


Top 10 Questions: *Validity of a State Accountability System Using the COSF*

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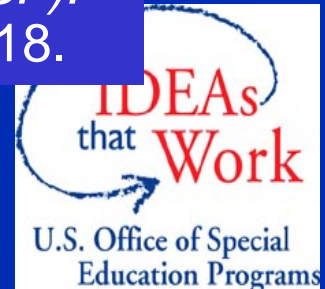
October 20, 2007





Our partners in this work: Margy Hornback (KS) Birth-5 Marybeth Wells (ID) Section 619

Some of these data are published in Greenwood, C. R., Walker, D., Hornback, M., Hebbeler, K., & Spiker, D. (2007). *Progress developing the Kansas Early Childhood Special Education Accountability System: Initial findings using the ECO Child Outcome Summary Form (COSF)*. *Topics Early Childhood Special Education*, 27(1), 2-18.





Validity of an Accountability System

- An accountability system can be said to have validity when evidence is judged to be strong enough to support inferences that:
 - The components of the system are aligned to the purposes, and are working in harmony to help the system accomplish those purposes
 - The system is accomplishing what was intended (and did not accomplish what was not intended) (Marion et al., 2002, pg. 105)



The Validity of an Accountability System

- Requires answers to a number of logical questions demonstrating that the parts of the system are working in harmony as planned
- Validity is improved by improving the quality and integrity of the parts in the system
- Validity requires continued monitoring and improvement



1. COSF Validity Suppositions, Questions and Evidence

- The Anchor Indicators Used in the COSF Process are Mapped to the OSEP Outcomes via a Cross-Walk
 - Have the Anchor Indicators been cross-walked to the 3 OSEP outcomes?
 - Do the Anchor Indicators have evidence of validity and reliability?



2. COSF Validity Suppositions, Questions and Evidence

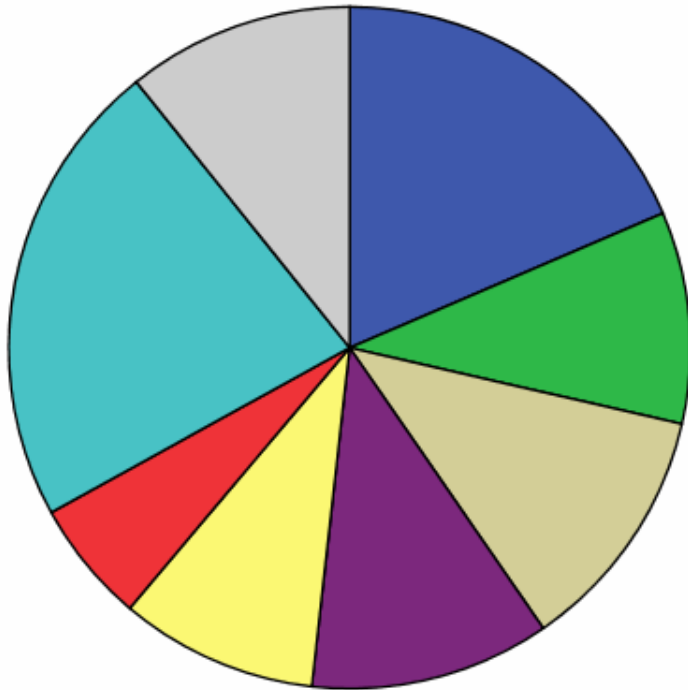
- The COSF Process Involves Multiple Participants and Sources of Evidence
 - Are multiple adults participating in the process?
 - Are parents participating in the process?
 - Are multiple sources of evidence being used?
- COSF Ratings Should Display Differences Between Children's Performance
 - Is the distribution of COSF ratings distributed across the 1 to 7 scale?
 - Are fewer children scored 1 and 7, and more children scored 3, 4, and 5?

Team Roles Make Up

Roles less than 3% Collapsed to Other

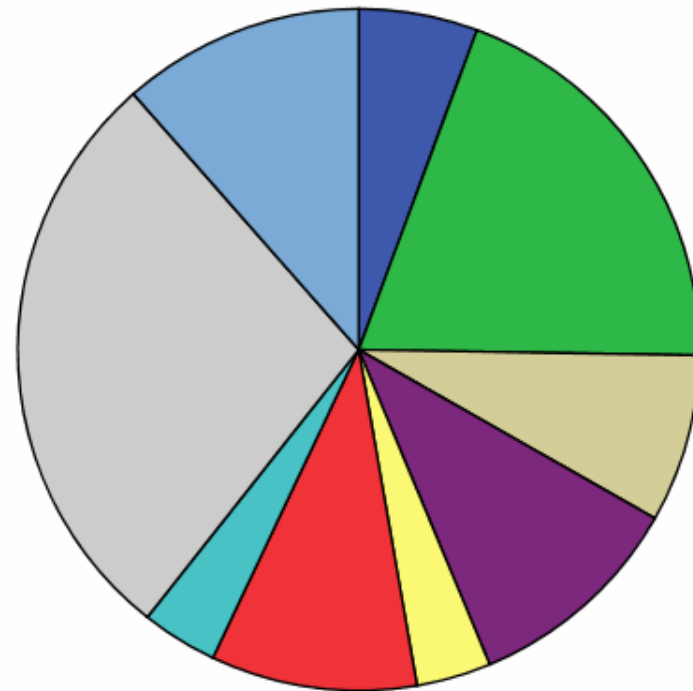
PartID: C

- Role
- ECSE Teacher
 - Family Service Coordinator
 - Occupational Therapist
 - Parent/Legal Guardian
 - Physical Therapist
 - Social Worker
 - Speech Language Pathologist
 - Other



PartID: B

- Role
- Early Childhood Teacher
 - ECSE Teacher
 - Occupational Therapist
 - Parent/Legal Guardian
 - Physical Therapist
 - Psychologist
 - Social Worker
 - Speech Language Pathologist
 - Other





Parents and Ratings

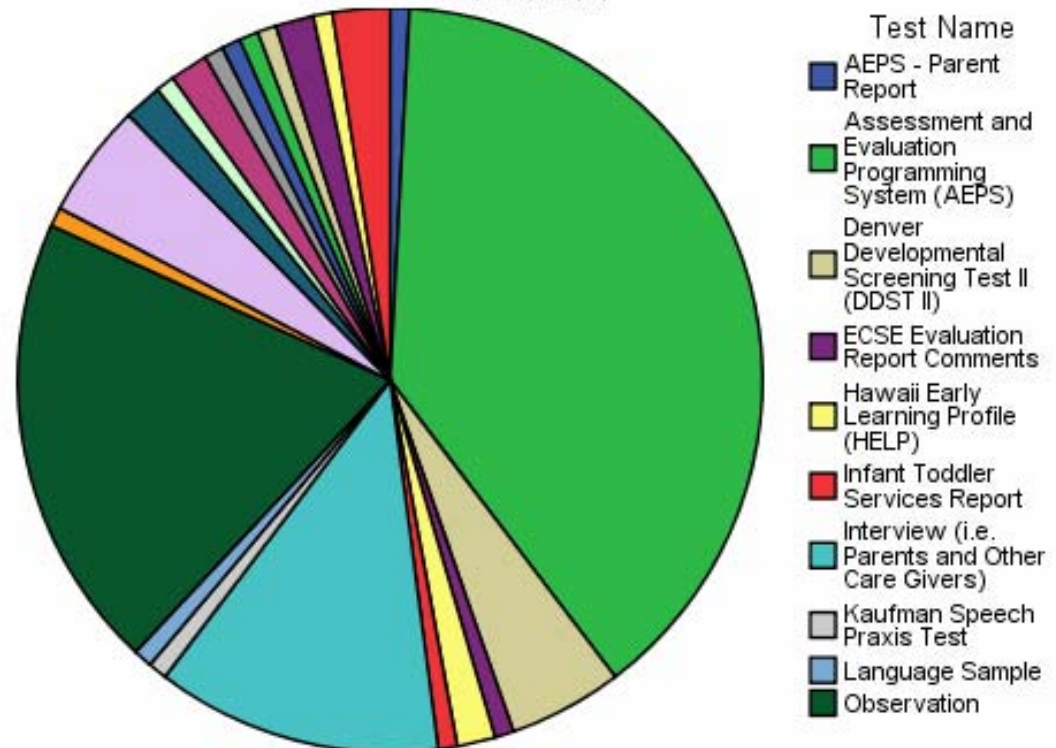
- How many children have a parent providing the rating
 - 731 out of 2388 (31%)
- Other Family Members?
 - Foster Parent = 10
 - Grandparent = 12
 - Advocate = 5
 - Baby Sitter = 2

Evidence Sources Reported in One District (Part B)

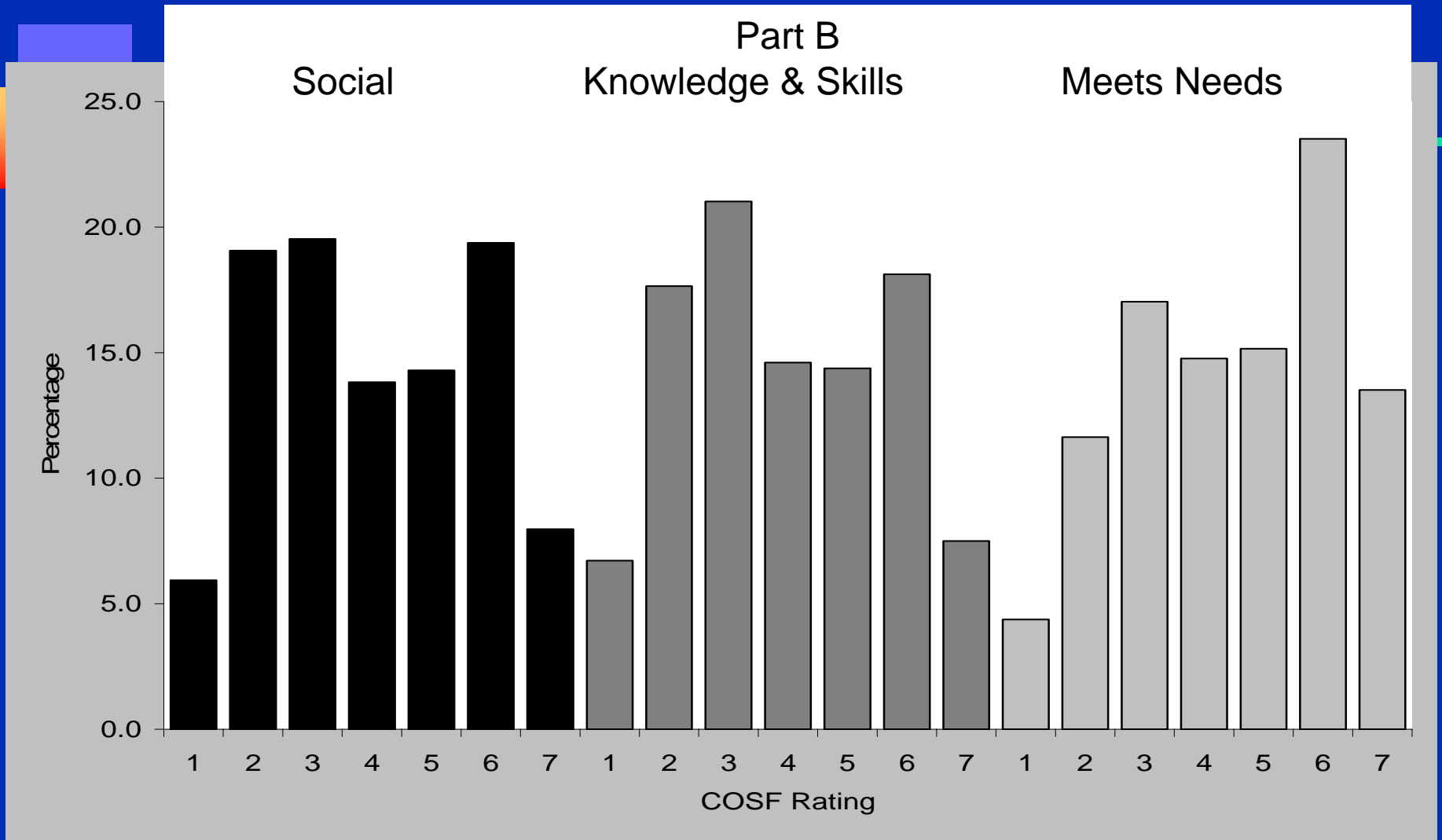
Entity D0512

Evidence Sources

Outcome: 1

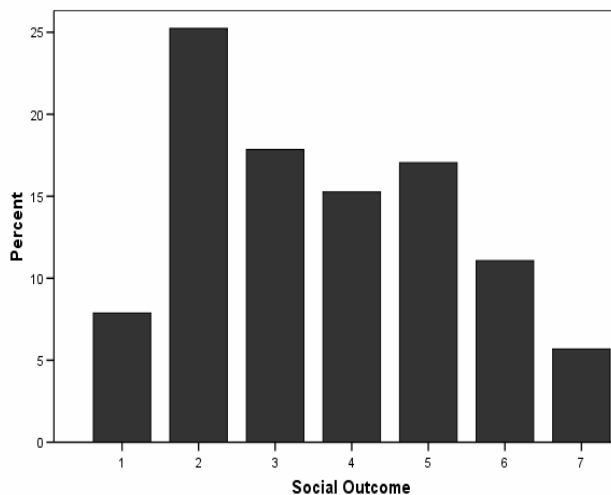


Kansas – Part B

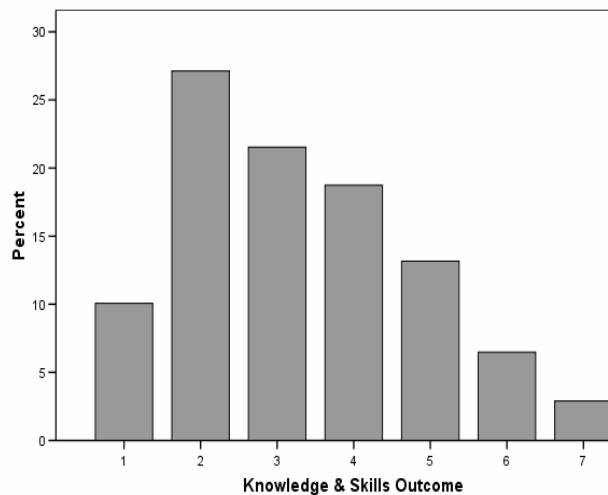


Idaho – Part B

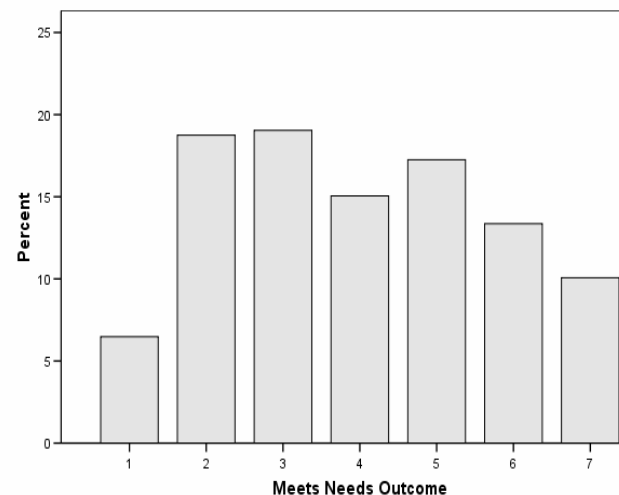
Social Outcome



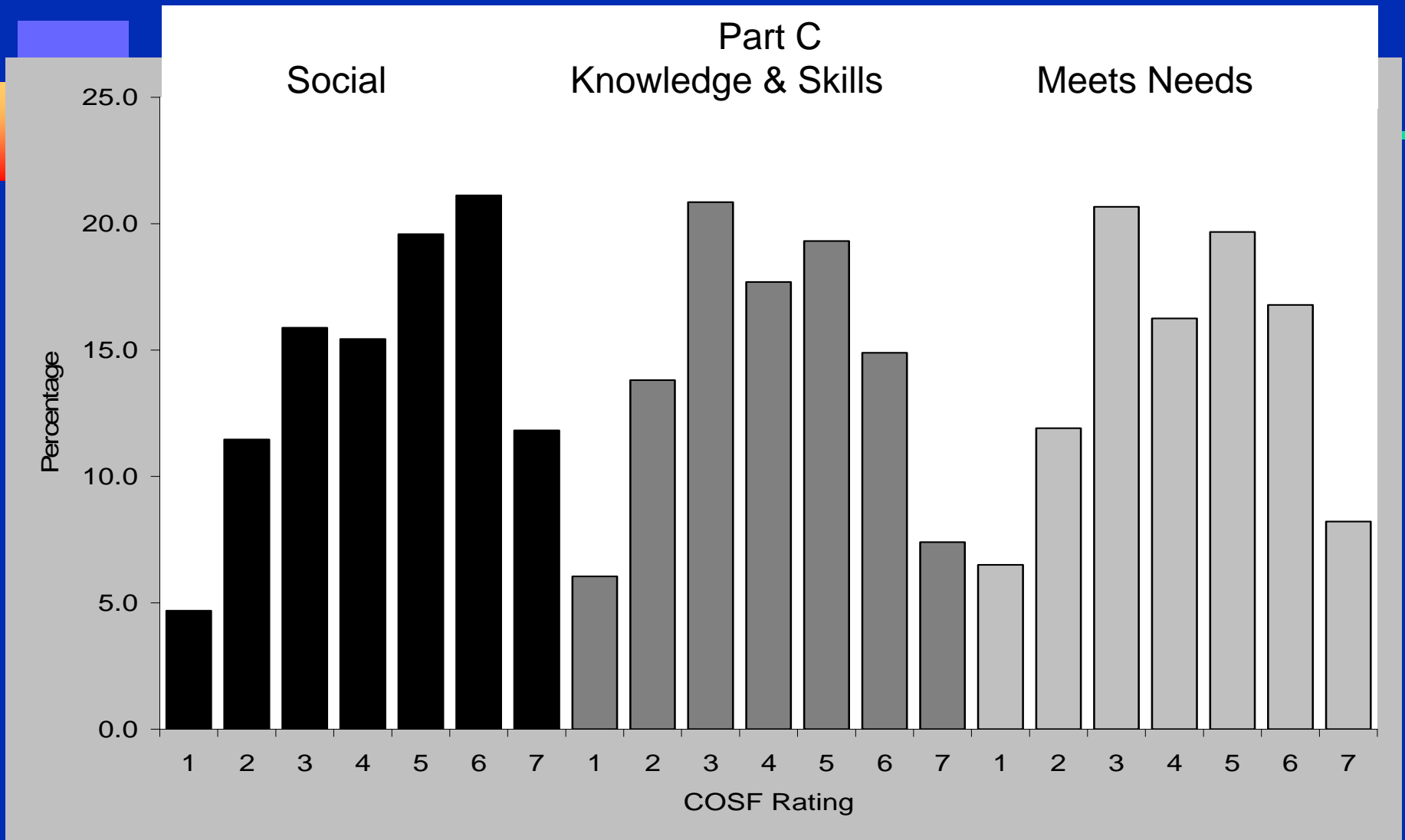
Knowledge & Skills Outcome



Meets Needs Outcome



Kansas – Part C





3. COSF Validity Suppositions, Questions and Evidence

- OSEP Outcomes are Defined Functionally, Therefore, They Should be Highly Inter-correlated
 - Are the three outcomes highly inter-correlated?
 - Does each outcome contribute unique information?
- COSF ratings should be at least moderately (not strongly) correlated with the anchor-primary assessment measure
 - What is the concurrent validity correlation with the primary assessment measure?
 - Is there a linear, increasing relationship between ratings and mean test scores?

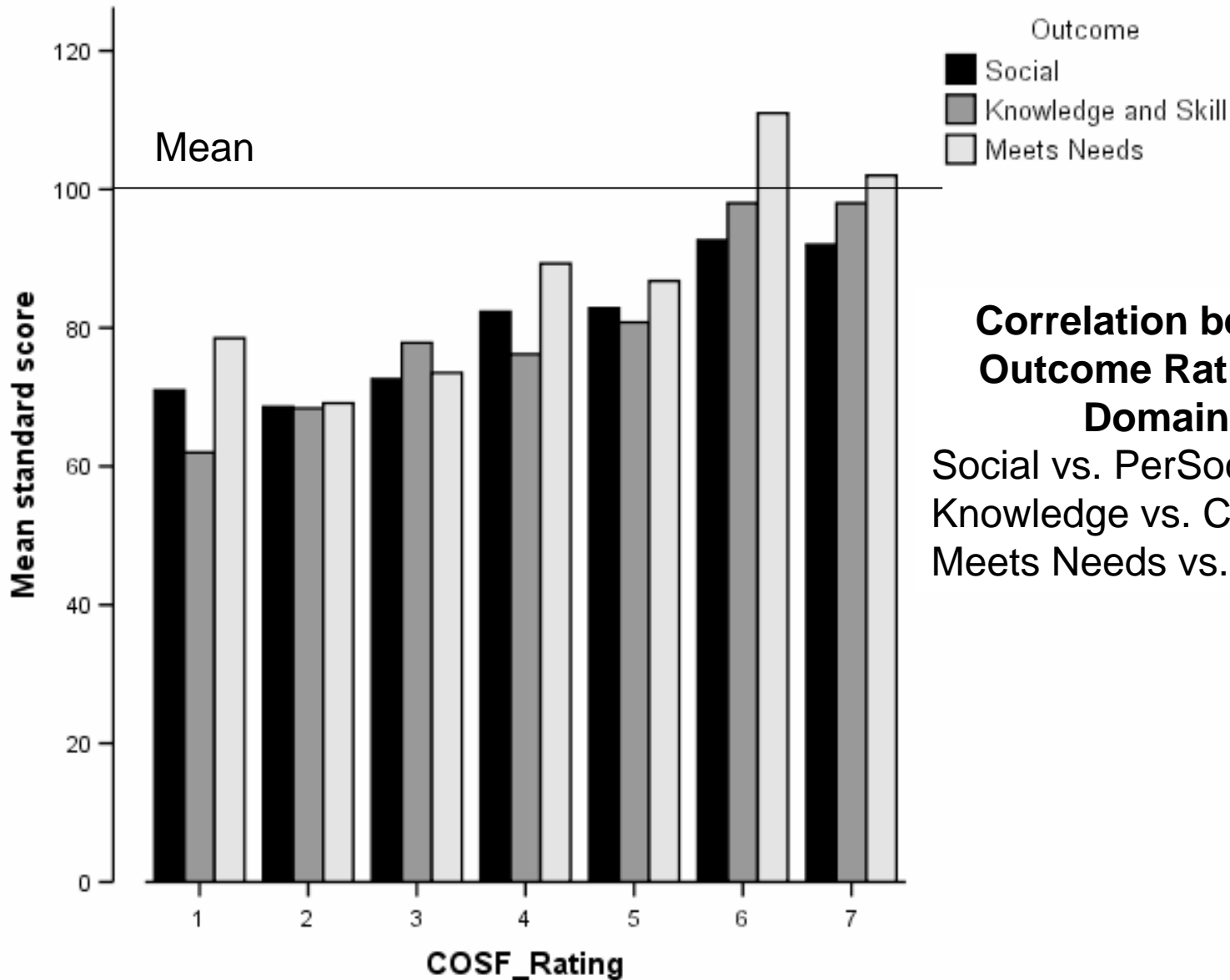
Correlations Between Entry Outcomes

Pair	State and Part		
	ID (B)	KS (B)	KS (C)
Know vs Meets	.726	.732	.633
Social vs Meets	.799	.743	.620
Know vs Social	.782	.774	.758
N Children	1003	1280	1108

Entry Correlations When Controlling for the Third Outcome

Control For	Pair	ID (B)	KS (B)	KS (C)
Social	Know vs. Meets	.270	.371	.320
Know-ledge	Social vs. Meets	.540	.408	.276
Meets Needs	Know vs. Social	.488	.505	.602
	<i>N</i> Children	1003	1280	1108

BDI Domain Means by COSF Rating



Correlation between COSF Outcome Ratings And BDI Domain Scores

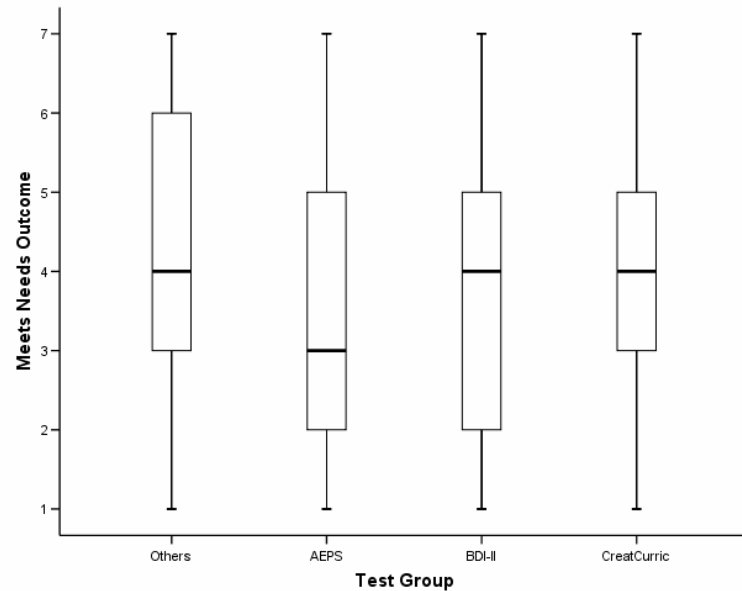
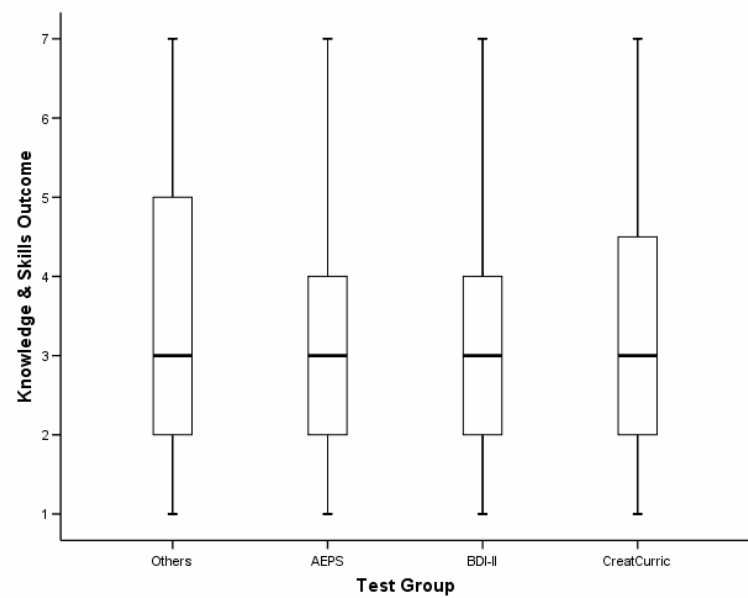
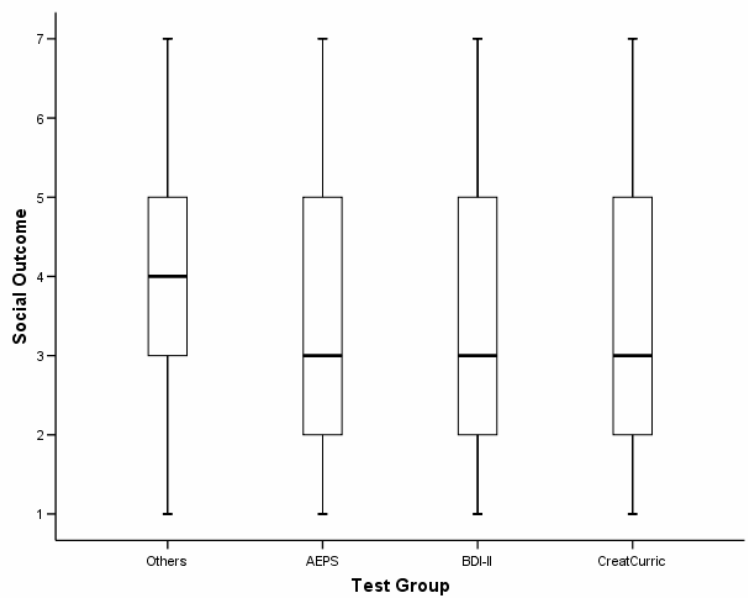
Social vs. PerSocial = .65
Knowledge vs. Cognitive = .62
Meets Needs vs. Adaptive = .61



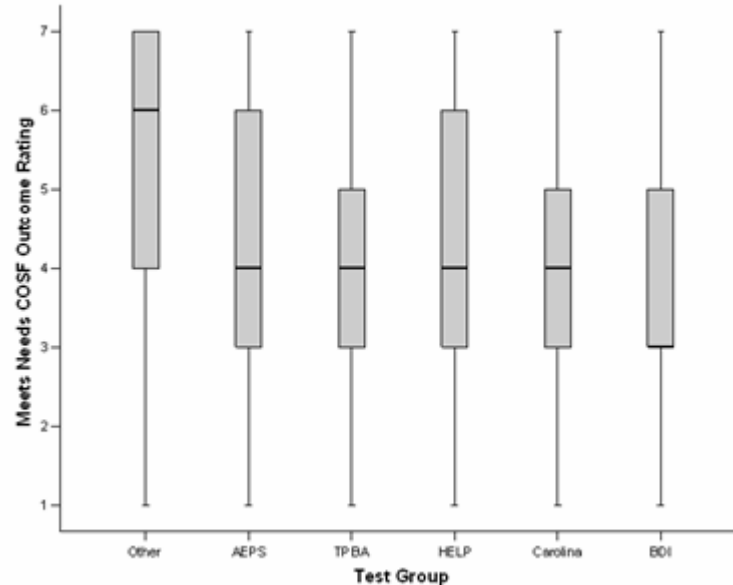
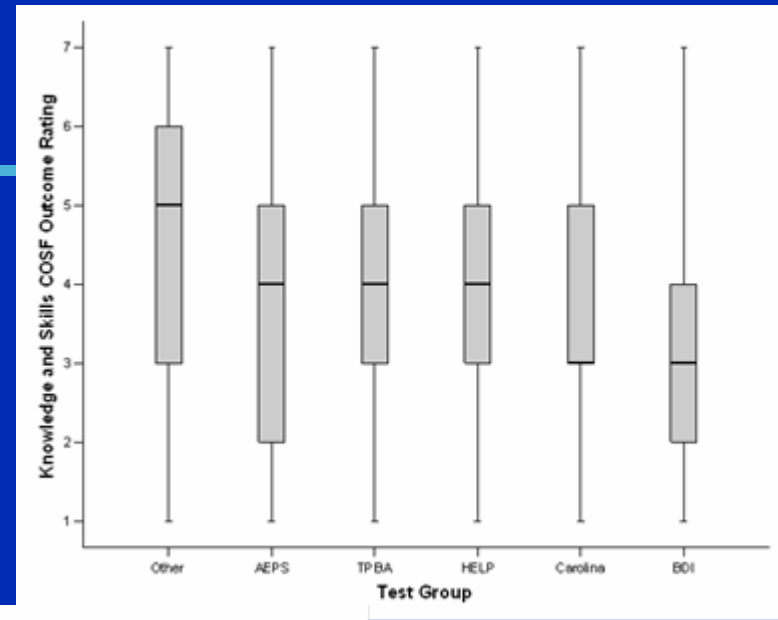
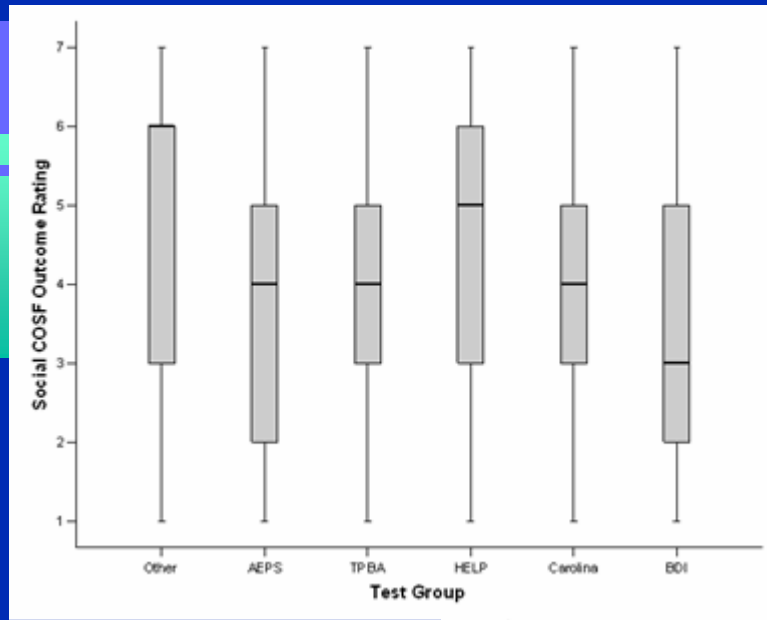
4. COSF Validity Suppositions, Questions and Evidence

- COSF Ratings Should Not Be Affected by Conditions in the State's COSF Process
 - Are there differences due to use of different Anchor tests?
 - Are there differences by region or program?

By Anchor Test (ID)



By Anchor Tests in KS





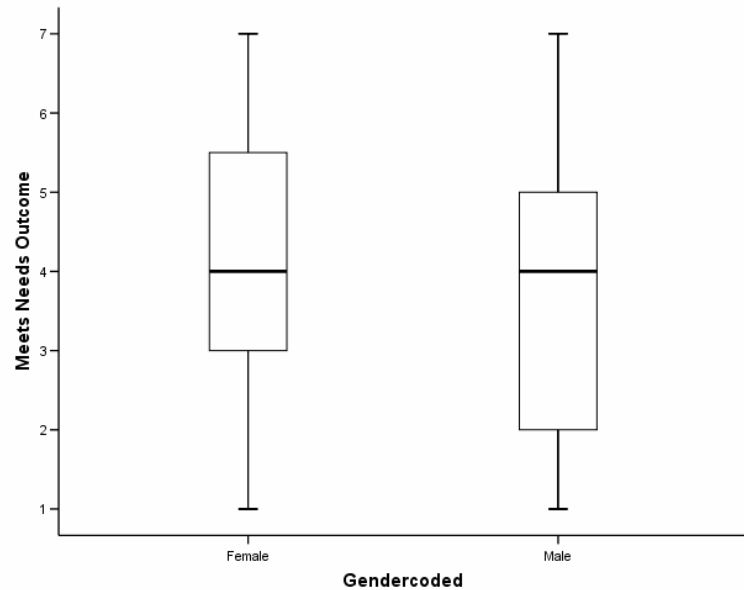
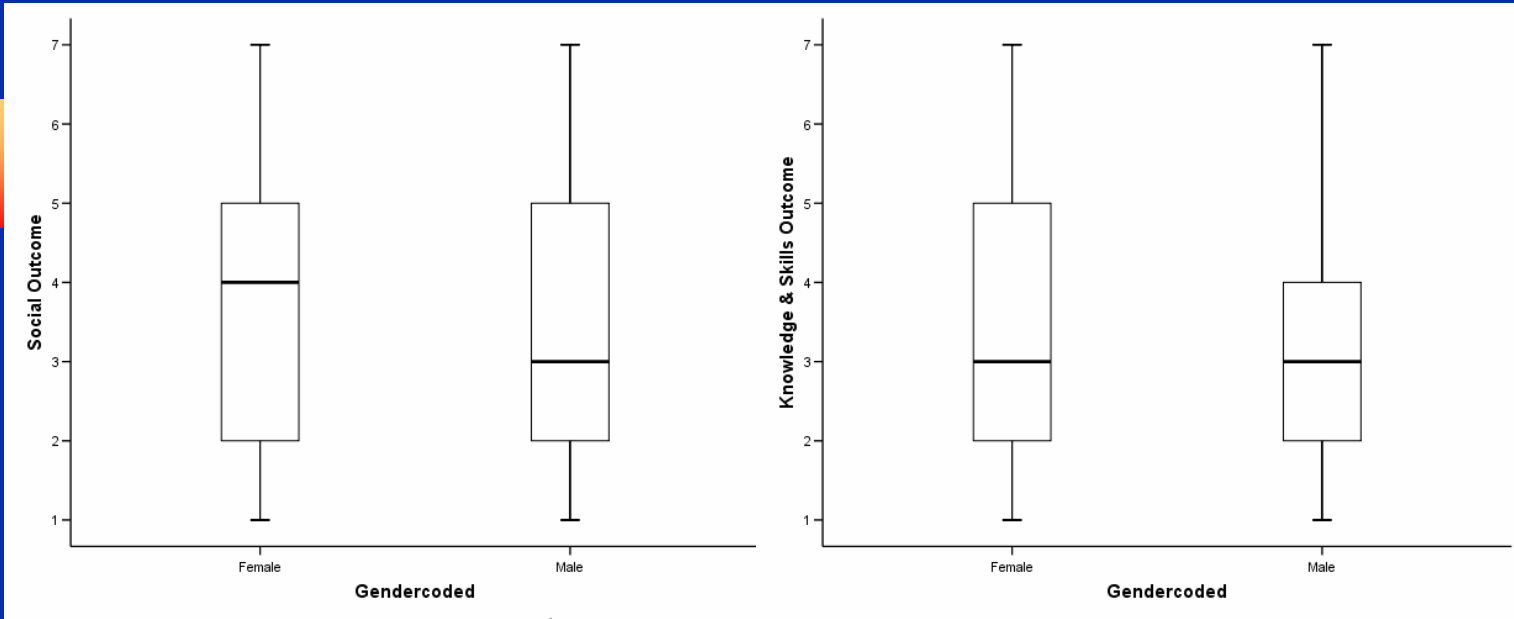
5. COSF Validity Suppositions, Questions and Evidence

- COSF Ratings Should Not Be Affected by Variability in the Quality (Fidelity) of a State's Team Decision Making Process
 - Based on video or live observations of teams making decisions, what is the quality of implementation?
 - What is the variability in implementation quality across sites within a state?
 - What is the relationship between implementation variability and child outcomes?

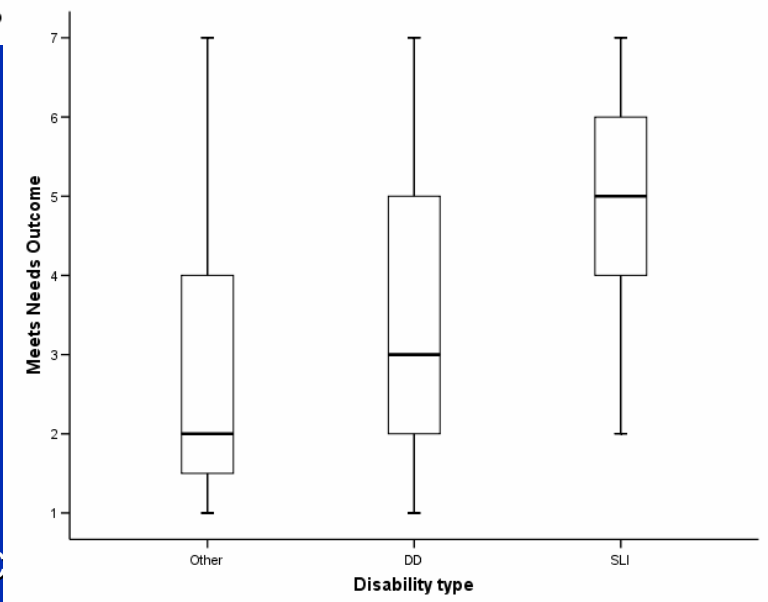
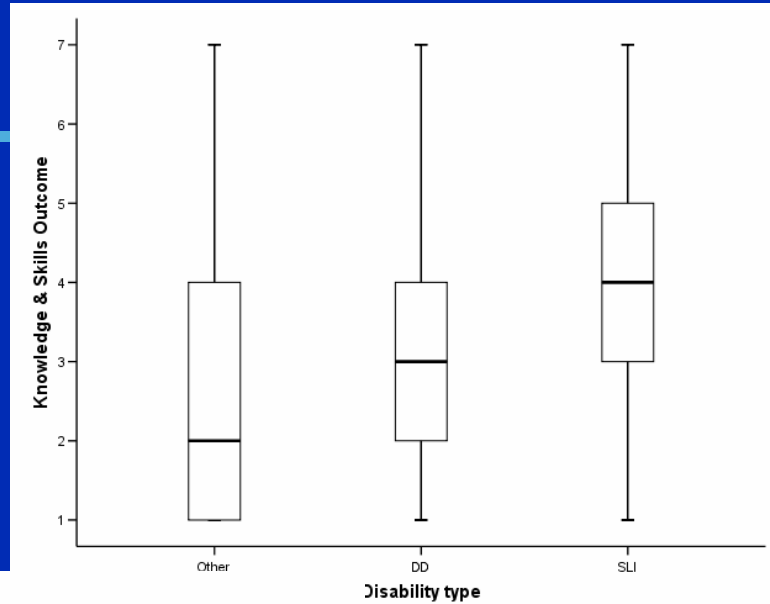
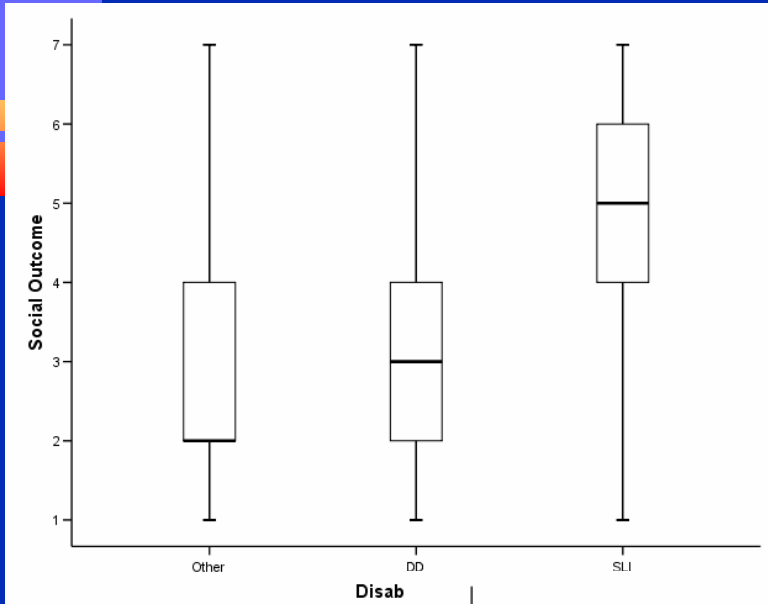
6. COSF Validity Suppositions, Questions and Evidence

- Theoretically, We Might Expect COSF Ratings to be Influenced by Severity, Gender, Home Language Differences, etc.
 - Are there differences in COSF ratings due to type of disability?
 - Are boys rated lower than girls on the Social Outcome? (boys tend to have more behavior problems than girls)
 - Are English Language Learners rated lower on the Knowledge and Skills Outcome?

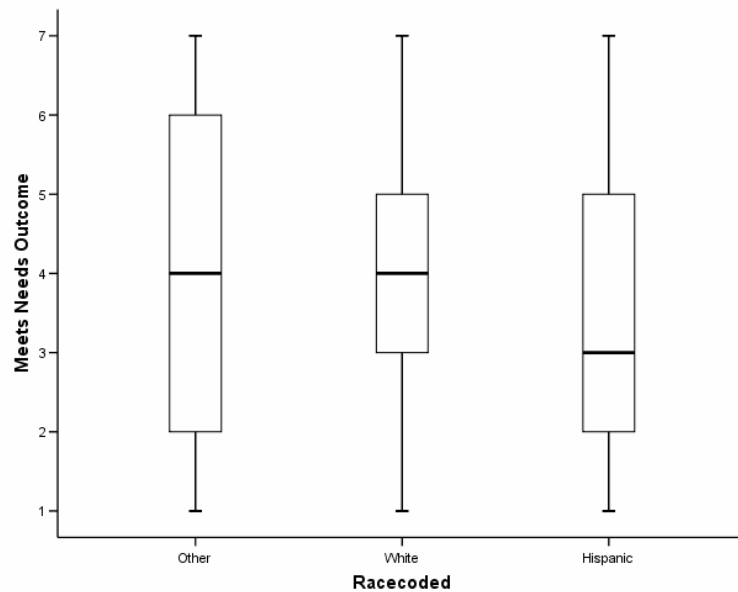
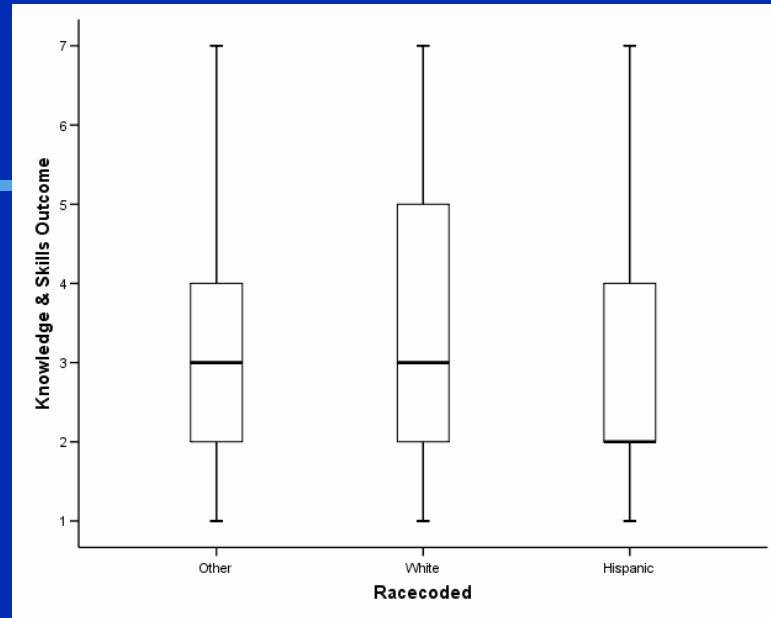
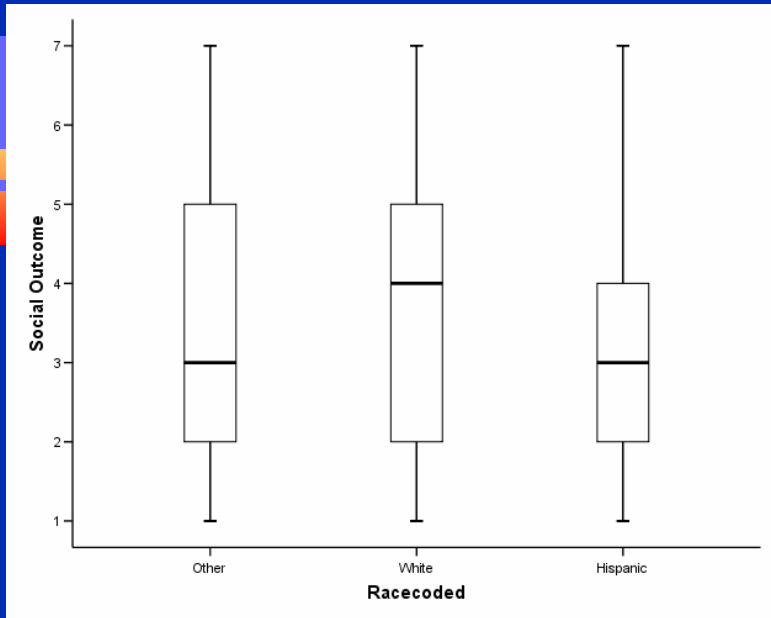
By Gender (ID)



By Disability (ID)



By Race (ID)





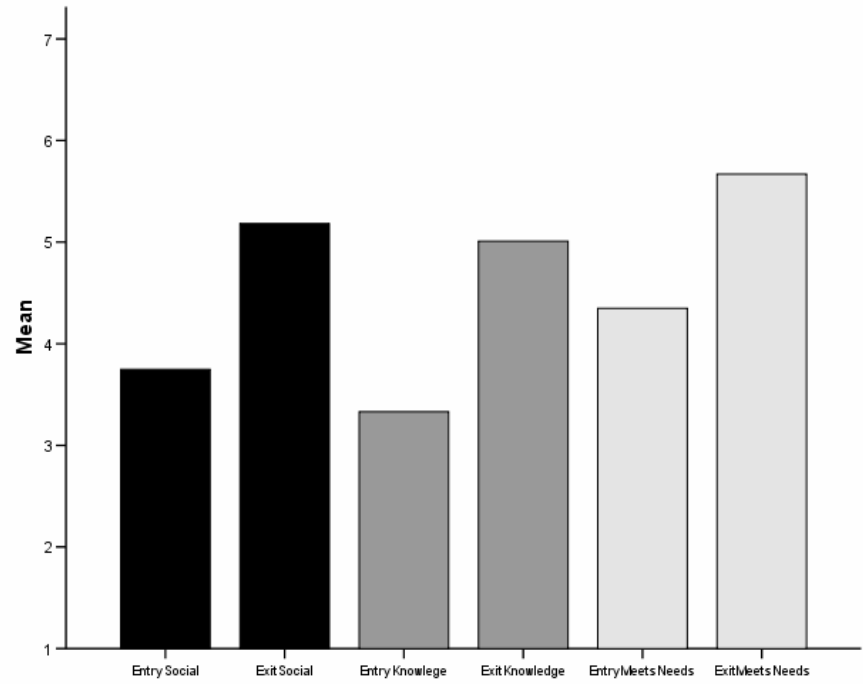
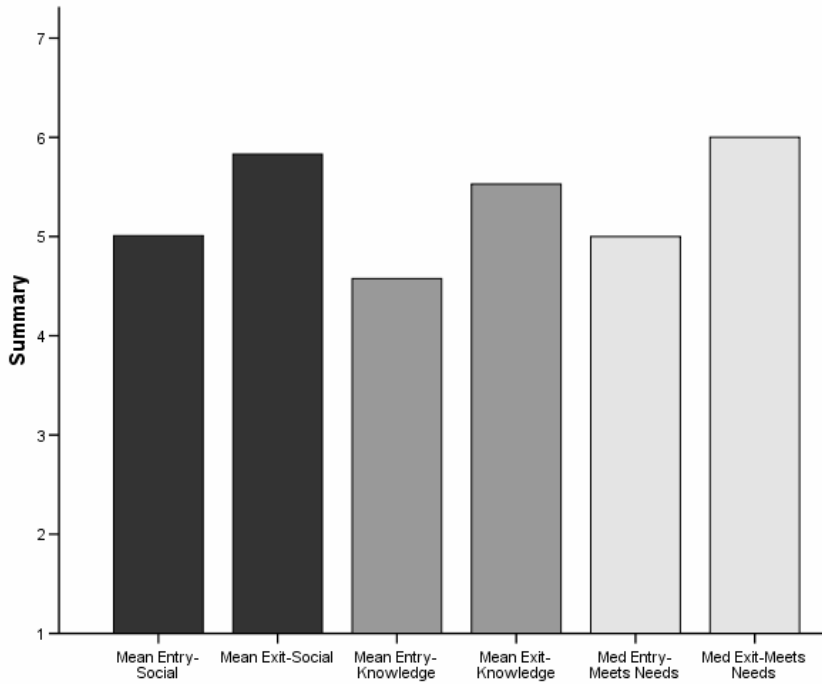
7. COSF Validity Suppositions, Questions and Evidence

- Theoretically, We Expect COSF Ratings Will Be Sensitive to Growth and Early Intervention Over Time
 - Are COSF exit rating distributions skewed to the right, indicating children scoring higher at exit compared to entry?
 - Are there gains in COSF ratings when comparing entry to exit?
 - Are these gains statistically significant, and what are the effect sizes?

What growth is evident?

KS

ID



What GAIN in Rating: KS?

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
gainSocial	106	-4.00	5.00	.8208	1.34375
gainKnow	106	-3.00	5.00	.9528	1.48889
gainMeets	106	-4.00	5.00	.8302	1.51483
Valid N (listwise)	106				

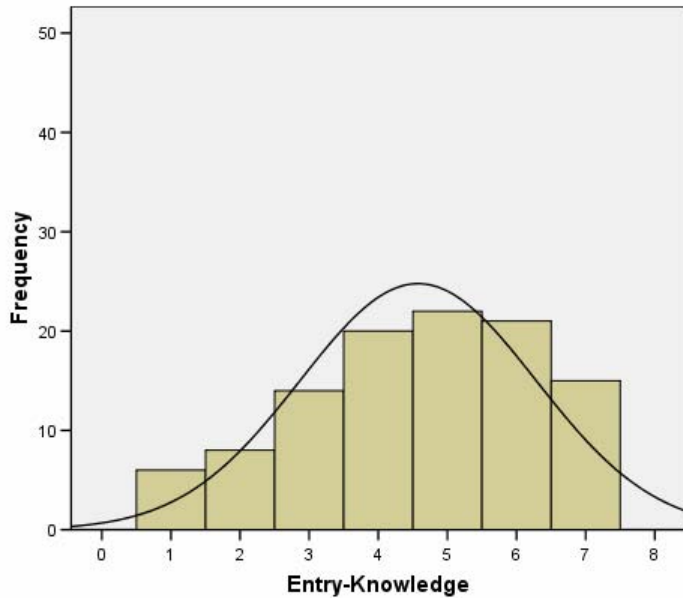
What GAIN in Rating: ID?

Descriptive Statistics

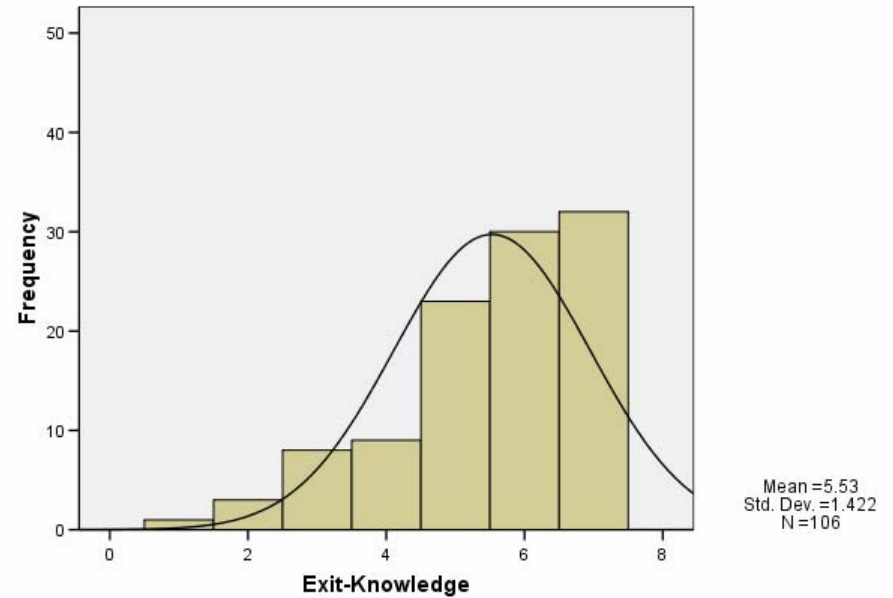
	N	Minimum	Maximum	Mean	Std. Deviation
gainSocial	115	-1.0	4.0	1.435	1.0852
gainKnowledge	115	.0	5.0	1.678	1.0966
gainMeetsNeeds	115	-1.0	5.0	1.322	1.2179
Valid N (listwise)	115				

Change in Knowledge Distribution: KS

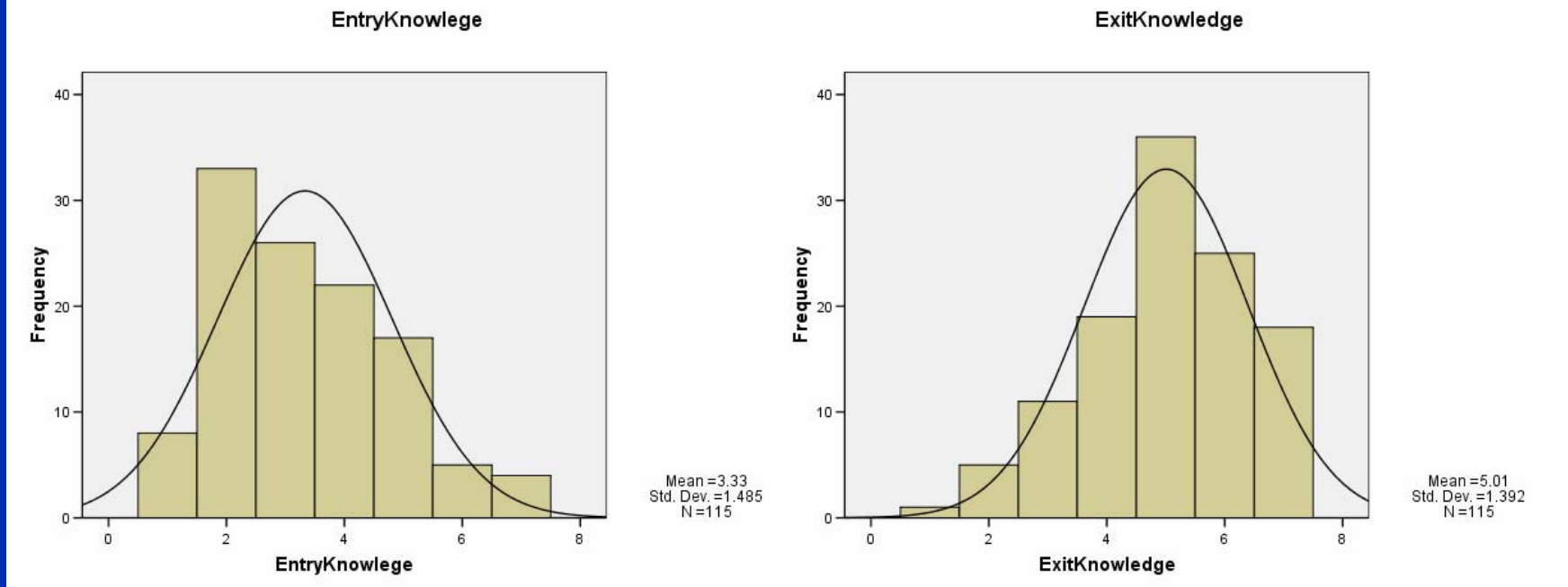
Entry-Knowledge



Exit-Knowledge

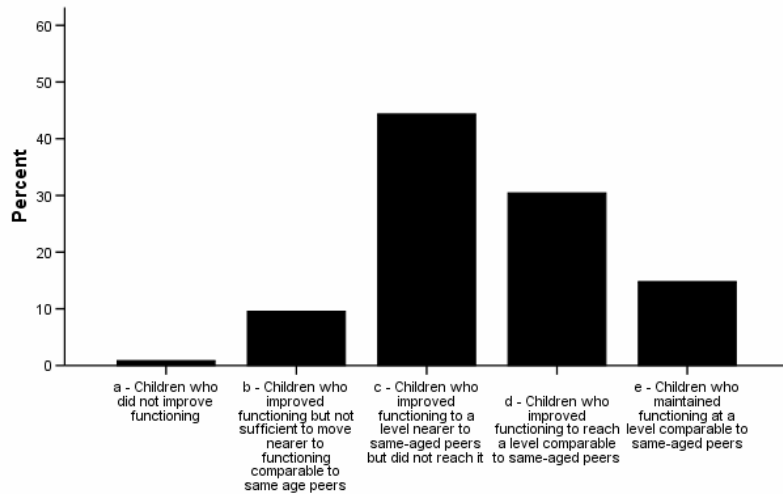


Change in Knowledge Distribution: ID



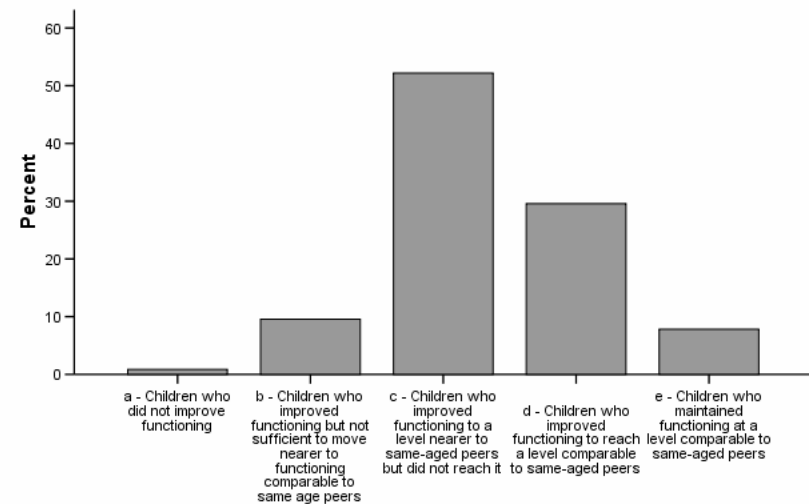
A State's OSEP Outcome Distributions

OSEPSocial



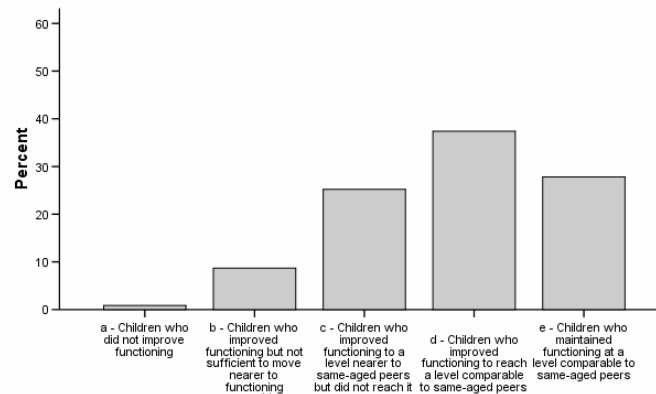
OSEPSocial

OSEPKnow



OSEPMeet

OSEPKnow



OSEPMeets

COSF Acquired Any New Skills Coding Error to Check for!

- “Yes” or “No” and the New Skills Question?
 - No
 - Means no new skills acquired
 - “no” can not be associated with ratings that go up from entry to exit (e.g., 3 to 4 always = “yes”)
 - 1 to 1 always = no
 - Yes
 - Means new skills were acquired
 - 7 to 6 (child means child is still typical)
 - 6 to 3 (child declined but showed some new skills)
 - 2 to 2, 3 to 3, etc (staying the same rating in COSF = yes, new skills acquired)
 - http://www.fpg.unc.edu/~ECO/pdfs/Summary_of_Rules_COSF_to_OSEP_8-9-07.pdf



8. COSF Validity Suppositions, Questions and Evidence

- Theoretically, We Expect Gains in COSF Exit Ratings to be Explained by Early Intervention Service Factors
 - Are gains in COSF ratings explained by length of service?
 - Are gains in COSF ratings explained by intervention/program quality features (e.g., models, evidence-based practice, etc.)?
 - Are gains in COSF ratings explained by family outcomes?



9. COSF Validity Suppositions, Questions and Evidence

- Theoretically, We Might Expect the Entry Data Characteristics for the 2006 versus the 2007 Child Cohorts to be the Same
 - Are the distributions of COSF data the same?
 - Is the central tendency (median, means) the same?



10. COSF Validity Suppositions, Questions and Evidence

- Theoretically, We Might Expect Child COSF Outcomes to be Related to and Explained by Parent Outcomes
 - What is the correlation between parent and child outcomes?
 - What is the variance in child COSF outcomes accounted for by parent outcomes?
 - What is the variance in parent outcomes accounted for by child COSF outcomes?



Conclusion

- 10 validity questions and supporting COSF evidence were discussed
- Such analyses help establish and maintain the quality of a State's OSEP accountability system
- Evidence from two states appears to offer validity support the COSF process
- More work is needed, we need to know more from more states!

For More Information see:

<http://www.fpg.unc.edu/~ECO/>

