Production Operator Test Battery Safety Study

White Paper
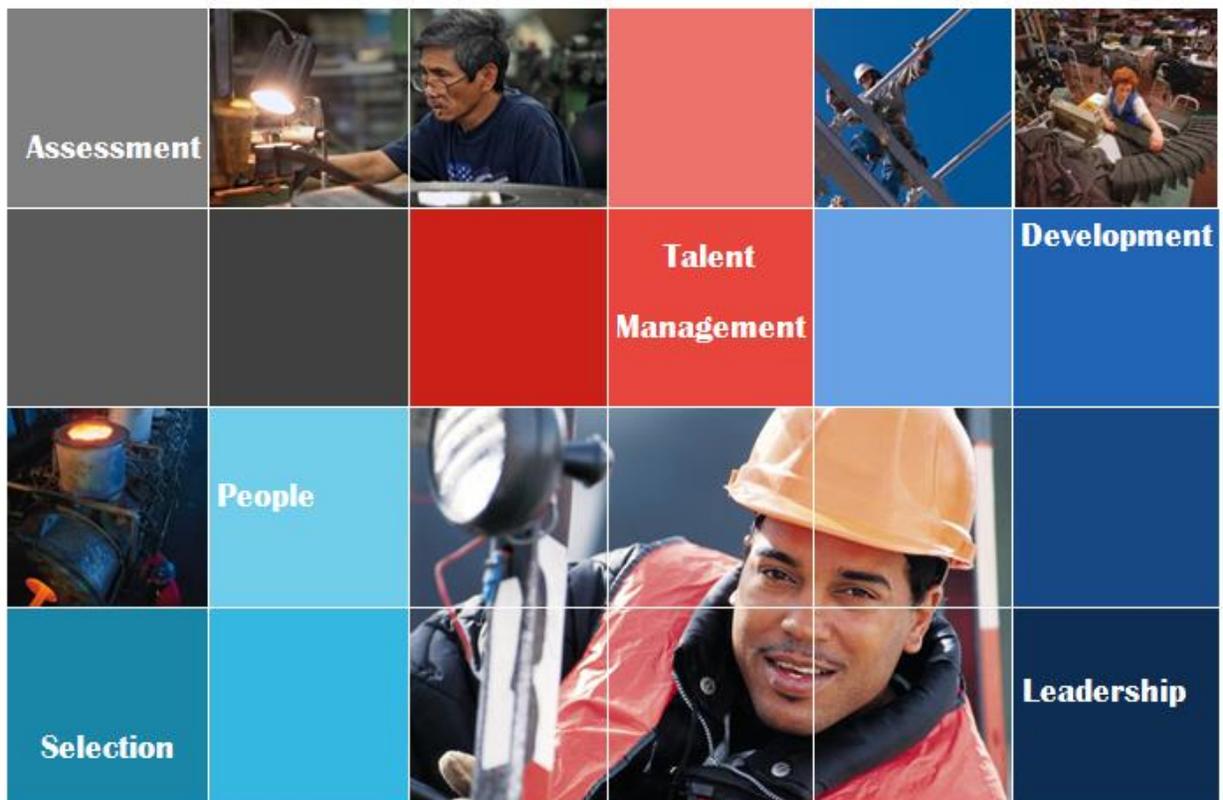
THE STORY

In the business world it has long been known that despite great expertise or knowledge, people often fail at certain jobs or in certain work environments based on how they work and interact with people. How a person behaves and works is largely based on his or her personality and psychological research over the last fifty years has shown that personality highly relates to job performance. Unfortunately, most organizations do not adequately screen or test job applicants on the important personality characteristics relevant to the job or company culture. They instead typically rely on intuition, interviews, and references to develop a picture of how the person will work and fit into the job and the work culture.

Prior to 2009, a mid-sized U.S. manufacturing organization was experiencing approximately 40% turnover among its first-year staff. Though they used a safety questionnaire in the hiring process, newly hired workers were often uncooperative, undependable, and would still engage in unsafe behaviors while at work. At times, it became so tense between coworkers that they would get into fist fights on the job. Beyond the interpersonal issues, new hires were often quitting and leaving the company quickly, usually within the first year of employment. This caused delays in production and lower performance as the company kept training new employees only to see them gone after a year. This equated to the need for around 60 new hires a year. Coupled with the performance and production problems caused by the fighting and unsafe behaviors, the company was struggling with very low returns. Action needed to be taken.

The manufacturing company took a hard look at itself and determined their selection process was inadequate. The current selection system clearly was not finding the right people and changes needed to be made to ensure the company was hiring better employees who would stay with the company beyond the first year.

To change their selection system, the manufacturing company partnered with Assessment Associates International (AAI) to address their personnel problem. Specifically, the company wanted to be able to identify those individuals who:

- ❖ Arrive to work on time;
- ❖ Cooperate with coworkers;
- ❖ Be dependable on the job;
- ❖ Complete work following the safety guidelines;
- ❖ Avoid confrontations and fights with coworkers.

Case Study:

Mary was the hiring manager for a production team. She recently interviewed Charlie. Based on his resume and score on their basic skills and safety test, he looked like a great fit. A brief interview went well and Sam talked about how he preferred working with others and was a good team player, even providing examples of how he had helped coworkers in the past. He was hired.

When Charlie started, he worked hard and diligently. A few weeks into the job however, coworkers began noticing that he cut corners and skipped many of the safety guidelines in his work. When confronted, Charlie apologized and promised to do better.

Charlie did better for a while but then started skipping the safety steps again. He started showing up to work a few minutes late and often would leave work a little early as well. At one point, he had an accident at work from skipping safety steps but luckily was barely hurt. When asked how it happened he just said it was an accident and it wouldn't happen again. His coworkers confronted him again about his unsafe behavior and about being at work on time. Charlie got upset and his coworkers left him alone when he began threatening them.

After a few more weeks and after seven months of being hired, Charlie was fired after another accident nearly injured a coworker.

A COMMON PROBLEM

The problems experienced at this manufacturing company are common in many organizations. Companies often use selection processes that assess people primarily based on their technical skills. Managers are often focused on hiring people with strong technical skills but often overlook interpersonal skill requirements of the job. Even if they recognize the importance of interpersonal and teamwork skills, managers with little training in interviewing are often left to try to assess these skills and have no valid tools available to measure underlying personality traits. In addition, many applicants are able to make it through an interview process and at least give the impression that they have all the necessary skills. Though having the necessary technical skills is essential, the value of these strengths can be offset when the person does not work effectively with others, engages in unsafe behavior, is not dependable, or has low levels of organizational commitment. Workers who exhibit these behaviors can cause serious problems which require excessive amounts of management time to deal with.

When organizations assess personality, or "soft skills," in addition to the necessary technical and reasoning skills, they are better able to select people who will be successful with both their individual and team responsibilities. Valid assessments take much of the pressure of identifying necessary job-specific personality traits off the shoulders of the interviewers allowing them to focus on the more technical requirements of the position.

Assessment Associates International (AAI) has developed scientifically valid assessments of personality which help organizations avoid hiring the undependable people who can be so disruptive to an organization. To help them pick the best applicants from their candidate pool, the manufacturing company contacted AAI about using a personality assessment as part of their selection process.

THE AAI SOLUTION

Upon partnering with AAI, it was decided that their Applicant Profile Inventory (API), a personality assessment evaluating an individual across eleven traits, would be the best type of assessment for the manufacturing company's selection process. The API measures individuals' tendencies to:

* Be cooperative and a team player,
* Control their emotions,
* Adapt to changing situations,
* Take initiative in their work and exert a high amount of effort,
* Be dependable with their work and show up on time,
* Follow rules and safety guidelines,
* Have a higher level of organizational commitment.

With this assessment, AAI conducted a validation study to determine how well the API would predict the outcomes the company was concerned about. To do so, the personality assessment was distributed to nearly 200 of the current production workers at the company. The results are displayed on the next page in Table 1.

RESULTS

The results below indicate there is a high degree of validity for all the scales of the API across several criteria. Specifically, the API was strongly related to:

- ❖ How often an individual was absent from work,
- ❖ How often they were late,
- ❖ The amount of warnings an individual received for rule or safety violations,
- ❖ The number of grievances filed against an individual,
- ❖ The number of accidents an individual had.

These issues were exactly what the manufacturing company wished to avoid and eliminate and the API consistently showed strong correlations across them. Many of the relationships between the API and the criteria reached into the 0.4 and 0.5 range, strength not often found when predicting work outcomes with personality. With the strength of the validity findings in hand, the company moved forward using the API as part of their selection process.

In the subsequent years while using the API, the manufacturing company was able to decrease their turnover from 40% to 3%, or from about 60 new hires a year to three to five. The API was successfully identifying the individuals who would work well at the manufacturing company and be able to cooperate, be dependable, and work safely and differentiating them from those who would fight, arrive late, and violate safety procedures. This has saved the company thousands of dollars in hiring and training costs as well as improving the productivity and performance of their production operators.

Table 1:
Validity of the 11 Personality Scales on the API across Several Criteria (N = 195)

Scale	Absents	Tardies	Rule Violations	Grievances	Accidents
1. Consideration	-.51**	-.47**	-.20**	-.19**	-.33**
2. Teamwork	-.58**	-.59**	-.22**	-.17*	-.32**
3. Self Control	-.46**	-.41**	-.18*	-.09	-.21**
4. Adaptability	.38**	.34**	.15*	.05	.10
5. Initiative & Effort	-.45**	-.44**	-.24**	-.14	-.13
6. Dependability	-.57**	-.54**	-.21**	-.15*	-.26**
7. Rule Following	-.52**	-.49**	-.24**	-.15*	-.19**
8. Risk Avoidance	-.41**	-.38**	-.19**	-.15*	-.22**
9. Retention	-.46**	-.45**	-.21**	-.17*	-.22**
10. Self Deceptive Enhancement	.22**	.20**	.09	.03	.25**
11. Impression Management	.52**	.48**	.22**	.15*	.26**
Sum of the 11 Personality Scales	-.54**	-.52**	-.23**	-.18*	-.25**

* Significant at $p \leq .05$.
** Significant at $p \leq .01$.