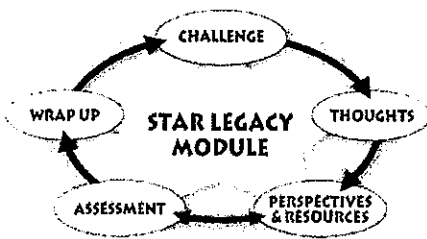
- *Challenge* – Modules are organized around case-based scenarios. Research shows that effective instruction often begins with an engaging scenario or challenge to introduce the lesson and invite student inquiry (Barron et al., 1998; CTGV, 1997; Duffy & Cunningham, 1996; NRC, 2000; Kolodner, 1997; Reiser et al., 2001; Williams, 1992).

- *Initial Thoughts* – Students then generate their own ideas in order to explore what they currently know about the challenge. Discovering the extent of students' prior knowledge and experiences regarding the problem- or case-based scenarios—and building upon that knowledge—is a means through which to enhance learning. This can be particularly true for students from culturally diverse backgrounds, who often struggle to learn content in ways that are antithetical to their learning styles (Cobb, 2001).

- *Perspectives and Resources* – Next, students access resources relevant to the challenge. These resources are presented as nuggets of information and may include text, interviews with experts, movies, and interactive activities. These resources often provide "ah ha!" experiences when the students learn about points that they did not initially consider.

- *Assessment* – Students eventually receive assessment opportunities to apply what they know, with the opportunity to return to the Perspectives and Resources section if needed.

- *Wrap Up* – The cycle then concludes with a summary and an opportunity for the student to review his or her Final Thoughts (which are the same questions asked in the Initial Thoughts section of the module). Learning is considered to have occurred when there is disparity between initial and final thoughts, with greater disparity indicating greater learning (e.g., Bransford, 1979; Schwartz & Bransford, 1998).

Research Findings

Research concerning the effectiveness of HPL and *STAR Legacy* has demonstrated positive outcomes in college classrooms. Roselli and Brophy (2003) found that in an undergraduate biomechanics course students rated modules quite positively in terms of effectively communicating key concepts and stimulating interest. In addition, systematic and structured observations of a sample of class sessions were compared for sections that relied on traditional taxonomy-based instruction versus the HPL strategy; the latter included more learner-centered, knowledge-centered, assessment-centered, and community-centered behaviors by both the instructor and students. Using a scale of 1 (low) to 5 (high), 69.7% of the students in the "HPL courses" rated communications effectiveness as a 4 or 5, compared to only 33.6% of students in the traditional courses (see graphs below). Fifty-seven percent of the students in the HPL course gave ratings of 4 or 5 for stimulating interest versus 26% of students in the traditional course. Both the course (53.1% vs. 23.7%) and the instructor (69.7% vs. 37.6%) were judged more favorably (i.e., received higher percentages of 4 and 5 ratings) by students in their final course evaluations.

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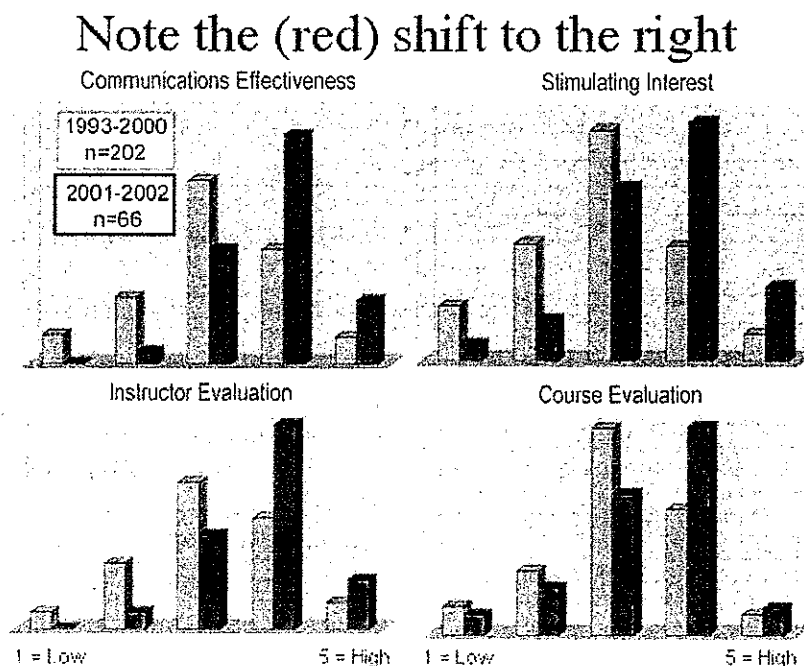
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