



OCI

# RESEARCH BRIEF

## What Type of Culture Supports Agile?

# ARTICLE SUMMARY

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## Establishing an Agile Mindset and Culture for Workforce Preparedness: A Baseline Study

**Gerald C. Gannod, Willam F. Eberle, Douglas A. Talbert, Robert A. Cooke, Kathy Hagler, Kathy Opp, & Jasmin Baniya (2018)**

INSTRUMENTS USED: ORGANIZATIONAL CULTURE INVENTORY® (OCI®), ORGANIZATIONAL CULTURE INVENTORY® - IDEAL(OCI®)

### The Study:

Agile Development methods were originally designed to help software development teams more effectively adapt to complexity and uncertainty as they try to move toward a desired future. The values and principles specified by the Agile Manifesto for Software Development emphasize teamwork, communication, iterative reflection, and adaptation. Since its creation, Agile has been used by teams in various industries. This research investigates the type of culture that would be ideal to support an Agile mindset and demonstrates how one organization used it to provide a baseline for change.

### Research

Experts in Agile were asked to complete the *Organizational Culture Inventory® - Ideal* based on Agile principles. In addition, the faculty, staff, and students of a university computer science department at Tennessee Tech completed the *Organizational Culture Inventory®* by describing the department's current operating culture.

### Findings

According to subject matter experts, the ideal culture to support Agile is one that is strongly Constructive—particularly Achievement, Self-Actualizing and Humanistic-Encouraging (all above the 90<sup>th</sup> percentile)—and moderately Oppositional (slightly below the 50<sup>th</sup> percentile). In contrast, the department's current culture was described by students as Aggressive/Defensive, while faculty and staff indicated that Passive/Defensive norms were emphasized. Additional differences were found for specific student cohorts (e.g., female freshman versus female junior/senior).

### Implications:

Agile methods are best supported by a strong Constructive culture. The OCI provides the means by which organizations can:

- a) determine whether their current culture aligns with a Constructive Ideal;
- b) identify subcultures; and
- c) provide a baseline for guiding and evaluating strategic efforts to transition toward a culture that better supports and encourages an Agile mindset.

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**Summary based on:** Gannod, G., Eberle, W., Talbert, D., Cooke, R. A., Hagler, K., Opp, K. & Baniya, J. (2018, October 3-6). *Establishing an Agile Mindset and Culture for Workforce Preparedness: A Baseline Study*. 2018 IEEE Frontiers in Education Conference (FIE), San Jose, CA, USA. 10.1109/FIE.2018.8658712. <https://ieeexplore.ieee.org/document/8658712>.

# ARTICLE ABSTRACT

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This Research Paper presents our work using the Organizational Culture Framework to better understand the educational and operational culture of the Department of Computer Science at Tennessee Tech University. A large percentage of graduates with computing degrees will enter corporate environments dominated by the use of Agile development methods, including Scrum. A significant part of these methodologies is grounded in establishing cultural norms that emphasize teamwork, communication, reflection, and action. We conducted a study using an organizational culture framework to better understand both the ideal and current cultures of our department as well as the levers that can be used to move the current toward the ideal. The design of the study is based on the notion that by identifying an ideal culture and measuring the current culture we can identify the gap between the as-is and the to-be culture of the department.

Our results demonstrate a marked difference between the target ideal culture identified by both the Agile experts and faculty/staff and what the students perceive the current culture to be. The results of the survey serve as a baseline for our ongoing effort to create a pathway for transitioning students towards adopting an Agile mindset that will ease the commencement of careers of graduates as practicing software engineers.

## Keywords

Agile Development, Constructive Culture, Organizational Change, Workforce Readiness

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