



EVIDENCE-BASED PROCESS FOR ASSESSING TEAMWORK COMPETENCIES IN APPLICANT PERFORMANCE IN HIGH-RISK, OPERATIONAL OCCUPATIONS

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Evidence-based Process For Assessing Teamwork Competencies



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Ready for Launch: Developing A New Team Exercise for Astronaut Applicants



- ❖ Determine critical competencies
- ❖ Identify and address challenges to measurement
- ❖ Design high-fidelity assessments to elicit and enable measurement of target behaviors related to competencies (e.g., Teamwork)
- ❖ Train qualified evaluators
- ❖ Define and operationalize behaviors
- ❖ Create a rating form



Astronaut Competencies



❖ Teamwork

❖ Leadership/Followership

❖ Small Group Living

❖ Resilience

❖ Self Regulation

❖ Operational Problem-Solving





Measuring Team Processes



- ❖ Measuring an *individual's* team orientation when they are operating in a group is difficult because it is not a team- or task-specific construct (Marks et al., 2001)
- ❖ Organizational context may influence the forms of team processes that are prioritized
- ❖ Elements important to the astronaut profession include:
 - Task-oriented components (Action Processes)
 - Planning and evaluation activities (Transition Processes)
 - Person-oriented components (Interpersonal Processes)



Challenges to Measurement



- ❖ Teamwork is influenced by team dynamics and designated roles
- ❖ Differences in evaluation depending on the group's attributes can result in biased ratings for an individual
 - We try to balance demographics in team assignments for exercises (e.g., military background, gender, NASA employee)
 - The team orientation component was broken down into person- and task-oriented components



Challenges to Measurement



- ❖ One of our other field exercises is designed to focus on leadership and followership behaviors, and these aspects tend to overwhelm the ratings
- ❖ To tease out leadership and followership aspects from team performance, we sought to design a leaderless activity
 - Teams were told that they should not appoint a leader at any point during the activity



Designing an Exercise to Measure Team Processes



- ❖ What are we trying to leverage and assess?
 - Complex enough to require unique contributions
 - Demanding enough to require effort from all team members
 - Immersive experience to elicit behaviors of interest
 - Elicits adaptive problem-solving related to job to enhance fidelity and realism



Fidelity/Realism



- ❖ High-fidelity activities have been shown to better predict on-the-job performance than lower-fidelity alternatives (Lievens & Patterson, 2011)
- We engaged subject matter experts (SMEs) while designing our activity
- We had SMEs review materials to ensure a high level of realism in our tasks



Evaluators



- ❖ We use a multi-method, multi-rater system to get various looks at competencies by different raters
- ❖ Raters were operational psychologists with backgrounds in evaluating performance of high-performance individuals
- ❖ Raters received training on our competency model, rating scales, exercises, and bias awareness
- ❖ Evaluators received frame-of-reference training, which has been shown to improve accuracy of ratings (Woehr & Huffcutt, 1994)



Behaviorally Anchored Rating Forms (BARs)



- ❖ To enable accuracy of measurement for team processes and to minimize rater bias, behaviorally anchored rating scales (BARs) were developed (Ohland et al., 2012)
- ❖ This involved operationalizing and defining our competencies and providing examples of discreet, measurable behaviors in our rating forms
- ❖ We created specific behavioral descriptions for scores of 1, 3, and 5 (on a 5-point scale)



Operationalizing Competencies into Measurable Behaviors



Teamwork Action Processes:

Helpful. Engaged and "always in the mix". Offers some ideas and solutions. Does part to balance workload.

Non-behaviorally anchored:

"Is a team-player"

Overall Competency of Interest:

Teamwork



Summary



- ❖ We developed a novel selection assessment which took place in the field and simulated teamwork tasks that applicants would likely engage in on-the-job.
- ❖ Because they mimic job-relevant tasks and processes, these behavioral assessments offer fidelity and predictive validity (Lievens & Patterson, 2011).
- ❖ These types of assessments also enable evaluators to rate multiple competences simultaneously.
- ❖ The use of BARs provides an unbiased way to assess applicant behaviors.



Questions?

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References



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