While limited mentor studies have been conducted before, yielding uncertain results, the LASR program has combined the informal "maker space movement" labs with the future employment KSA inventory related to the massive growth prediction of Land.Air.Sea Robotics (LASR) as the main body of knowledge that learners will be attracted to in a STEM-related program. Simply put, the learners see a cool topic in an immersive setting – and through mentoring create tangible products using KSA they gained in the program. This makes the connection to "why learn these things" early and often, increasing their chances of completing their education and gaining meaningful employment.

It's critical that all educational institutions market themselves as being able to guide a student through the process and towards self-fulfilling employment. The attraction is the LASR body of knowledge and the immersive hands-on program structure, the guidance is delivered through mentors.

Common Immersive Learning Techniques Derived From Constructivist Learning Theory

METHOD	"WHAT" PEDAGOGY	"HOW" PEDAGOGY	METHODS
Constructivist Approach to Learning	Primary	Not Facilitated Mentor or Self Directed	● Domain Independent ● Body of Knowledge Independent
Active Learning	Primary	Facilitated Team	● Domain Dependent ● Body of Knowledge Independent
Applied Learning	Primary	Not Facilitated	● Problem Dependent ● Body of Knowledge Dependent
Inquiry-based Learning	Primary	Facilitated	● Domain Dependent ● Body of Knowledge Dependent

Modernized to support the use of computing technology in the 1990s, the most popular adaptation of the constructivist approach is still active learning. It's popular because it reduces the role of the teacher in lecture, and increases the role as a facilitator – thereby providing a motivational break in teaching. Students favor this approach since it can be seen as a low-risk class engagement, given it is nearly impossible to grade an informal discussion, and the class interaction is team-based in many cases.

In a 2012 report titled "Engage to Excel" [1] the United States President's Council of Advisors on Science and Technology (PCAST) described how improved teaching methods, including engaging students in active learning, will increase student retention and improve performance in STEM courses. One study described in the report found that students in traditional lecture courses were twice as likely to leave engineering and three times as likely to drop out of college entirely compared with students taught using active learning techniques. In another cited study, students in a physics class that used active learning methods learned twice as much as those taught in a traditional class, as measured by test results.

In STEM education, the body of knowledge and the scientific method pre-suppose the notion that there are correct techniques for identifying, scaling, and resolving problems. Constructivist's would agree that is the basis of the assessment, but stop short of critiquing and assessment the method with regard to time or failed attempts. All four of these approaches have their roots in Piaget's work.

The core theory in all of these approaches is that "what" you learn is more important than "how" which creates problems for systematic learning environments. Time matters, since it drives costs and could lead to negative learning, so improvements in Constructivism now include Applied Learning; Active Learning; Inquiry-Based Learning.

[1] Executive Office of the President. President's Council of Advisors on Science and Technology, ENGAGE TO EXCEL: PRODUCING ONE MILLION ADDITIONAL COLLEGE GRADUATES WITH DEGREES IN SCIENCE, TECHNOLOGY, FEB 2012