

Safety and Training in Oil and Gas Companies

Research Themes

- Benchmark and track safety metrics in the natural gas pipeline industry
- Determine and develop efficient and precise methods for assessing organizational safety concerns
- Pinpoint most crucial antecedents to workplace safety
- Guide organizational intervention recommendations intended to improve safety behaviors and outcomes
- Focus mentoring and development plans on individuals' specific skills gaps
- Upgrade supervisor and mentor training to include cultural and "soft" skills training
- Create a culture of safety accountability, where safety behaviors, contributions, and outcomes are explicit parts of the performance appraisal system, and where violations of safety guidelines result in significant ramifications for employees, supervisors, and managers
- Implement top management workshops to assess the barriers to clear communication of safety values
- Assess safety behaviors and outcomes using valid and reliable measurements regularly, and monitor their rate of change.
- Identify scientifically-based best-practice approaches to training program measurement and evaluation
- Establish targets for effective program roll-out and initial implementation
- Identify operational goals for continual efficacy and consistency in program delivery
- Derive content valid and criterion-related metrics to effectively assess training efficacy
- Define content for safety and technical training programs to decrease "time-to-readiness" and increase learning and training transfer to ultimately maximize return on training investment (ROTI)
- Conduct competency models to identify the most critical employee qualities for successful job performance and skills gaps among current employees

Recent Accomplishments

- Created heatmaps and consulted with Health-Safety-Environment (HSE) specialists on development of training/coaching interventions
- Assisted in defining and developing training content for commercial design practitioners at ExxonMobil
- Proposed actionable solutions to safety concerns at large multinational oil and gas companies
- Presented findings and implications from an industry-wide safety survey to top executives and HSE experts at the 2015 Interstate Natural Gas Association of America (INGAA)
- Assisted in developing the training measurement and evaluation strategy for the University of Houston's Upstream Energy Safety Certificate Program
- Served as an advisory panel member for INGAA's safety culture program
- Defended master's thesis entitled, "The Effects of Proactive Personality, Collectivism, and Conscientiousness on Training Motivation"

Issues

- Understanding the roles of supervisors and managers in the training and development of their subordinates
- Determining the effects that different personality profiles and individual differences have on trainees' success
- Standardization and efficiency of measuring safety outcomes among oil and gas companies
- Generalization of understanding of training motivation to different industries and subgroups of people
- Conduct applied longitudinal studies of the training process using data from multiple sources
- Understanding how the effects of individual and environment factors on training outcomes differ depending on the type of skills being trained (e.g., "hard" [technical] vs. "soft" [interpersonal]), instructions and feedback (e.g., self-paced vs. lecture based), and method of training (e.g., computer based vs. role modelling)



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