# ASSESSMENT CENTER PERFORMANCE AND BASIC SKILLS

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## Abstract

Investigated the relationship between basic skills (reading, vocabulary, language, math) and performance in a developmental assessment center for 144 production supervisors. Results showed that the basic skills test scores were significantly associated with overall assessor ratings and in-basket scores, but not significantly correlated with personality, supervisory evaluations, or self-ratings.

# ASSESSMENT CENTER PERFORMANCE AND BASIC SKILLS

Extensive research on assessment centers has shown that assessor ratings are valid predictors of a variety of criteria (Gaugler, Rosenthal, Thornton, & Bentson, 1987; Shore, Shore, & Thornton, 1992; Shore, Thornton, & Shore, 1990; Thornton & Cleveland, 1990; Schneider & Schmitt, 1992; Thornton & Byham, 1982). However, researchers have continued to raise the question of how and why assessment centers have show predictive validity despite a growing literature supporting their overall effectiveness (e.g., Sackett & Dreher, 1982; Klimoski & Brickner, 1987). Assessor ratings are typically based on many types of data, including paper-and-pencil tests, group exercises, in-basket exercises, structured interviews, and supervisory, peer, and self-evaluations. Although many of these types of data have been evaluated for their relative contribution to assessment center validity (e.g., Reilly & Chao, 1982; Brannick, Michaels, & Baker, 1989; Schippmann, Prien, & Katz, 1990), in-basket exercises, supervisor ratings, self-assessments, and basic skill cognitive test scores (e.g., reading, language, mathematical ability) have received less attention in the research literature.

In general, there has been a paucity of research on self- and peer evaluations within the assessment center. However, there has been extensive research on self-evaluations in other settings (Thornton, 1980; Mabe & West, 1982; Nowack, 1992; Harris & Schaubroeck, 1988). Nowack (1992) investigated differences between the self-ratings of 335 managers to others (supervisors, subordinates, peers) using an instrument assessing twenty specific management skills areas derived from job analysis procedures. The results indicated that the amount of agreement between managers and the others describing them was moderately low with correlation coefficients ranging from .122 to .295 ($p < .05$). Paired t-tests revealed that managers consistently reported practicing specific skills more frequently than others who rated them across the majority of skill areas. These results are consistent with the findings of Thornton (1980) who found that self-assessments tend to be lenient. In their review of over 50 studies, Shrauger and Schoeneman (1979) examined evidence relating self-perceptions to evaluations by significant others. In general, they found little evidence of congruence between self-perceptions and evaluations by others, nor did they find consistent evidence that self-evaluations are strongly influenced by other's feedback.

Harris and Schaubroeck's (1988) meta-analysis found that peer and supervisor ratings were relatively highly correlated, but that only moderate correlations existed between self-supervisor and self-peer ratings. The results of their meta-analysis indicated a relatively high correlation between peer- supervisor ratings ($r=.65$), but only a modest correlation between self-peer ($r=.36$) and self-supervisor ratings ($r=.35$). Furthermore, while rating format (global versus dimensional) and rating scale (behavioral versus trait) did not moderate the results, job type (managerial versus blue collar) did appear to moderate self-peer and self-supervisor ratings. Specifically, self-supervisor and self-peer correlations were much lower for managerial employees than for blue-collar types. However, these effects were not seen for peer-supervisor correlations. Reluctance to use self-ratings in assessment centers seems largely due to concerns that many individuals possess an overly positive, albeit unrealistic, view of themselves and tend to present themselves in socially

desirable or self-deceptive ways (e.g., Schwartz, 1990; Crowne & Marlowe, 1964; Edwards, 1957; Greenwald, 1980; Kagan, 1988; Taylor & Brown, 1988; DeNisi & Shaw, 1977).

In general, the predictive validity for both peer and self-evaluations in assessment centers is inconclusive, yet promising (Shore et al., 1992; Tziner, 1984; Bray & Grant, 1966). Bray et al., (1966) reported that overall assessor ratings and peer evaluations correlated higher than self- and assessor ratings or self- and peer ratings. These findings are consistent with the meta-analytic findings of Harris et al., (1988) but specific to assessment center performance. In their assessment center study of 394 employees in a large petroleum company, Shore et al., (1992) found evidence that the construct validity was stronger for peer than for self-evaluations, and for more easily observable dimensions than for dimensions requiring greater judgment. Self- and peer evaluations were found to be associated with overall assessor ratings for management potential, but only peer ratings significantly contributed to predictions of job advancement. Tziner (1984) found that a global peer rating did not significantly add to the prediction of training or job performance beyond an overall assessment rating in a longitudinal study in a military setting. Given the limited and inconsistent findings, additional studies examining the unique ability of peers and assessment center participants to make meaningful judgments related to the prediction of job performance, management potential, advancement, and training success are clearly needed.

To date, few published studies have directly explored the association between basic skills (reading, writing, speaking, quantitative ability) and assessment center performance despite evidence that a large degree of functional illiteracy exists within the supervisory and non-supervisory workforce (Green, 1992). Several recent studies by Shore et al., (1990, 1992) found that several cognitive ability measures (e.g., general reasoning, quantitative ability, reading speed, and reading comprehension) related more strongly to performance-style dimension ratings (e.g., oral communication, recognizing priorities, thoroughness, work quality) than to interpersonal-style categories (e.g., impact, amount of participation).

In general, Shore et al., (1990) found that cognitive ability measures were more strongly associated with performance-style assessment center dimensions than to interpersonal-style ratings, providing evidence for convergent and discriminant validity. These results suggest that overall assessment ratings possess construct validity and that assessors can differentiate between two broad categories of assessment dimensions. Specifically, Shore et al. (1990) found significant associations between the dimensions of impact, oral communication, and, understanding of people with the cognitive measures used with the 441 petroleum managers participating in their assessment center between 1980 and 1985. The correlation between quantitative ability and oral communication was the only nonsignificant relationship found between the cognitive measures and the performance-style dimensions. However, the average correlation between all the cognitive abilities and performance-style dimensions (mean $r = .25$) was significantly greater than the average correlation between the cognitive abilities and interpersonal-style dimensions (mean $r = .09$, $t = 3.06$, $p < .001$). Furthermore, each of the performance-style dimensions were more strongly correlated with general reasoning, quantitative ability, reading speed, and reading comprehension than were the interpersonal-style dimensions. In their 1992 study, Shore et al., (1992) found that peer, but not self-ratings, for the dimension of "expresses

ideas most clearly" were significantly more related to conceptually similar than to dissimilar cognitive abilities. Peer and self-ratings on the dimension "expresses ideas most clearly" were significantly correlated with reading comprehension scores. The remaining hypothesized relationships between peer and self-assessments were not significant. These findings suggest that cognitive abilities (e.g., quantitative ability, general reasoning) should differentially relate to either interpersonal- or performance-style dimensions, but that some cognitive skills may influence specific interpersonal and communication dimensions.

The present study attempted to explore the association between cognitive ability with broad measures of assessment center performance along the interpersonal and performance constructs typically found in the research literature (e.g., Shore et al., 1992; Crawley, Pinder, & Herriot, 1990). The purpose of the present study was to more closely examine the interrelationships between overall assessor ratings, supervisor management practices ratings, basic skills cognitive ability test scores, and in-basket performance in a developmental assessment center. Specifically, this study investigated the associations between measures of assessment center performance (self-ratings on skills on 14 assessment center dimensions, overall assessor ratings based upon three separate group interactive and role-play exercises, in-basket simulation) with supervisory ratings derived from a management practices questionnaire, basic skill cognitive ability test scores (reading, language, quantitative ability), and a personality measure. In the assessment center studied, dimensions were classified on rational grounds into an interpersonal-style or performance-style category. Interpersonal-style dimensions purportedly measured the participant's typical style when working with others (orientation towards people) and was assessed by the overall assessor ratings which were based only upon the group interactive and role-play exercises. By contrast, performance-style dimensions were designed to determine the participant's work style (orientation toward a task) and was based upon performance on an in-basket simulation. Support for this approach is found in previous research suggesting that assessors reduce a large set of dimensions into a smaller and conceptually similar set (e.g., Shore et al., 1990; Shore et al., 1992). Additional research suggests that assessors typically do not utilize more than a few (e.g., three to seven) dimensions in arriving at overall assessment ratings, and that between two and four factors typically underlie assessor's ratings (Thornton & Byham, 1982).

Thus, it was hypothesized that:

Hypothesis I: Basic skill cognitive ability test scores would be significantly associated with performance on the in-basket simulation requiring written communication, language, and reading skills (performance-style).

Hypothesis II: Basic skills test cognitive ability test scores would be significantly associated with administrative/managerial (performance-style), but not communication or interpersonal dimensions (interpersonal-style) of the supervisory management practices ratings.

Hypothesis III: Performance on the in-basket simulation (performance-style) would be more strongly associated with basic skills scores (cognitive ability) and supervisor ratings (performance style), than self-assessment and overall assessor ratings (interpersonal-style).

## METHOD

### Participants

Participants included 144 supervisors working in a production environment at three separate locations for a large communications company in the Los Angeles area. The program participants were primarily males (95.8%) with a mean age of 45.36 (SD=8.31) and average tenure of approximately 15.5 years with the company. Participants were selected to attend one of twelve scheduled one-day assessment centers as part of a comprehensive training and development program targeted to enhance overall supervisory knowledge and skills. Participants were given oral and written feedback in the presence of their supervisor approximately 2-3 week after the assessment center program was completed. This feedback meeting resulted in the initiation of a written professional development plan for each assessment center participant. Participants were also scheduled to attend a three-day supervisory skills training program later in the year.

### Assessment Center Procedures

The developmental assessment center targeted 14 dimensions based upon a thorough job analysis of the supervisory position. Individual and group exercises were designed to assess these 14 dimensions. Group exercises included two leaderless group discussions (a planning consensus exercise, manufacturing problem-solving exercise) and a performance coaching role-play. During each one-day assessment center session, twelve supervisors participated in these individual and group exercises, an in-basket simulation, and completed several paper-and-pencil tests. The participants were observed by three external assessors who had received a full-day of training in the assessment center method, observational ratings, and specific group exercises used in the center. Assessors observed participant behaviors during the exercises and prepared dimensional ratings and observational comments after each group exercise was completed. At the conclusion of each group exercise, the participants ranked one another on overall effectiveness in each group exercise. Participants were not specifically told how the peer and self-evaluations would be used, but there was an understanding that all information generated in the assessment center might be used for the assessor ratings and feedback reports. Each assessment center participant was provided a one-hour feedback session conducted by the assessment center administrator and a written developmental action plan. During the feedback meeting, results from the individual, group, and paper-and-pencil exercises were summarized. On average, these feedback meetings occurred approximately two weeks following each assessment center.

Each participant was a member of a group of six that rotated through the group exercises. Two assessors rotated their observations and evaluations of the six group members during the two large group exercises. The first large group exercise involved a consensus seeking task involving the steps involved in the project planning process. Participants were first asked to individually rank the project planning steps and then reach consensus as a large group about these rankings. In the second large group exercise, participants were given actual data extracted from a recent company-wide employee satisfaction survey. This data compared employee responses to ten specific questions between the production department and the rest of the company. The group was given the task to interpret these findings and suggest specific interventions or

recommendations for improving the effectiveness of the production department. The last exercise involved a performance coaching role-play. The participant was asked to play the role of a production supervisor who had to conduct a coaching meeting with a poor performing employee, played by one of the assessors. The participant was given a one-page summary describing recent performance issues and problems to be addressed during the coaching meeting.

At the conclusion of the assessment center, assessors were joined by the administrator to evaluate participants. Overall assessor evaluations (OAR), based upon 1 to 5 scale, were obtained through consensus ratings based only upon the three group exercises used in the assessment center for each participant. No paper-and-pencil results were made available to the assessors before they assigned the OAR.

Measures

Management Practices Skills Self and Supervisory Ratings. In this study, the Management Practices Questionnaire (MPQ) was used to assess supervisory and management skills (Nowack, 1992) from both the participant and their direct supervisor. The MPQ was designed to provide participants with specific feedback on twenty specific job skills and behaviors. The instrument is completed by the assessment center participant and their current supervisor. Each question is behaviorally focused and respondents rate the frequency or practice of each behavioral skill using a 7-point scale where 1=To an extremely small extent and 7=To an extremely large extent.

The MPQ is composed of 100-items measuring twenty specific management practices areas based upon job analysis and organized into four general areas: 1) Communication Skills--Listening, Two-Way Feedback, Oral Communication, Written Communication, Oral Presentation; 2) Administrative/Managerial Skills--Vision/Goal Setting, Performance Evaluation, Planning/Organizing, Delegation, Administrative Control; 3) InterpersonalSkills--TeamBuilding/TeamDevelopment,Recognizing/RewardingPerformance,Interpersonal Sensitivity, Negotiation/Conflict, Performance Management, Coaching, Leadership/Influence, Employee Involvement/Participation, and 4) Decision Making Skills--Strategic Problem-Analysis, Decisiveness, and Judgment.

The internal consistency reliability (alpha) of the MPQ scales are fairly high, ranging from .71 to .91 as measured by Cronbach's alpha. The MPQ has shown acceptable test re-test reliability ranging from .45 to .82 over a three-month period in previous research (Nowack, 1989). The average test re-test reliability across all twenty scales was .65. Item-total analyses indicate that items within each scale are highly inter-correlated with each other, however, items across certain scales also correlate modestly with each other (data not shown). A principal components factor analysis across the entire sample, with varimax rotation, yielded a three factor solution explaining a total of 74.2% of the common variance. These three factors included: 1) Interpersonal skills; 2) Administrative/Management skills; and 3) Communication skills which correspond to the general managerial skill areas identified in the original job analysis. However, the first factor (Interpersonal skills) was clearly the largest factor accounting for 61.4% of the common variance.

Basic Skills Tests. The Adult Basic Learning Examination (ABLE), Level 3 (Karlsen & Gardner, 1986) was developed to assess the level of educational achievement among adults. The test consists of items

with adult content, and it may be used to assess the achievement level of those who have had varying amounts of formal schooling. ABLE was developed to determine the general education level of adults who may not have completed twelve years of schooling and to evaluate efforts to raise the educational level of these adults. The ABLE Level 3 (Form E) has an average reliability coefficient of .90 across all six scales. In addition, the correlation between the ABLE and the Stanford Achievement Test series is .80 ($p < .01$). The content validity of ABLE is based on a set of objectives that relate to fundamental skills necessary for an adult to function in today's society.

Scales of the Level 3 ABLE test include: 1) Vocabulary: This 32-item test is designed to assess knowledge and understanding of words frequently encountered in work or home activities; 2) Reading comprehension: The 48-item reading comprehension test is designed to measure comprehension of reading passages and material. The reading passages include material of a functional nature (e.g., advertisements, letters) and material of an educational nature; 3) Spelling: Spelling ability is measured by a 30-item test. Words were selected to represent words adults needed in written communication and those words most common phonetic and structural principles of spelling; 4) Language: The 30-item language test is organized into two parts: (1) capitalization, punctuation, and punctuation conventions; and (2) applied grammar; 5) Number operations: The functions measured by the 40-item number operations include reading and writing numerals, interpreting fractions, factorization, ratio, proportion, percent, equations, and using zero as an operator. The participant is asked to use addition, subtraction, multiplication, and division with whole numbers, fractions, and decimals to compute answers to number problems an average adult is likely to encounter; 6) Numeric problem-solving: The 40-item problem solving test assesses the participant's ability to interpret information from tables, recognize geometric shapes, and computer areas, volumes, perimeters of areas.

Management Simulation. An in-basket exercise was used to simulate the administrative and supervisory problems of a typical manager in a production and manufacturing setting. With the aid of background information on a fictitious organization, the participant assumes the role of a new department manager and is asked to respond to 23 specific letters, memos, reports, requests, and problems that have accumulated on a predecessor's desk. The participant must make decisions, take actions, delegate responsibility, write letters, initiate meetings, assign work, plan, organize, and schedule activities based on the material in the in-basket exercise.

The in-basket provides for eight separate scale scores (initiative, interpersonal sensitivity, planning/organizing, delegation, administrative follow-up, problem analysis, decisiveness, judgment) and an overall score. This simulation is scored using an objective scoring key providing points for desired behaviors expressed, decisions made, or actions taken. The in-basket simulation has demonstrated high inter-rater reliability (.93) and criterion-related validity with supervisory ratings (average $r=.27$) in a previous validation study (Nowack, 1989).

Personality Test. The FIRO-B Inventory (Schutz, 1983) was administered in the assessment center. This reliable 54-item personality inventory measures three key interpersonal areas: 1) Sociability; 2)

Control/Leadership; & 3) Openness/Sensitivity towards others. This instrument provides feedback on the extent to which a candidate will direct/lead others, be directed by others, be open/sensitive towards others, and be interested in interacting with others. The FIRO-B has shown adequate internal consistency reliability and criterion-related validity in a number of research studies (Schutz, 1983).

Self and Peer Exercise Rankings. In each large group exercise, the 6 participants ranked themselves and one another's overall effectiveness from 1 (low) to 5 (high). The peer rankings used in this study consisted of the total of the ranks assigned by exercise participants, excluding self-rankings. Self-rankings were the participant's ranking of their own performance relative to the other group members.

Self and Assessor Ratings on Dimensions. Participants and assessors evaluated performance on the 14 assessment center dimensions, using a 1 (low) to 5 (high) scale. Definitions of the supervisory dimensions and behavioral examples were provided to assist participants and assessors in determining their ratings. Self-ratings of the participants also included a brief summary of their strengths, development areas, and career objectives. These self-ratings on the 14 dimensions were made available to the assessors and used in the OAR.

## RESULTS

Pearson correlation coefficients were calculated to determine the relationship between self-, supervisor, and overall assessor ratings (OAR). Participant self-ratings on the 14 assessment center dimensions were significantly associated with OAR ($r = .26$, $p < .01$), but not overall supervisory ratings ($r = .10$, $p > .05$). Supervisory ratings were significantly, albeit modestly, associated with OAR ($r = .23$, $p < .01$). The strongest correlations were observed between OAR and supervisory ratings on the communications and interpersonal subscales (rs =.31 and .27, respectively, all p's < .01). The association between OAR and supervisory ratings on the administrative/managerial dimension was not significant ($r = .13$, $p > .05$). Taken together, these findings suggest that the agreement between self- and overall assessor ratings are much stronger than between self- and supervisory ratings. It is possible that supervisory ratings were more strongly related to performance-style dimensions, rather than, interpersonal-style dimensions in this study. Some limited support for this hypothesis can be seen in the significant association between overall supervisory ratings, but not self-ratings, and performance on in-basket simulation (Table 4). In this study, basic skill cognitive ability test scores were not significantly correlated with any of the personality scales measured from the FIRO-B. Furthermore, very few personality scales were significantly correlated with any assessment center measures, and those that did were difficult to fully interpret. As such, they were not included in any of the subsequent statistical analyses and will not be discussed further.

The first hypothesis predicted that basic skill cognitive ability scores would be significantly associated with performance on the in-basket simulation requiring written communication, language, reading, problem analysis, judgment, and decision making skills. Table 1 summarizes the correlations between basic skill scale scores and in-basket performance. Specifically, basic skill tests scores (vocabulary, reading comprehension, spelling, language, math operations, math problem solving) were significantly correlated with performance

on the in-basket simulation (average r=.34, P < .01). Nonsignificant associations were consistently found between the planning/organizing and follow-up in-basket dimensions and basic skill scales (Table 1). Furthermore, interpersonal sensitivity was significantly associated with only some of the basic skill scales. Even though a number of these correlations between sensitivity and basic skills were significant, the magnitude of these associations were fairly low.

No support was found for the second hypothesis which predicted that basic skill cognitive ability scores would be more strongly correlated with supervisory ratings on administrative/managerial (performance-style) dimensions than with those on the interpersonal or communication dimensions (interpersonal-style). Significant correlations were observed between the basic skills cognitive ability scales and the supervisor communications dimensions (average r =.26, p <.01) as seen in Table 2. However, supervisor ratings on the administrative/managerial (performance-style) and interpersonal dimensions (except for math operations and math problems) were nonsignificant. Math operations and math problems were significantly associated with supervisor ratings of interpersonal-style dimensions (r= .25, p < .01 and r= .19, respectively, p's < .05). Furthermore, basic skill scale scores were not significantly correlated with an overall supervisory rating (Table 2).

The third hypothesis predicted that in-basket performance would be more strongly associated with basic skill cognitive ability test scores and supervisor ratings, than self-assessments or OAR. As seen in Table 1, overall in-basket performance (calculated as an average score across all six dimensions) were significantly correlated with basic skill test scores (average r =.34, p < .01). Table 4 summarizes the correlations between performance on the in-basket simulation and other assessment center performance. Performance on the in-basket was significantly associated with both OAR (r=.20, p < .05) and overall supervisory ratings on the Management Practices Questionnaire (r=.49, p < .01), but not with self-ratings (r=.15, p > .05). These results provide limited criterion related validity of the in-basket simulation with supervisory ratings despite recent questions and criticisms about the validity of in-basket scores (Brannick et al., 1989; Schippmann et al., 1990). Multiple regression analyses indicated that vocabulary test scores and overall supervisory ratings on the Management Practices Questionnaire significantly contributed to predictions of performance on the in-basket simulation accounting for 44 percent of the variance in this dependent variable. These findings suggest that basic skill cognitive ability scores and supervisory evaluations of management practices across diverse dimensions are strongly associated with performance on an in-basket simulation.

## DISCUSSION

This study explored the relationship between basic skill cognitive ability test scores, self- and supervisor ratings on performance-style and interpersonal-style assessment center dimensions of 144 supervisors working in a production environment. The results of the present study do not provide clear support for the construct validity of two categories of assessment center performance (performance-style and interpersonal-style) found in other studies (e.g., Shore et al., 1990; Shore et al., 1992). In these studies, performance-style dimensions have typically been found to correlate more strongly with cognitive ability measures than did interpersonal-style dimension ratings. Performance-style dimensions, assessed by the in-

basket simulation in this study, did consistently correlate with the basic skills cognitive ability scales as hypothesized. In general, the basic skills cognitive ability test scores were consistently, and significantly, correlated with the majority of in-basket subscales, as well overall performance on the in-basket simulation (Table 1). As such, basic skill cognitive ability test scores appear to be significantly associated with performance on this administrative and cognitive task requiring written expression of problem analysis, decision making, judgment, and organizational planning skills. Multiple regression analyses were used to further explore the relative contributions of assessment center measures to predictions of in-basket performance in this study. Results indicated that scores on the basic skills test of vocabulary and supervisory ratings on the administrative/managerial dimensions significantly contributed to predictions of in-basket performance accounting for approximately 70% of this dependent variable (Table 3). These findings suggest that knowledge and understanding of words frequently encountered in work or home activities (vocabulary) appeared to be the most influential basic skill cognitive ability scale affecting performance on this simulation. The incremental contribution of supervisor ratings of administrative/managerial dimensions (performance-style) to the prediction of in-basket performance provides limited construct validity for this Management Practices Questionnaire dimension. As expected, supervisor's ratings of assessment center participants on vision/goal setting, performance management, planning/organizing, delegation, and administrative control/follow-up (administrative and managerial dimensions) were most strongly associated with performance on the in-basket simulation compared to either interpersonal or communications dimensions.

Table 4 indicates that overall assessor ratings (OAR) on the interactive and role-play exercises (interpersonal-style), and supervisory ratings on the communication dimensions of the Management Practices Questionnaire (interpersonal-style) were also significantly associated with the basic skill cognitive ability scales (average rs =.26 and .26, respectively, all p's < .01). However, basic skill cognitive ability scores were not significantly associated with either self-ratings on the 14 assessment center dimensions (average r=.02, P > .05), or overall supervisory ratings of management practices (average r=.10, p > .05). These findings are consistent with the results of Shore et al. (1990) who found that the specific cognitive ability test scores on reading speed and reading comprehension were significantly correlated with three interpersonal-style dimensions of "amount of participation", "impact" , and "understanding people" in their assessment center study. These findings suggest that specific aspects of cognitive ability, particularly those related to verbal and reading skills, appeared to influence the ratings of communication and interpersonal behaviors of assessment center participants by both external assessors and participant's current supervisors.

These findings support the hypothesis that basic cognitive ability skills (vocabulary, reading, and language) are associated with some interpersonal and communication dimensions measured during an assessment center despite a general conclusion that cognitive ability measures are more strongly associated with performance-, rather than, interpersonal-style dimensions (e.g., Shore et al., 1990). Surprisingly, significant correlations were found in the present study between the specific cognitive ability basic skill scales of math operations, math problem solving, and overall assessor ratings, and supervisory ratings on the communication dimensions (Table 2). However, these limited correlational findings are difficult to interpret

in light of nonsignificant associations found between these same quantitative cognitive ability scales and supervisor ratings of the interpersonal and administrative/managerial dimensions (Table 2). In general, basic skill cognitive ability test scores appeared to be related to more strongly related to behaviors that are most observable to assessment center assessors and the participant's current supervisor. It appears that participants who are deficit in basic cognitive ability skills, as measured by the ABLE, demonstrated less competent or effective and communication behaviors to assessors during the assessment center and to their supervisor on a day-to-day basis. The present findings suggest that specific cognitive abilities can significantly influence performance on both performance-style and interpersonal-style exercises requiring complex speaking, presenting, influence, and language skills during assessment centers. These findings are particularly interesting in light of the meaning of the overall assessor rating used in this study. Unlike global OAR which are typically based on a synthesis of all assessment center performance data, the present OAR reflects consensus ratings based only on the interactive leaderless group and role-play exercises. As such, the present OAR may be less confounded with typical performance-style dimension evaluations. It might be hypothesized that specific cognitive ability constructs (e.g., language, vocabulary, reading) may more strongly influence interpersonal-style dimension ratings, whereas, others (e.g., general reasoning, quantitative skills) may more strongly influence performance-style dimensional ratings. Additional research is obviously required to clarify the relationship between cognitive ability, performance-style, and interpersonal style dimensions as they relate to overall assessment center ratings.

The present study also supports the recent findings of Shore et al., (1992) providing limited construct validity for the use of self-ratings in assessment centers. Self-ratings on the 14 assessment center dimensions were found to be significantly correlated with OAR ($r=.26$, $p < .01$) and specific in-basket dimensions (Table 4). Findings from the Shore et al., (1992) suggest that self-evaluations will be most useful when they focus on dimensions for which participants have greater amounts of behavioral information on which to base their judgments. Designers of assessment centers should consider the unique perspective that candidates can provide about their own performance. Leniency and rating errors may be reduced by asking participants to summarize self-perceived strengths, development areas, and career objectives instead of rating their performance relative to others. In the present study, self-assessments appeared to be most useful for developmental purposes and planning the post-assessment center follow-up feedback meetings with each participant. Although self-ratings may be influenced by the purpose by which the are used (e.g., Farh & Werbel, 1986; Nowack, 1992), future research should continue to explore their use and validity in assessment centers. Overall, these results suggest that greater theoretical, practical, and empirical exploration of the contribution of self-assessment to the validity of assessment center is warranted.

Future research should continue to explore the relationship of basic skill cognitive ability test scores with diverse measures of organizational performance (e.g., tenure, advancement, training success). Ideally, these studies should be longitudinal in nature and utilize diverse personality, self-assessment, supervisor, and peer evaluations. In developing assessment centers, it would appear important to consider the basic cognitive ability skill level of the program participants and include such measures in future research studies.

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# TABLE 1

## Correlations Between Basic Skills Scores and In-Basket Performance (N=144)

| In-Basket Scales | Basic Skill Scales: Vocabulary | Reading | Spelling | Language | Math Operations | Math Problems |
|---|---|---|---|---|---|---|
| Initiative | .39** | .34** | .22** | .38** | .21** | .38** |
| Sensitivity | .24** | .23** | .11 | .12 | .11 | .15* |
| Planning | .07 | .01 | -.02 | .08 | .14 | .09 |
| Delegation | .37** | .28** | .26** | .29** | .33** | .35** |
| Follow-Up | .09 | -.02 | -.01 | .06 | -.03 | .01 |
| Problem-Analysis | .45** | .35** | .31** | .40** | .28** | .30** |
| Judgement | .49** | .47** | .27** | .45** | .38** | .49** |
| Decisiveness | .42** | .32** | .18* | .25** | .18* | .33** |
| Overall In-Basket | .47** | .34** | .31** | .35** | .23* | .35** |

* $p < .05$; ** $p < .01$

# TABLE 2

## Correlations Between Basic Skills Scores and Assessment Center Performance Ratings (N=144)

| | Basic Skill Scales | | | | | |
|---|---|---|---|---|---|---|
| Assessment Ratings | Vocabulary | Reading | Spelling | Language | Math Operations | Math Problems |
| Self-Ratings | .02 | .01 | .03 | .02 | .03 | .03 |
| Assessor Ratings | .26** | .28** | .16* | .22** | .27** | .29** |
| Supervisor Ratings (Overall) | .02 | -.07 | .07 | .12 | .16 | .19 |
| Supervisor Ratings (Interpersonal Scale) | .04 | -.04 | .05 | .16 | .25** | .19* |
| Supervisor Ratings (Performance Scale) | -.02 | -.11 | .01 | .04 | -.02 | .04 |
| Supervisor Ratings (Communication Scale) | .28** | .18* | .18* | .32** | .26** | .25** |

* $p < .05$; ** $p < .01$

# TABLE 3

Results of Multiple Regression Analysis with Basic Skills and Assessment Center Ratings as Independent Variables and In-Basket Performance as Dependent Variable

| Variable | Multiple R | RSQ | RSQ Change | F |
|---|---|---|---|---|
| Vocabulary | .54 | .30 | .30 | 18.13** |
| Supervisory Rating | .66 | .44 | .14 | 9.9** |

* $p < .05$; ** $p < .01$

# TABLE 4

## Correlations Between In-Basket Scales and Assessment Center Ratings (N=144)

| | Assessor, Managerial, and Self Ratings | | | | | |
|---|---|---|---|---|---|---|
| In-Basket Scales | Overall Assessor Ratings | Manager Ratings (Interpersonal) | Manager Ratings (Administrative) | Manager Ratings (Communication) | Manager Ratings (Overall) | Dimension Self-Ratings |
| Initiative | .33** | .18* | .15 | .31** | .15 | .38** |
| Sensitivity | .16* | .05 | .28** | .16 | .23** | .15* |
| Planning | .19* | .52** | .64** | .68** | .65** | .09 |
| Delegation | .39** | .15* | .09 | .30** | .30** | .35** |
| Follow-Up | .11 | .41** | .62** | .62** | .63** | .01 |
| Problem-Analysis | .27** | .13 | .22** | .32** | .28** | .30** |
| Judgement | .34** | .18* | .23** | .39** | .22** | .49** |
| Decisiveness | .21** | .06 | .18* | .24** | .12 | .33** |
| Overall In-Basket | .20** | .27** | .45** | .49** | .39** | .15 |

* $p < .05$; ** $p < .01$