A Randomized Controlled Study of Face-to-Face and Web-based COMPASS Consultation

An Example of an Evidence Based Implementation and Intervention Practice in the Schools

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Why Schools?

- Only public funded service provider for children with disabilities
  - May be the sole provider for children of low income, minority, or less educated mothers
- More than 500% increase in students served
- High burnout…. National shortage teachers
- Three times higher costs for education
- Less than 10% of research supported practices used in classrooms

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Hess et al., 2008; Morrier, et al., 2011; Ruble, et al., 2010; Simpson et al., 2011; Stahmer et al., 2005

Implementation Science

The *processes and procedures* that help or hinder the transfer, adoption, and use of evidence-based practices.

Dunst (2012). Framework for Conceptualizing the Relationship Between Evidence-Based Implementation and Intervention Practices. http://www.puckett.org/

Kelly, B., & Perkins, D.F., (Eds.). (2012). *Handbook of implementation science for psychology in education*. Cambridge, England: Cambridge University Press.

Evidence Based Interventions

- "Focused treatments"
- National Professional Development Center
  - http://autismpdc.fpg.unc.edu/
- OCALI – Autism Modules
  - http://www.autisminternetmodules.org/
- National Autism Center
  - http://www.nationalautismcenter.org/

Table 1. Evidence-based practices for children and youth with ASD

- Antecedent-based interventions (ABI)
- Computer-aided instruction
- Differential reinforcement
- Discrete trial training
- Extinction
- Functional behavior assessment
- Functional communication training
- Naturalistic intervention
- Parent-implemented interventions
- Peer-mediated instruction and intervention
- Picture exchange communication system (PECS)
- Pivotal response training
- Prompting
- Reinforcement
- Response interruption/redirection
- Self-management
- Social narratives
- Social skills groups
- Speech-generating devices/VOCA
- Structured work systems
- Task analysis
- Time delay
- Video modeling
- Visual supports

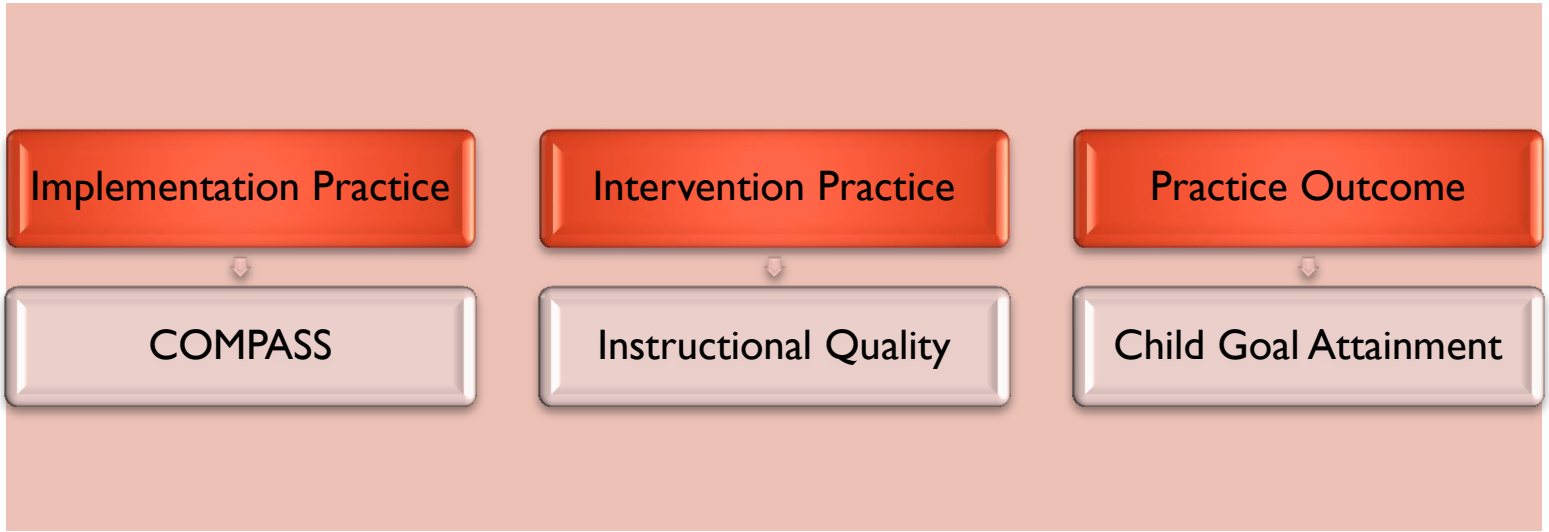
Consultation

- Consultation is effective and has a "multiplier effect"
  - By supporting teachers, we support an even larger number of students

Busse et al., 1995; Medway & Updyke, 1985; Sheridan et al., 1996

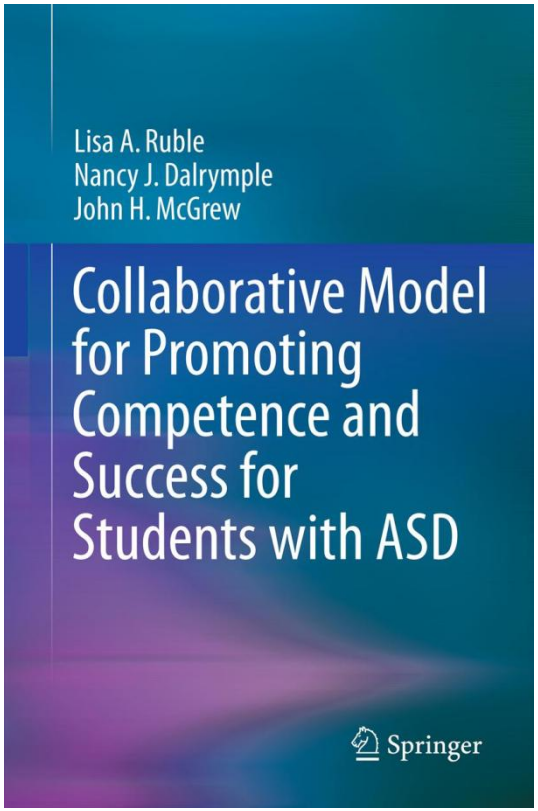
Consultation

- As implementation & intervention practice
  - Quality of the procedures as delivered by the implementation agent (Consultant)
  - Quality of the strategies as delivered by the intervention agent (Teacher)



Overview of COMPASS (Collaborative Model for Promoting Competence and Success)

- Decision-making framework
- Based on assumptions of child-environment interaction as critical
- Proactive problem solving
- Research-supported practices
- Teaching plan is specific to autism
- Forms are specific to autism
- Teaching strategies are linked to each specific skill



Ruble, Dalrymple, & McGrew, 2012

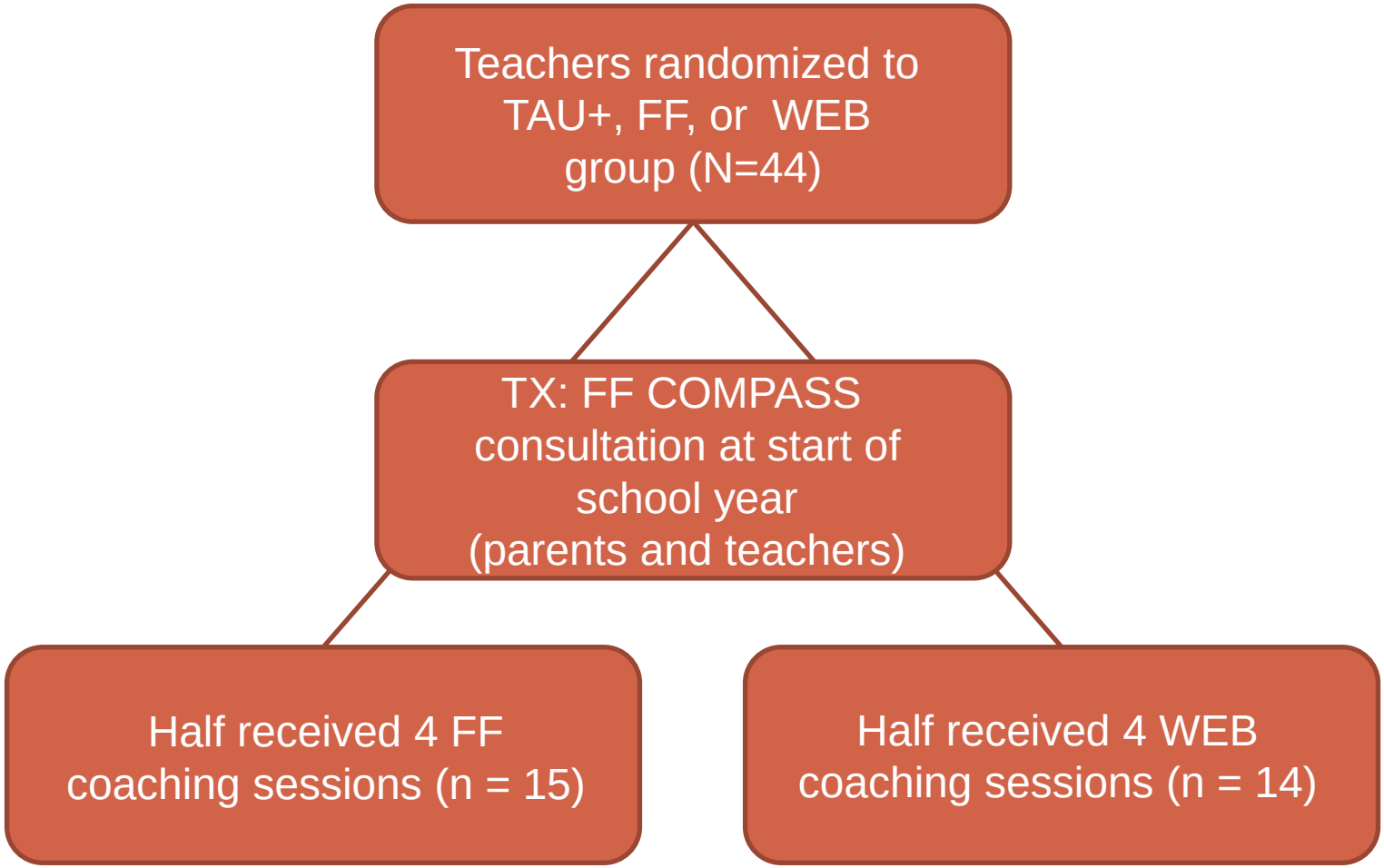
Research Questions

- Can we replicate findings from a previous RCT of COMPASS and TAU

  (*d* = 1.5)
- Does COMPASS work as well when delivered via Web based technologies?
  - Child goal attainment outcome
  - Fidelity of intervention practice
  - Teacher satisfaction

Ruble, Dalrymple, & McGrew, 2010
NIMH RC1MH089760

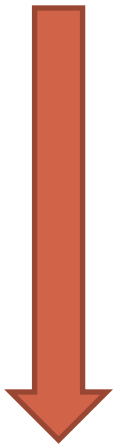
Design



FF = face-to-face; WEB = web-based

Group Comparison

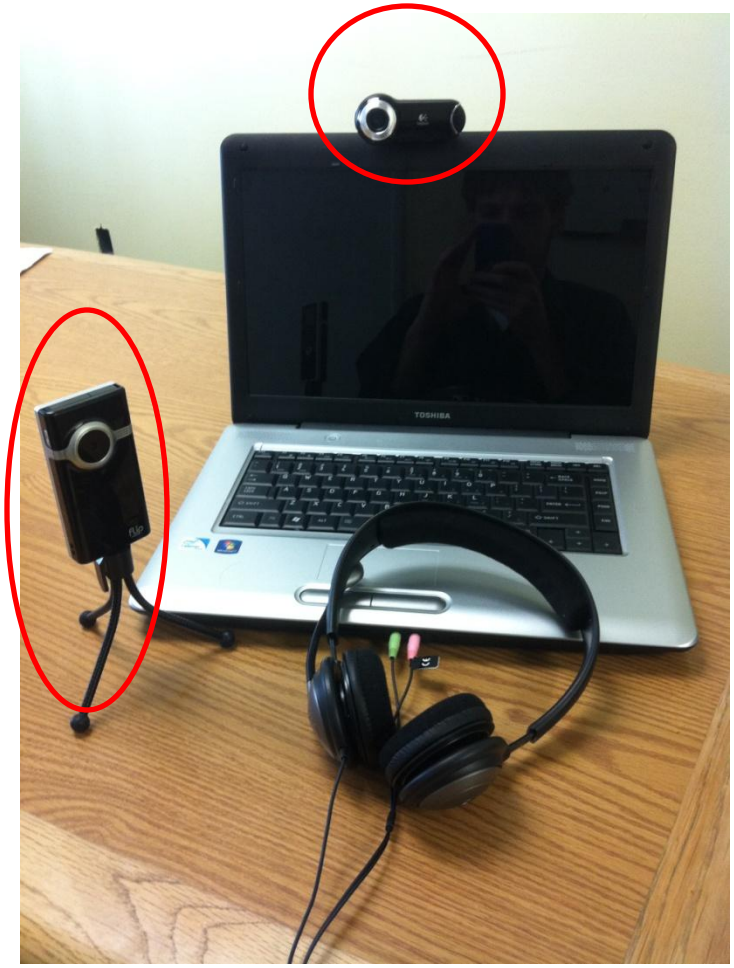
- TAU Group
  - Assessment of baseline skills
  - Services as usual
  - + Online training



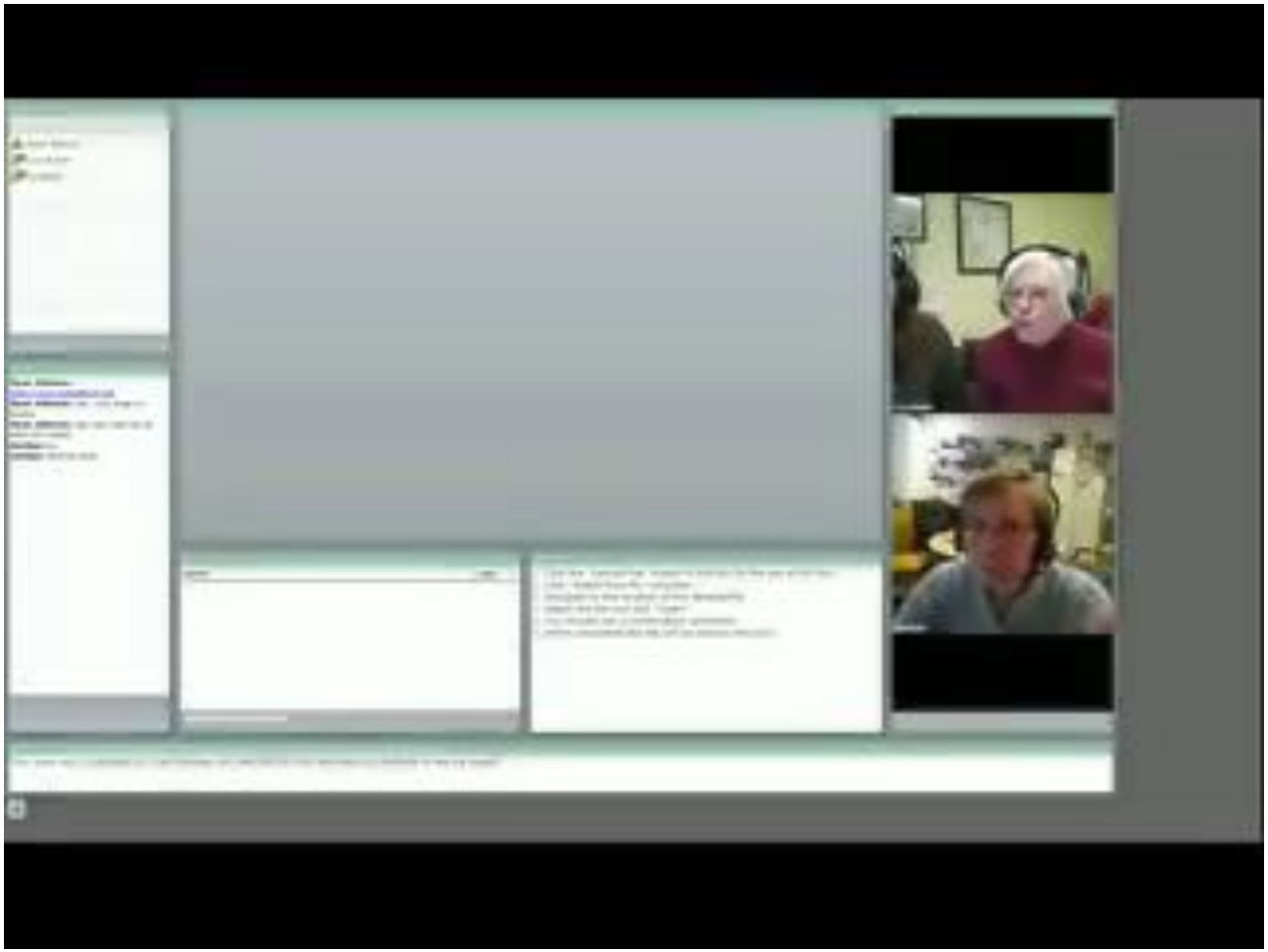
  - Final evaluation

- Intervention Groups
  - 3 hour consultation (parent & teacher)
    - 3 IEP objectives
      - Measurable
    - Teaching plans
  - Goal attainment scales
  - 4 teacher coaching sessions
    - (FF or WEB)
    - (1 - 1.5 / 4-6 weeks)
  - Final evaluation

WEB Group: Teacher Equipment



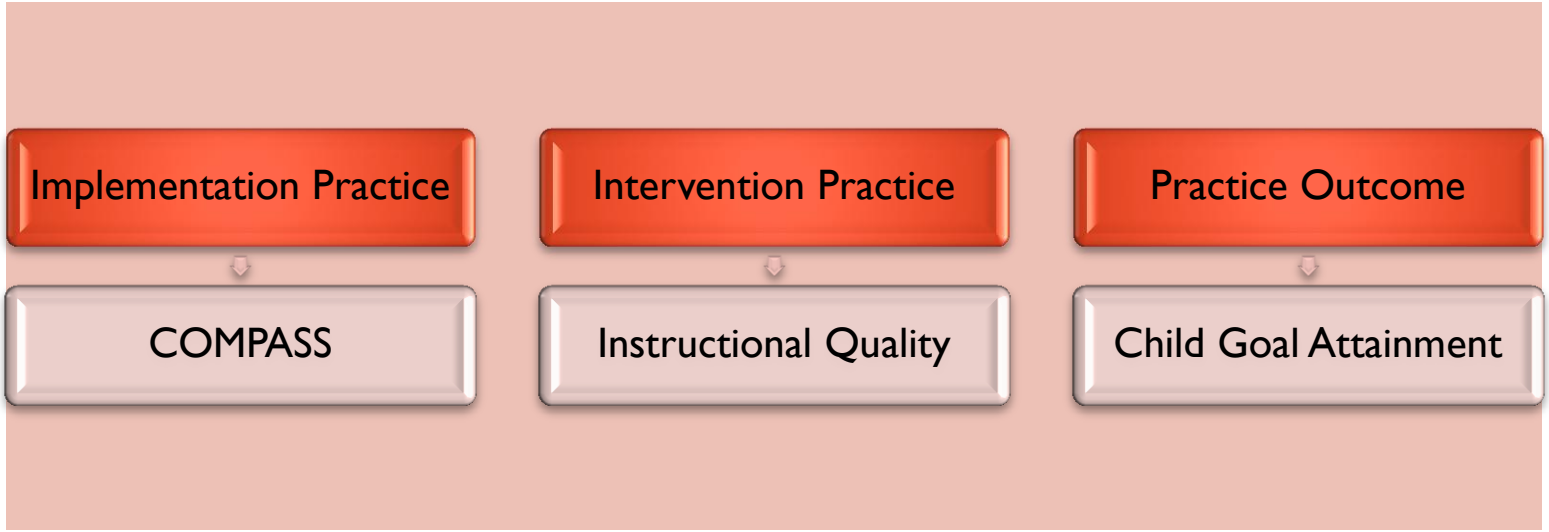
Adobe Connect Session



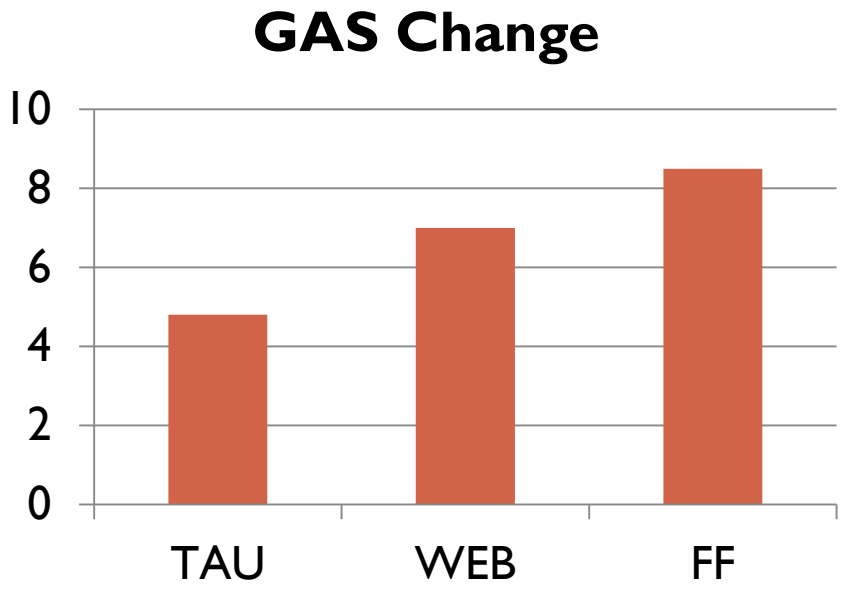
Time 1 Comparisons

	TAU		FF		WEB		
Variable	M	SD	M	SD	M	SD	p
ADOS (S&C)	17.9	3.7	17.4	4.2	19.4	2.5	.29
DAS	61.3	24.6	62.4	17.6	45.5	20.4	.06
OWLS	53.9	14.2	58.4	15.2	48.9	8.2	.15
Vineland (TR)	58.2	14.8	64.7	12.5	56.6	13.6	.28
Child Age	5.6	1.5	6.1	1.4	5.55	1.7	.61
Years teaching	1.1	2.1	0.1	0.3	1.9	3.5	.30
Students taught	3.3	4.3	8.9	8.0	6.7	7.3	.11
Services received	1.4	1.3	0.7	0.8	1.8	1.5	.15
Hours of services	13.2	23.2	4.9	7.5	5.7	6.4	.38

Conceptual Framework



Practice Outcome



Planned Comparisons

	WEB	FF
TAU	*d* = .81	*d* = 1.49
WEB		ns

Implementation and Intervention Practice Fidelity

Implementation Practice Fidelity – What the Consultant Did

Initial Consult: 80-90% of features implemented

Coaching: 3.8 / 4.0

No diff FF and WEB

Intervention Practice Fidelity (Teacher Adherence) by Coaching Session

Group	1	2	3	4
FF	3.6	3.4	4.0	4.2
WEB	3.7	3.7	4.1	4.2

[1] 1-5 Likert Scale 1 '0%'; 5 '100%'

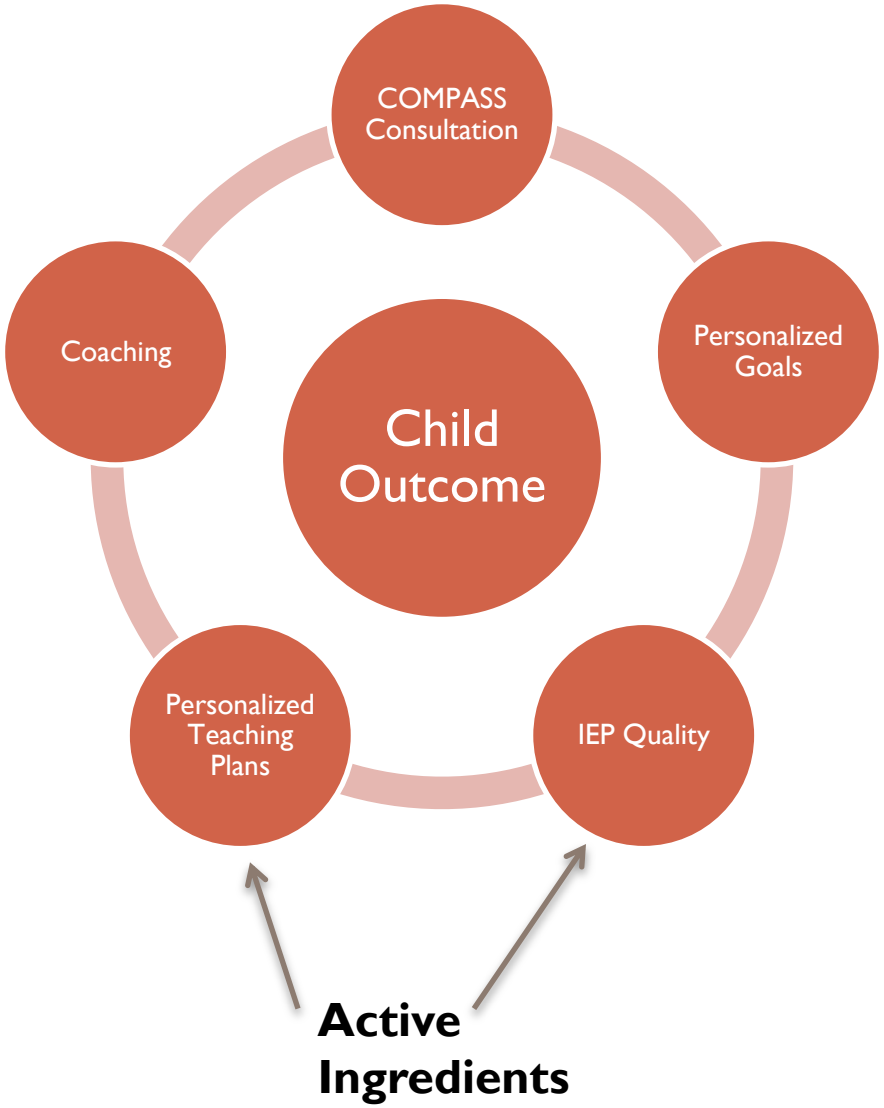
No diff FF and WEB.

Significant difference in adherence ratings across coaching sessions, $\chi^2(3) = 12.39$, $p = .006$, Kendall's $W = .15$

Satisfaction

- *Median* = 3.7 / 4
- Initial Consult:
  - No difference between FF and WEB groups for teachers, z = -0.07, p = .95, r = .01, and parents, z = -0.98, p = .33, r = .19.
- Coaching:
  - No difference between the WEB (M = 3.2, *Median*= 3.3, SD = 0.62) and FF groups (M = 3.2, *Median* = 3.3, SD = 0.44), z = -0.48, p = .63, r = .09.

COMPASS Active Ingredients



Active ingredients

- IEP quality
  - r = .61, p< .001 (replicated from study 1)
- Teacher adherence
  - r = .23, p = .11 (did not replicate)
  - Restricted range of scores
  - Need to examine teacher competence, not just adherence

Likely Features of Effective Consultation Models

- Collaborative vs expert approach with teachers, families & therapists
- Personalized goals & teaching plans
- Measurable goals/objectives
- Reflective practice & feedback
- Progress monitoring & data keeping
- Cultural sensitivity of family values

Conclusions

- COMPASS replicated in 2 RCTs
- Web based coaching is a promising approach for improving outcomes
  - Fidelity equal to FF
  - Satisfaction equal to FF
  - Child outcomes equal to FF
- COMPASS needs to be evaluated when implemented by school-based practitioners

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