Methods

Participants

- Forty four special education teachers from Central Kentucky (n=32), Eastern Kentucky (n=5), and South Central Indiana (n=8) in Years 1 and 2 of the study.
- All but one teacher were female. Students were 84% male (n=27) and 16% female (n=7).
- Students were all diagnosed with ASD (ADOS confirmed); the mean age of the students was 5.73 years (SD=1.51).

Procedures

- Prior to randomization, children, parents, and teachers completed a baseline evaluation.
- The participants were randomized into one of three groups (see Figure 1).
- The conjoint consultation groups received a centralized consultation intervention using a problem solving approach called COMPASS (Ruble & Dalrymple, 2002) that included the child’s parent/caregiver and teacher. Participants completed a 15-item fidelity checklist.
- The consultations concluded with identification of three IEP objectives that were the focus of the coaching sessions throughout the year. Each objective represented a social, communication, and learning skill goal.
- Teaching plans were developed for each objective and were based on personalized strategies for the specific child.
- Following the consultation phase that occurred at the beginning of the school year, teachers received four coaching sessions, about every 4 weeks.
- During the coaching phase, teachers recorded video of student instruction using the teaching plan developed as a result of the consultation. Observations using goal attainment scaling (GAS) were applied to monitor and conduct the curriculum based assessment of child progress (using a 5-point scale from -2 to +2). A 15-item fidelity check was completed for both face-to-face and web based sessions.

Results

- Fidelity of the consultation ranged from 85% (parent report) to 93% (teacher report) and for the coaching sessions averaged 3.8 / 4.0 (1*not at all; 4*very much); no difference between fidelity scores was observed between the face-to-face and web based groups (t= .94, p=.36).
- Web-based teachers rated the technology consultation favorably (4.8 / 5.0).
- The children were similar across groups at baseline (see Table 1). After final data collection, DAS scores will be controlled for in an analysis of covariance.
- Preliminary results of effect size are presented based on final GAS scores for Year 1 participants and about 1/3 of final scores for Year 2 (final data for Year 2 participants will be concluded the end of May 2011).
- Preliminary data indicate that the mean GAS scores were similar at Time 1 and steadily, but differentially, increased for all groups. Time 2 GAS scores were highest for the face-to-face (FF) condition (see Figure 2).

Table 1. Baseline Adaptive Behavior, Cognitive and Language Student Scores

<table>
<thead>
<tr>
<th></th>
<th>Placbo-Control (n=15)</th>
<th>Face-to-Face (n=14)</th>
<th>Web-based (n=15)</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADOS</td>
<td>57.3</td>
<td>55.5</td>
<td>57.4</td>
<td>42.0</td>
</tr>
<tr>
<td>GAS</td>
<td>66.3</td>
<td>68.4</td>
<td>69.4</td>
<td>71.6</td>
</tr>
<tr>
<td>ORS</td>
<td>57.9</td>
<td>64.2</td>
<td>58.6</td>
<td>57.4</td>
</tr>
<tr>
<td>Vis/Aud</td>
<td>59.2</td>
<td>64.8</td>
<td>64.3</td>
<td>59.6</td>
</tr>
<tr>
<td>Age</td>
<td>6.61</td>
<td>4.47</td>
<td>6.61</td>
<td>1.43</td>
</tr>
</tbody>
</table>

Discussion

- Preliminary findings confirm previous findings of the efficacy of consultation as a means to improve educational outcomes of children with autism (Ruble, et al., 2010).
- Children whose teachers received web-based coaching also demonstrated improved outcomes compared to the placebo control condition.
- Findings provide preliminary evidence of the relative effectiveness of web-based intervention in autism and the need for early and sustained professional development.
- The data provide early support that the COMPASS intervention lead students gains on IEP objectives during multiple points in the year.
- The data also suggest the FF intervention and web based intervention may produce similar results.
- The findings are preliminary and will be confirmed summer 2011.

Methods cont.

- Outcomes based on face-to-face coaching were compared to web-based coaching which occurred via Adobe® Connect™ videoconferencing technology and the placebo condition (online training). Data on teacher’s attitudes toward technology was collected.
- Teachers in the placebo condition completed online autism training modules only.
- Child outcomes were measured at the end of the school year using GAS by an independent evaluator who was blind to group assignment.

Figure 1: Group Assignment

Figure 2: Goal Attainment Scale Mean Scores

- Effect size (r) between the control and (a) FF condition was -.56 and (b) web group was -.54; and between the FF and web group was .09.

References


Acknowledgements

This work was sponsored by grant number 1R1C1MH089760 from the National Institute of Mental Health (NIH) awarded to the first author.

We would like to acknowledge the Special Education teachers and administrators as well as our co-investigators and our consultants Ms. Nancy Dalrymple and Lauren Feldner.