



Analytics

Case Study

#### ICF Advantage

**Trusted:** ICF has successfully supported the U.S. Army Research Laboratory and US Army Research Institute in support of advanced training, simulation, and other human-centered initiatives.

**Adaptable and Responsive:** We work diligently to understand fully the objectives and learning and research objectives of each client's program.

**Timely:** Our large, highly qualified team of scientists has the right training and experience for this work, allowing us to come up to speed quickly. We rapidly deploy an appropriately tailored team to meet advanced learning, research and technology objectives.

## U.S. Army Counts on Data Analytics from ICF

### Supporting an adaptive training mission with a big impact on the future of learning

#### Needs

The US Army is faced with a new set of challenges; the operational environment is complex, dynamic and often difficult to navigate. The warfighter must be quick to adapt and size up challenges that keep pace with the scale and complexity of today's operational environment. A key ingredient **for advancing and transforming the state of learning is data analysis, specifically tracking learner performance in the classroom and in the field.** New advances in analytics, organizational research, big data, and intelligent tutoring generate information that can better inform U.S. Army learning, in a 24/7 anytime, anywhere training environment. At ICF, our team provides expertise in research-based learning methods that can improve performance, readiness, and affordability.

#### Solution

In support of the U.S. Army Research Laboratory mission to design adaptable and scalable learning systems, ICF developed a prototype framework called the Continuous Learning and Analytics Resource (CLEAR) model. CLEAR provides reporting results in plain language to course administrators and instructors, while allowing researchers to export detailed results for more complex analysis. The framework is designed as a fully extensible open source toolkit and is interoperable with simulation and training technologies via xAPI.

CLEAR also includes a data modeling tool that can simulate a course, group of courses, learners (with profiles), and learning methods. Prior to launching new courses or changing an existing course, instructors can use this tool to build a simulated environment, and test learning results within the CLEAR framework. These data can be used to develop benchmarks and baselines in order to evaluate performance, validate evaluation methods, and predict future performance.

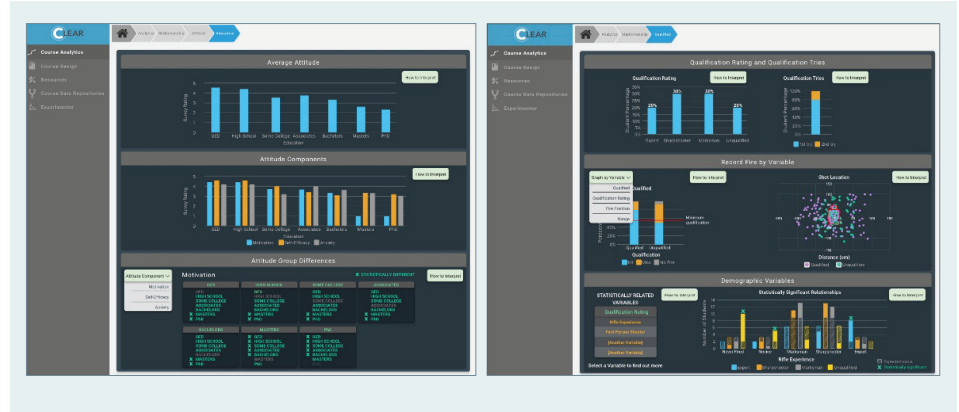


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## About ICF

ICF (NASDAQ:ICFI) is a global consulting and technology services provider with more than 5,000 professionals focused on making big things possible for our clients. We are business analysts, policy specialists, technologists, researchers, digital strategists, social scientists and creatives. Since 1969, government and commercial clients have worked with ICF to overcome their toughest challenges on issues that matter profoundly to their success. Come engage with us at [icf.com](http://icf.com).

## CLEAR Visualization Dashboard



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## Analytics for the Generalized Intelligent Framework for Tutoring (GIFT)

U.S. Army Research Laboratories are incorporating ICF's learning analytics into existing work, and is developing prototype applications as part of their Intelligent Tutoring system. The benefits of ICF's expert analytics are significant and include:

**Helps to predict learners' performance**—One of the most significant benefits of the learning analytics model is its ability to provide insight into not only how a learner is performing today, but also about their future performance throughout the duration of an organization's lifetime. For example, online facilitators may determine that a particular learner is likely not to pass a course or that the learner is likely to pass with additional support such as further practice or tutoring sessions.

**Helps to improve future learning courses**—Learning analytics help both current and future learners. For instance, if the data show that many learners are finding a particular aspect of the learning course too challenging, then the developer can change the difficulty level of that specific learning module. Such changes lead to more powerful learning environments tomorrow.

**Boost in cost-efficiency and return on investment**—Higher quality learning occurs at a lower cost through an in-depth understanding of how the learning courses and their respective resources are being used, how learners are actually acquiring information, and which aspects of the learning course are successful or falling short. For example, through analytics, a developer can determine that a section of a course is not helping learners achieve their learning goals. The developer can devote resources to improving that section or focus on another area that may be a more worthwhile investment.

