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

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.

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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

Teachers randomized to TAU+, FF, or WEB group (N=44)

TX: FF COMPASS consultation at start of school year (parents and teachers)

Half received 4 FF coaching sessions (n = 15)
Half received 4 WEB coaching sessions (n = 14)

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

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

Implementation Practice

COMPASS

Intervention Practice

Instructional Quality

Practice Outcome

Child Goal Attainment
Practice Outcome

GAS Change

Planned Comparisons

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<thead>
<tr>
<th></th>
<th>WEB</th>
<th>FF</th>
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<tbody>
<tr>
<td>TAU</td>
<td>$d = 0.81$</td>
<td>$d = 1.49$</td>
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<tr>
<td>WEB</td>
<td></td>
<td>ns</td>
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</table>
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

<table>
<thead>
<tr>
<th>Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>FF</td>
<td>3.6</td>
<td>3.4</td>
<td>4.0</td>
<td>4.2</td>
</tr>
<tr>
<td>WEB</td>
<td>3.7</td>
<td>3.7</td>
<td>4.1</td>
<td>4.2</td>
</tr>
</tbody>
</table>

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

- $\text{Median} = 3.7 / 4$
- **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 ($M = 3.2$, $\text{Median} = 3.3$, $SD = 0.62$) and FF groups ($M = 3.2$, $\text{Median} = 3.3$, $SD = 0.44$), $z = -0.48$, $p = .63$, $r = .09$. 
COMPASS Active Ingredients

- COMPASS Consultation
- Coaching
- Personalized Teaching Plans
- IEP Quality
- Personalized Goals

Child Outcome

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
Acknowledgements

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