



Factors Influencing Applicant Performance When Retaking Employment Exams

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Obligation to Retest

- Uniform Guidelines on Employee Selection Procedures (1978)
 - Section 12: Retesting of applicants: “Users should provide a reasonable opportunity for retesting and reconsideration.”
- Standards for Educational and Psychological Testing (1999)
 - Retest opportunities should be provided for promotion, graduation, admission, licensing, or certification decisions



Why Is There An Obligation to Retest?

- Two rationales underlie the professional endorsement for retesting (Lievens, Buyse, & Sackett, 2005)
 - “Retesting is warranted due to the possibility that the initial assessment was in error...”
 - Retesting is warranted because there “is the possibility that candidates have improved their standing on the construct of interest...”
- In addition, our society has an expectation that individuals will have the opportunity to “try again”. Not allowing individuals to retest would be construed as unfair.



The Issue is Not to Retest

- The focus should be on the effect and impact of retesting in order to answer critical questions regarding retesting
 - Do re-takers score higher on the retest?
 - What is a reasonable test-retest interval?
 - How many retests should be allowed?
 - Which scores best reflect the true score?
 - Is there a validity reduction with retesting?
 - Do retest takers differ from non-retest takers?
 - Are certain types of tests more prone to retest effects than others?
 - What are the potential benefits to organizations of retesting?



Published Research on Retesting, Coaching, and Practice Effects



A Brief Literature Review

- Most of the research and published literature is in the educational arena and centers around coaching and practice effects
 - Aptitude, achievement, and ability tests
- To date only two articles have been published that focus on retesting in employment settings
 - Hausknecht, Trevor, & Farr, 2002
 - Police officer entrance examination
 - Lievens, Buyse, & Sackett, 2005
 - Used medical school admissions exam as a proxy for employment setting



Coaching Effects

Aptitude & Achievement Tests

- Meta-analysis on aptitude test coaching (Kulik, Bangert-Drowns, & Kulik (1984)
 - Raised SAT scores an average of 0.15 *SD*
 - Raised other aptitude and intelligence test scores an average of 0.43 *SD*
- Coaching raised scores on the revised SAT by 0.10 *SD* and 0.20 *SD* on the verbal and math sections (Powers & Rock, 1999)
- SAT and ACT scores increased following participation in test preparation activities (Briggs, 2001)
- Attendees of test preparation programs for selection settings scored no better on ability tests than non-attendees (Ryan, Ployhart, Gregarus, & Schmidt, 1998)



Practice Effects

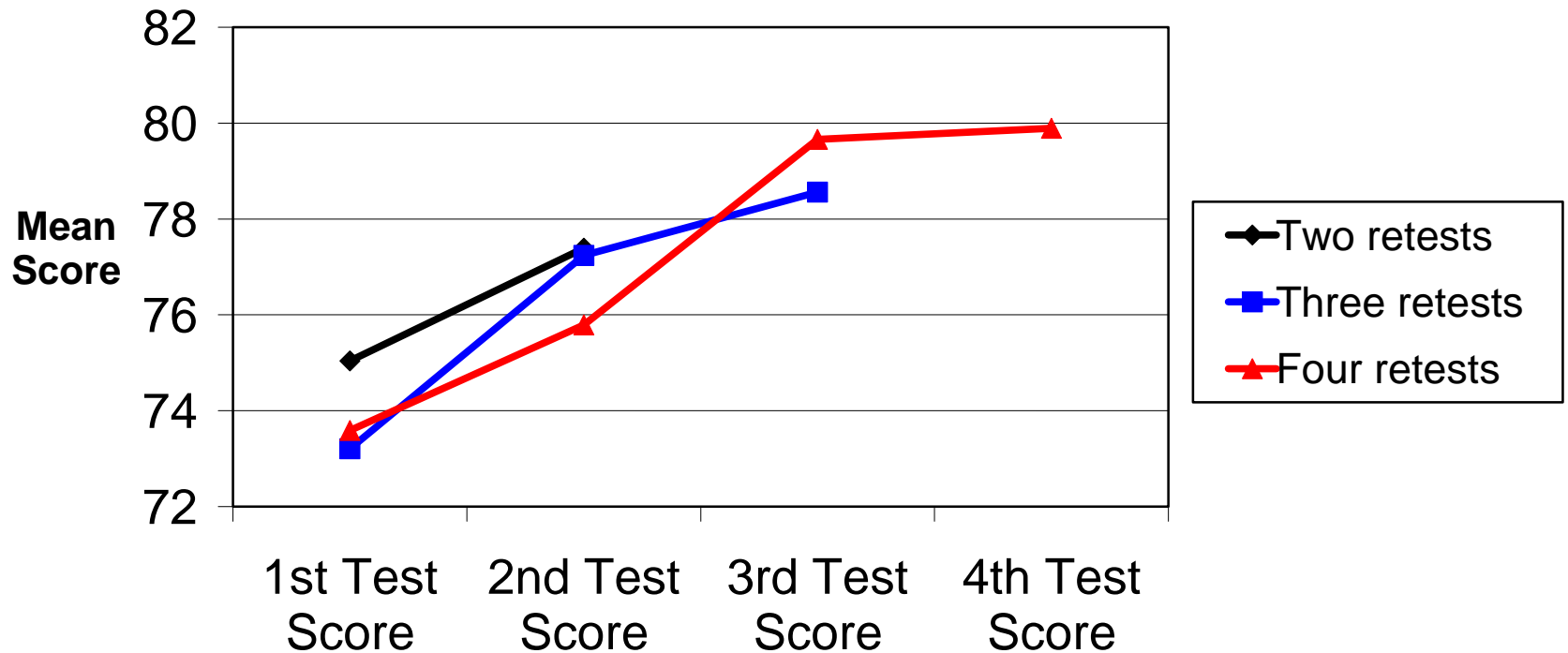
Aptitude & Achievement Tests

- Test scores increase in the second administration of achievement and aptitude tests (Kulik, Kulik, & Bangert, 1984)
 - Test score increases for identical tests = 0.42 *SD*
 - Test score increases for parallel forms = 0.23 *SD*
- Multiple retests result in larger practice effects for achievement and aptitude tests (Kulik, Kulik, & Bangert, 1984)
 - First to second = 0.42 *SD* score increase
 - First to third = 0.70 *SD* score increase
 - First to fourth = 0.96 *SD* score increase



Selection Research

Police Entrance Exam Test Scores

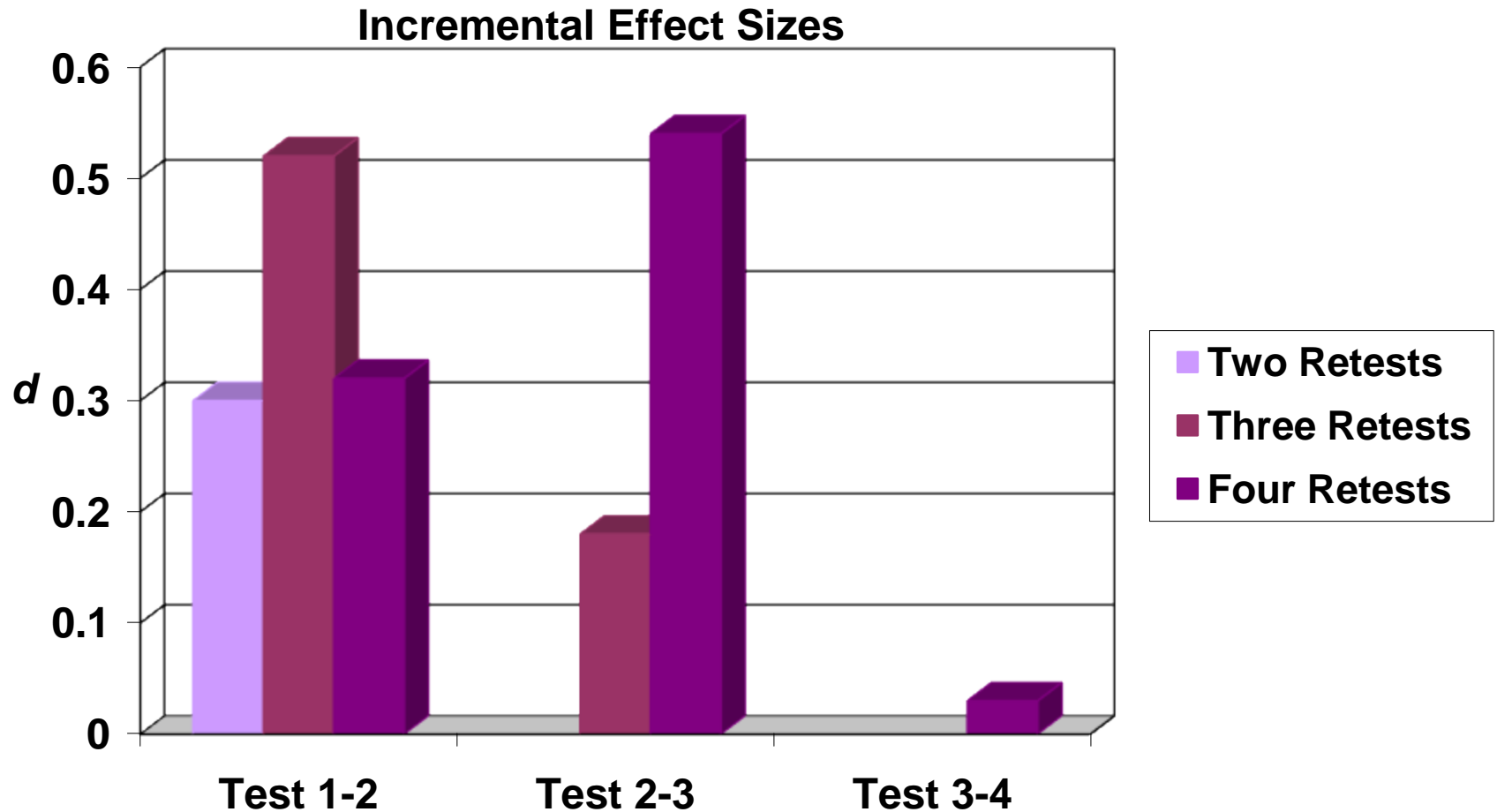


Adapted from Hausknecht, Trevor, & Farr (2002)



Selection Research

Police Entrance Exam Retest Effect Sizes

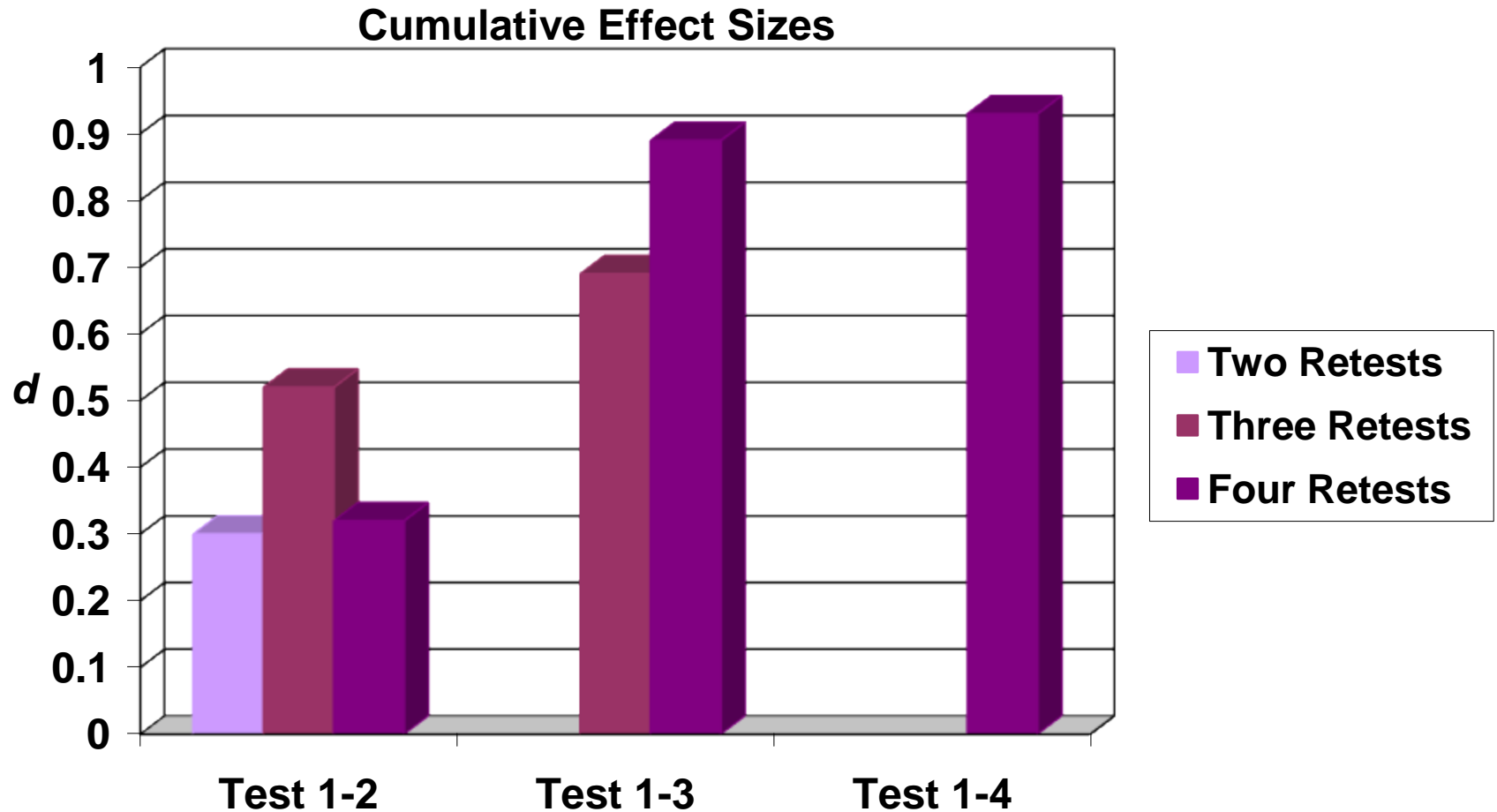


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Selection Research

Police Entrance Exam Retest Effect Sizes

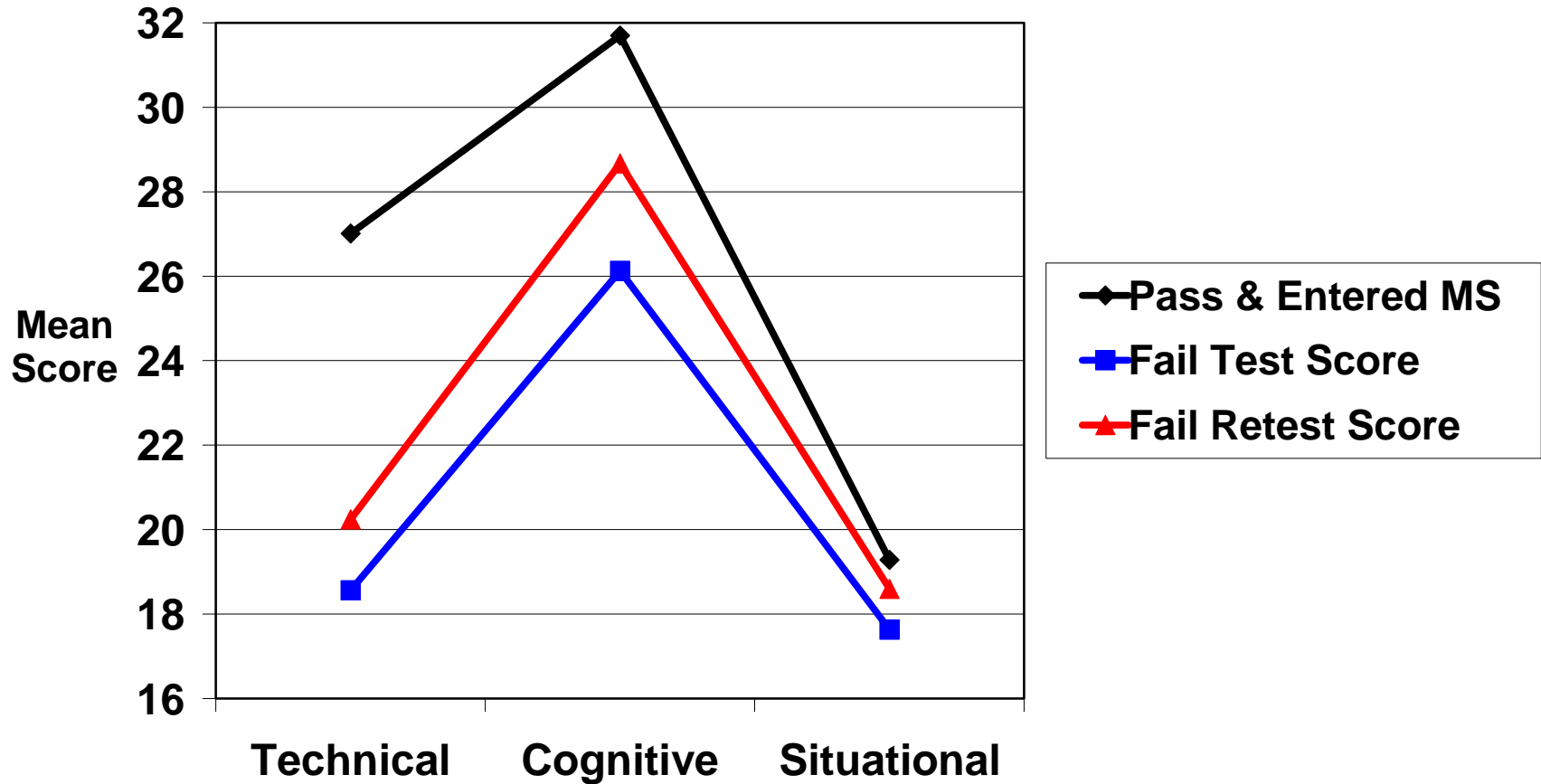


Adapted from Hausknecht, Trevor, & Farr (2002)



Selection Research

Medical Entrance Exam Test Scores

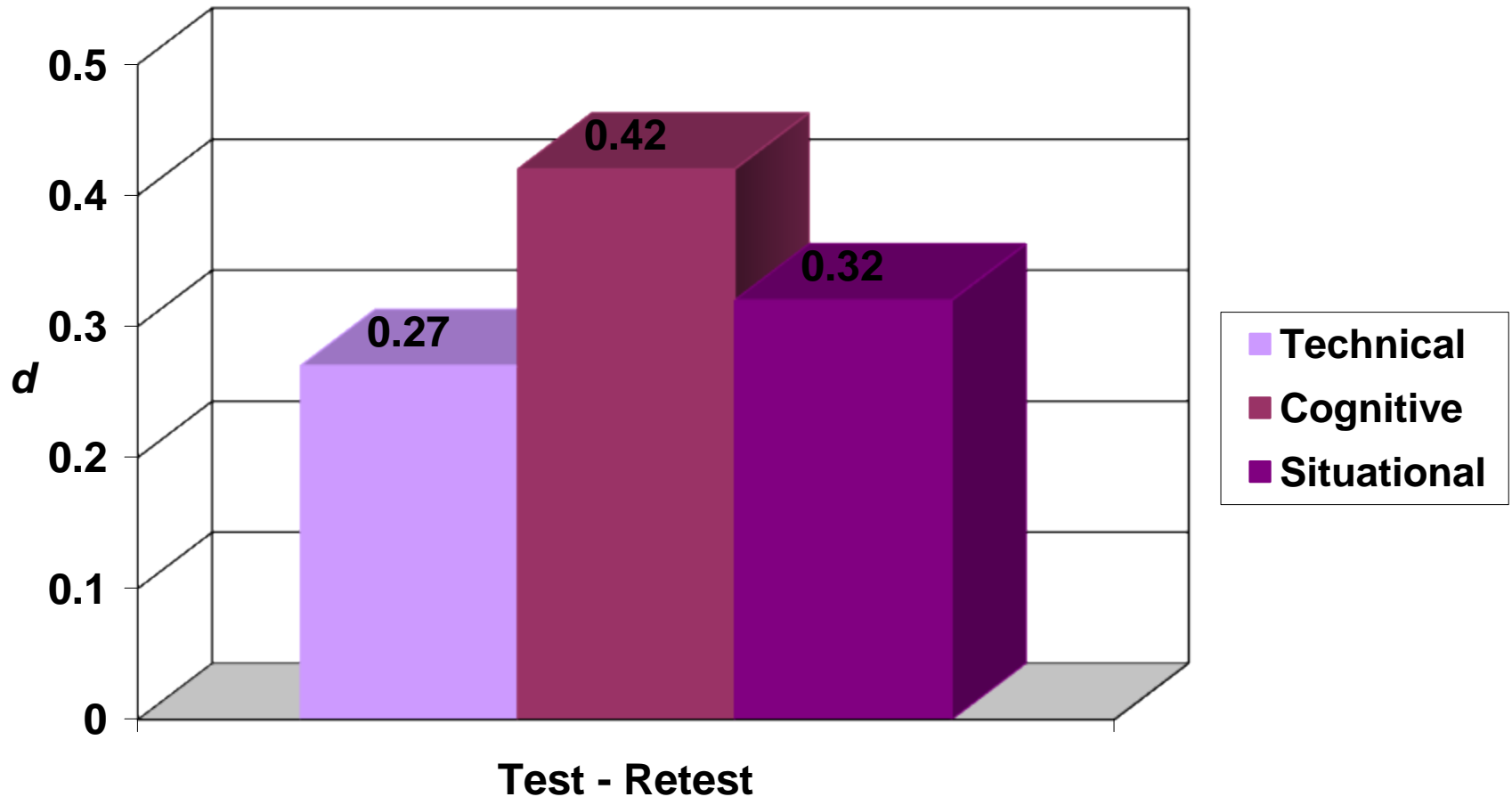


Adapted from Lievens, Buyse, & Sackett (2005)



Selection Research

Medical Entrance Exam Retest Effect Sizes



Adapted from Lievens, Buyse, & Sackett (2005)



Unpublished Research on Retesting Effects Based on the *CWH Selection Solutions* Firefighter Written Examination



Selection Solutions Firefighter Written Test

- First administration in 1997
- Administered to over 65,000 applicants
- Database contains 10,000+ repeat test takers
 - Approximately 3400 with 3 retests
 - Approximately 1300 with 4 retests
 - Approximately 500 with 5 retests
- Repeat test taker sample includes:
 - Applicants who have taken the up to 10 times
 - Applicants who have taken the test anywhere from one month after their initial session to up to nine years after their initial session



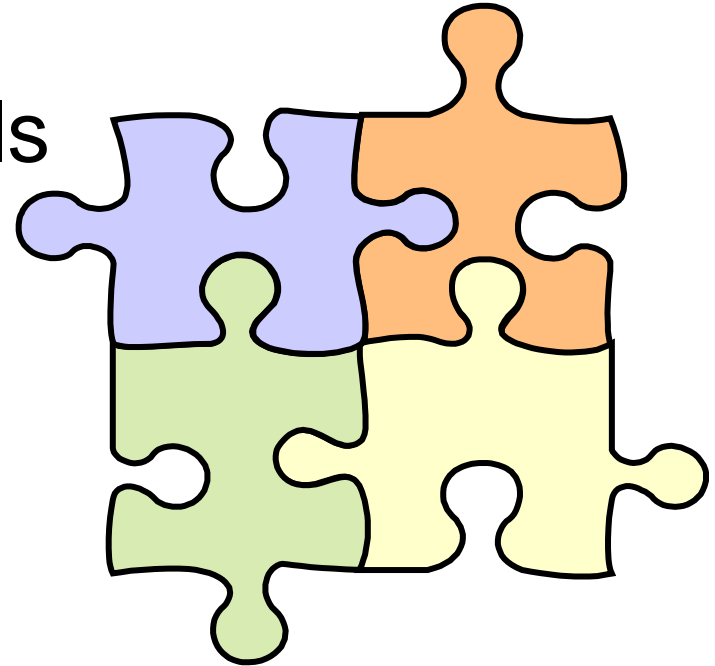
Characteristics of the *Selection Solutions Test*

- Not an ability or achievement test
- Uses situational items
- Uses practical (applied) based items
- Allows candidates to draw from their life experiences
- Measures dimensions that change over time as well as dimensions that remain fairly stable over time.



Components Included in the *Selection Solutions Test*

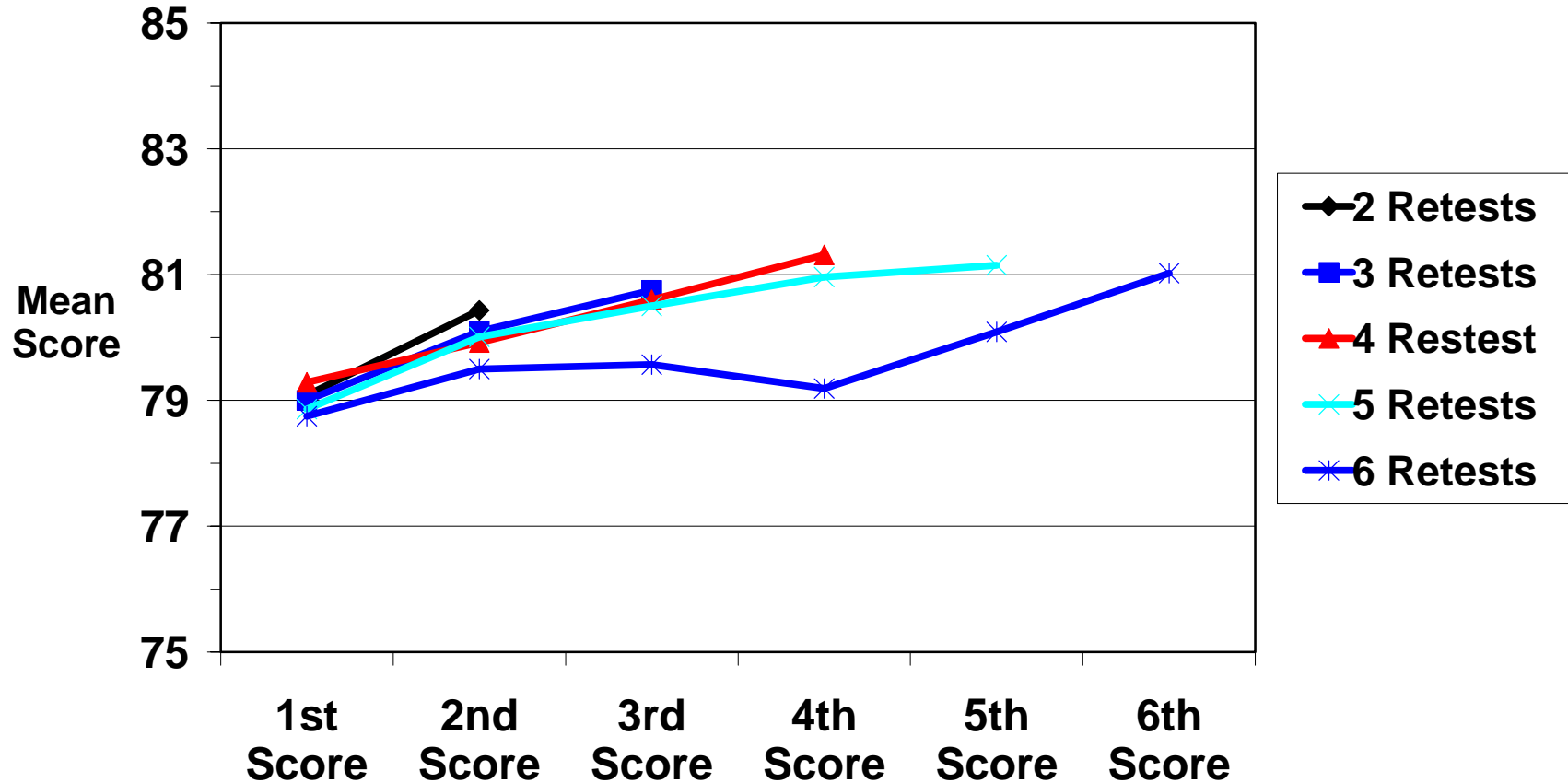
- Basic Educational Skills
- Practical Skills
- Interpersonal Skills
- Self Awareness Skills





Selection Solutions

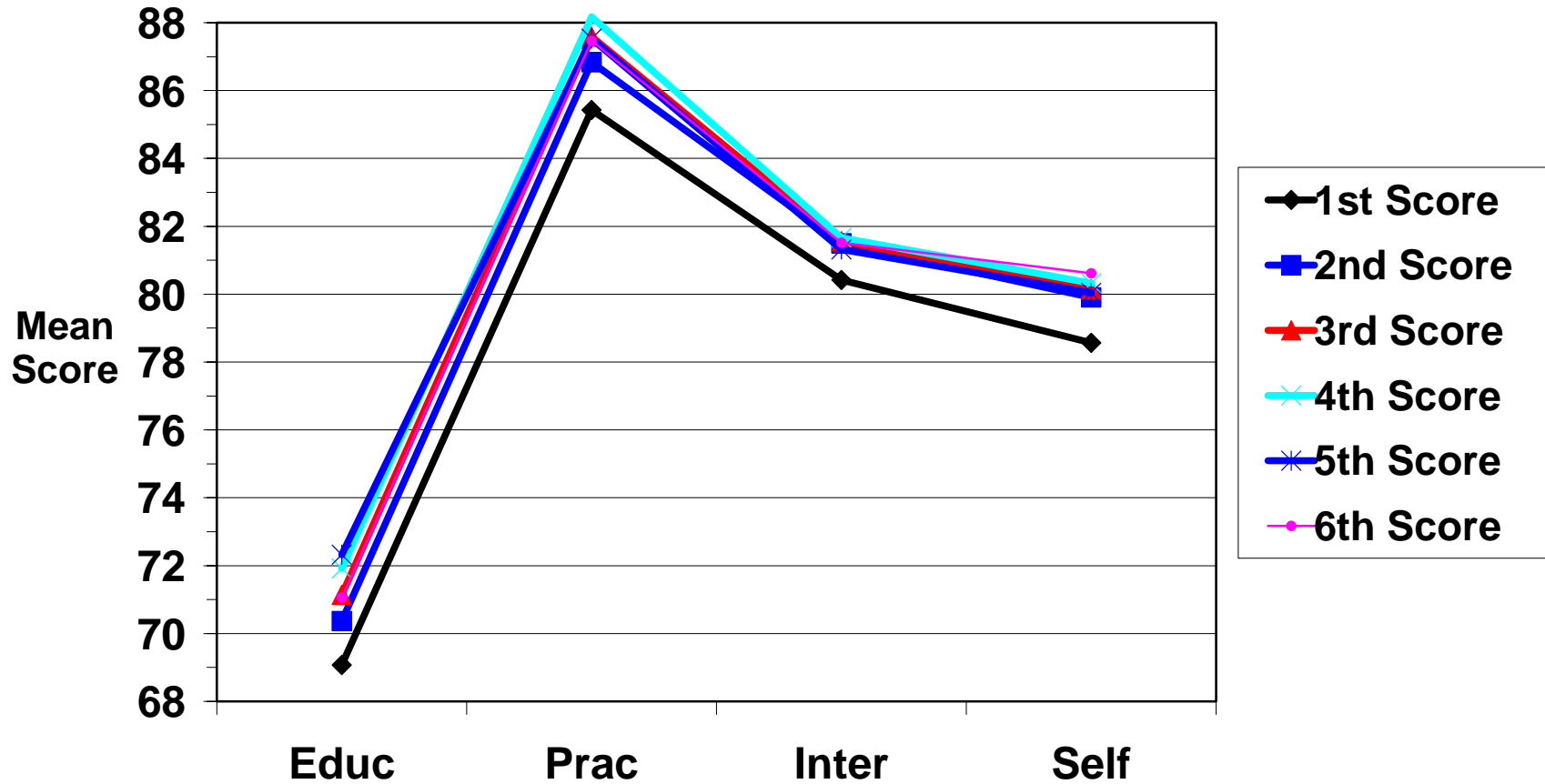
Firefighter Exam Test Scores





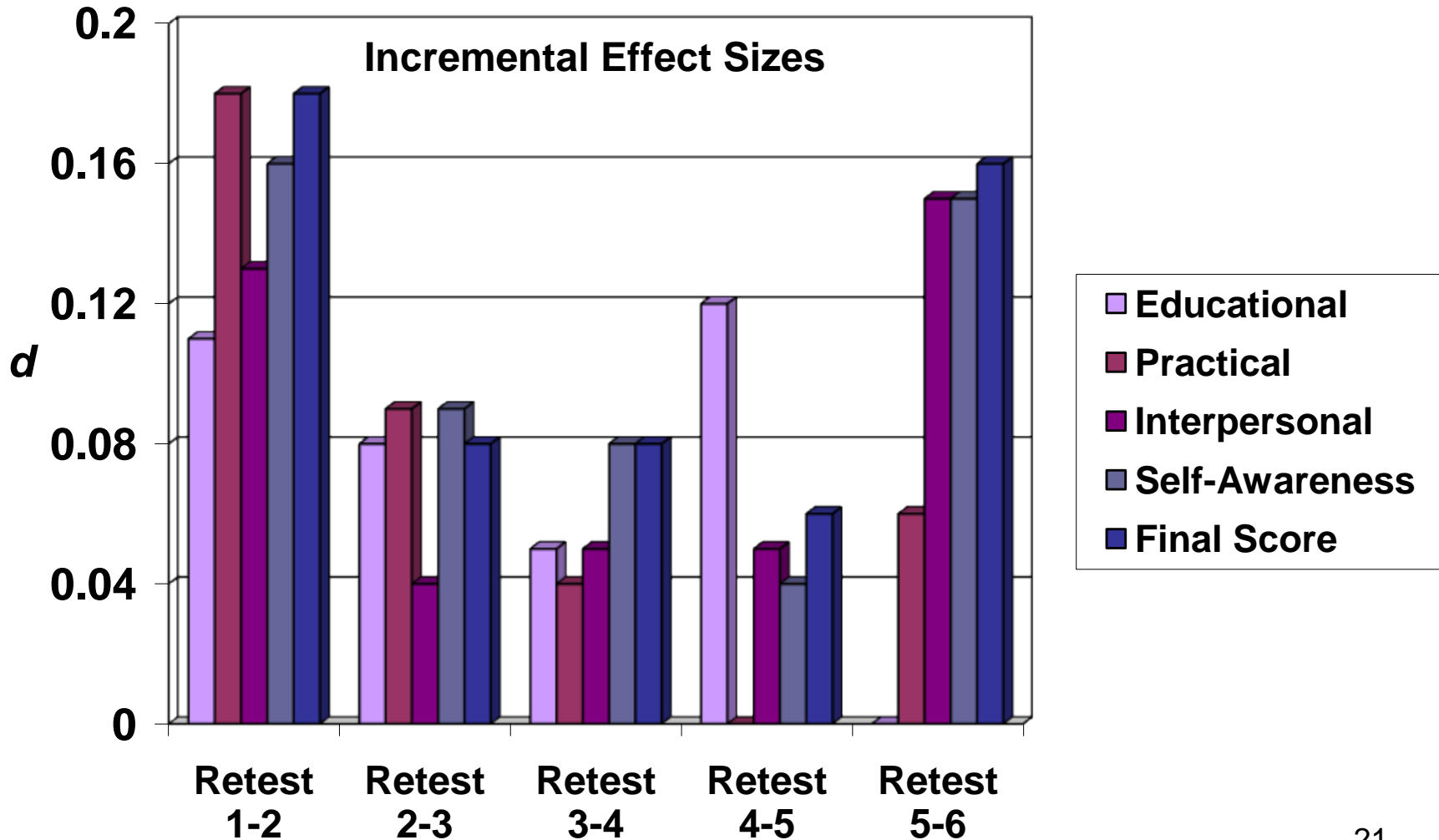
Selection Solutions

Firefighter Exam Test Scores



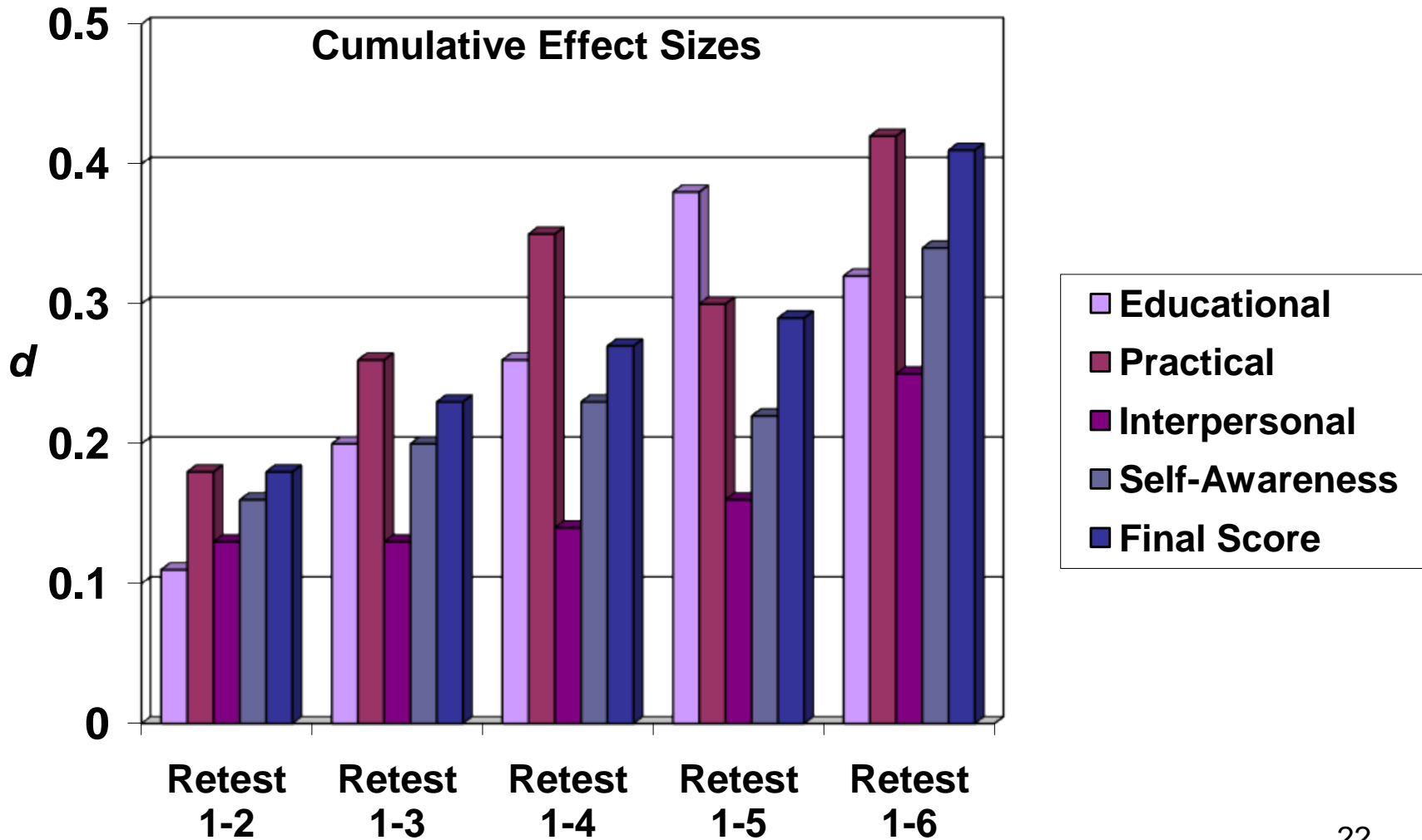


Selection Solutions Test-Retest Effect for Multiple Retests





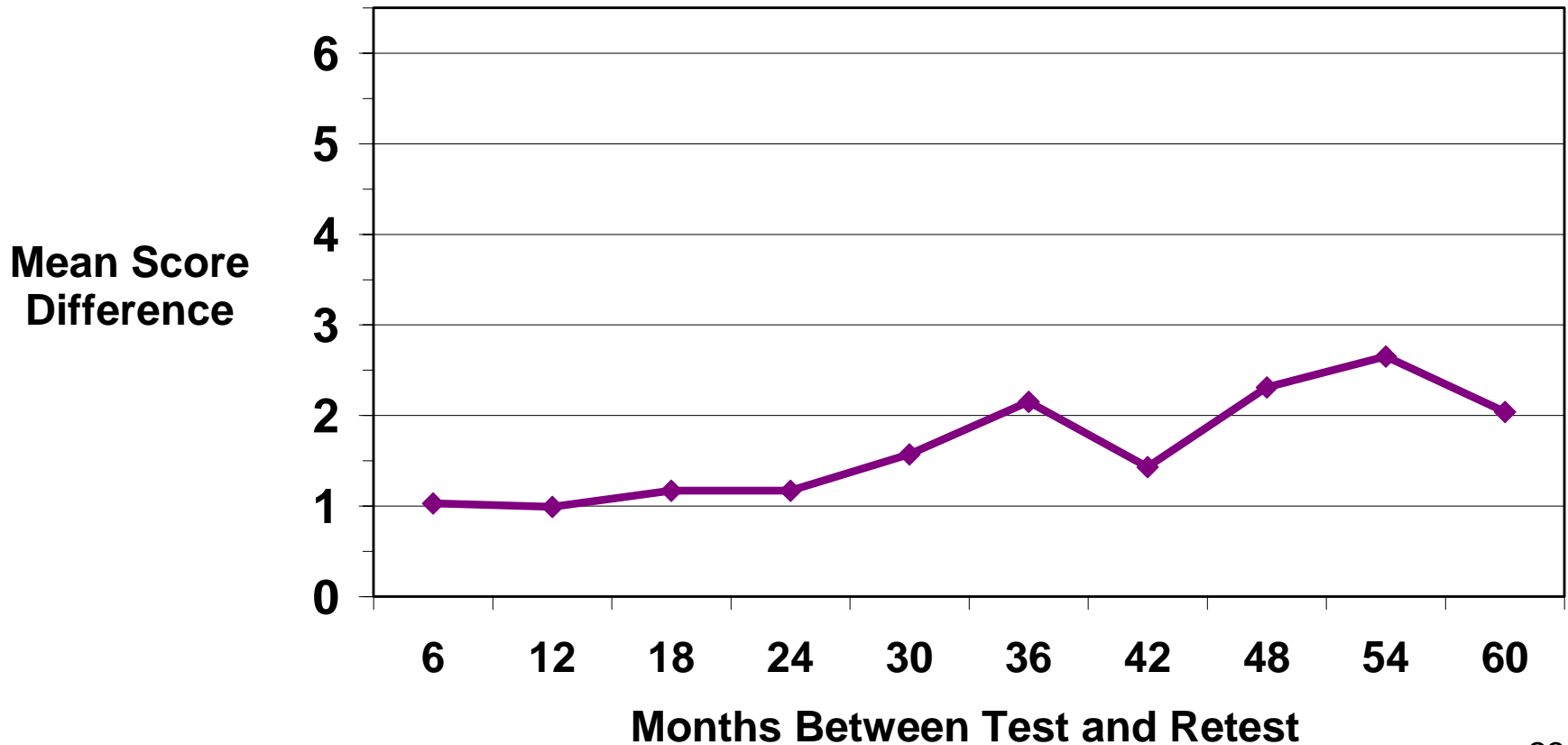
Selection Solutions Test-Retest Effect for Multiple Retests





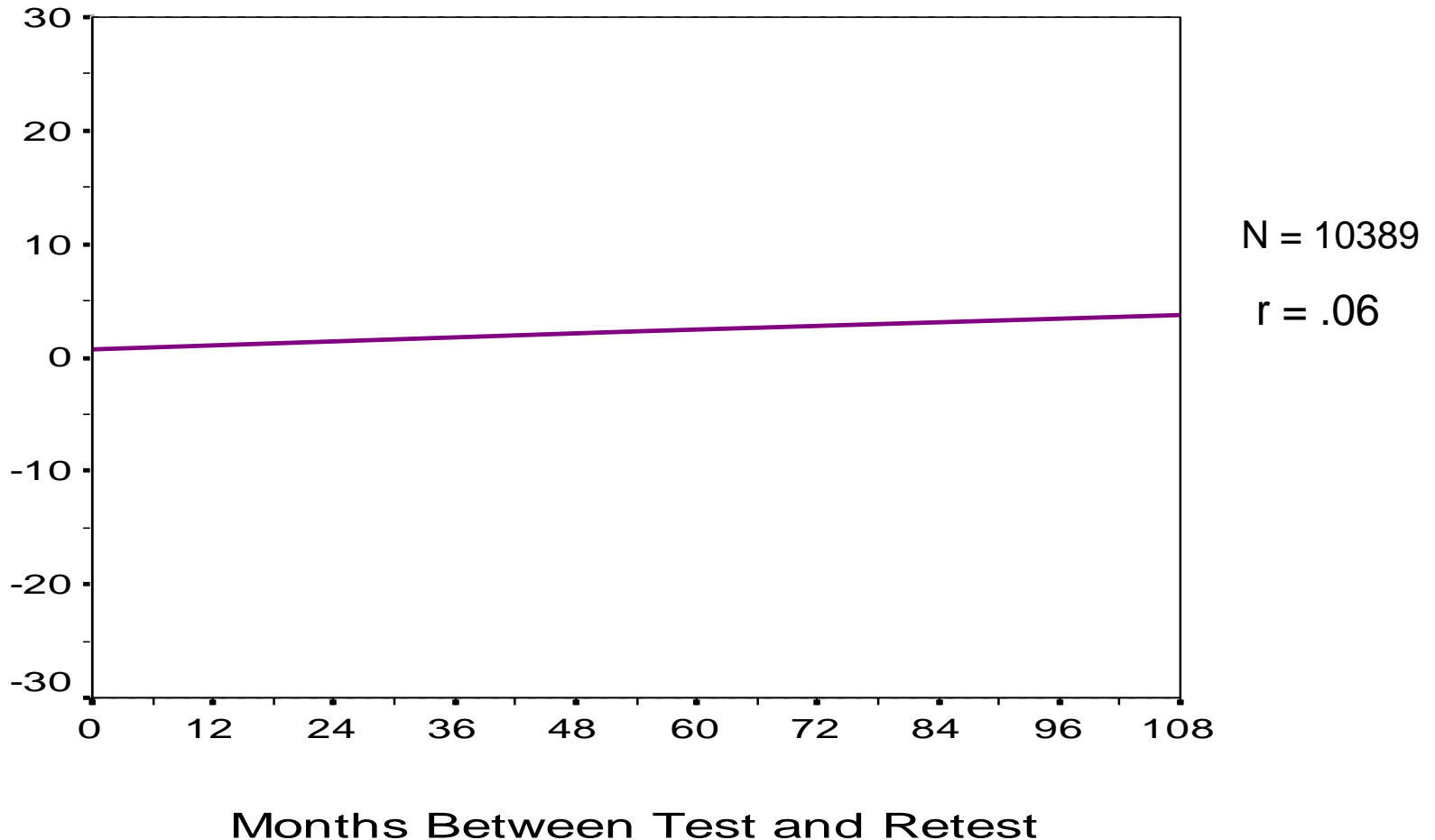
Selection Solutions Test-Retest Mean Score Differences Over Time

Overall Score





Selection Solutions Test-Retest Raw Score Differences Over Time





Implications (and Inferences) of Retesting



Potential Organizational Disadvantages When Candidates Re-Take Tests

- Practice effects appear to be consistent for the first retest
 - First time re-testers can enhance their “standing” relative to candidates taking the test for the first time
- When using cognitive ability tests, the scores increase incrementally with each retest
 - Subsequent scores may not be a true reflection on the candidate’s cognitive ability
- Test validity may be lower for retests
 - Academy training performance when hired after one test $r = 0.36$
 - Academy training performance when hired after retest $r = 0.24$
 - Retest scores had lower correlations with GPA



Potential Organizational Advantages When Candidates Re-Take Tests

- Retesting shows persistence and motivation
- Retesting positively correlated with performance
 - Each retest was associated with a 12% SD increase in police academy test scores
- Retesting positively correlated with job retention
 - As police entry retests increased, turnover decreased
- Scores on dimensions that are related to life experience and educational skills can improve over time
 - Retesting allows candidates to demonstrate this improvement
- Scores on dimensions that are related to traits that are stable over time do not change with repeated retesting



References & Readings

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