

Randomized Study of Web-based Teacher Coaching

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Introduction

- o The critical shortage in the numbers of special education teachers with appropriate training and available to respond to the epidemic increase in the prevalence of children with autism spectrum disorders (ASD) is a major challenge for schools.
- o Research that provides scientific decision making in the selection and use of professional development models has the potential for major impact in both urban and rural areas.
- o Access to specialists in ASD is especially problematic for rural communities, and is exacerbated when communities are geographically isolated and impoverished such as those in Appalachian Kentucky.
- o Urban schools also face similar challenges because the number of students with autism can easily exceed the availability of autism consultants and supports for classroom teachers.
- o Moreover, the costs associated with professional development, consultation, and travel typically far exceed available resources for urban and rural schools alike.
- o The primary goal is twofold: (a) to present results of a randomized controlled trial of teacher consultation utilizing web-based technologies and (b) to compare results of web-based coaching to face-to-face coaching.

Methods

Participants

- o Forty four special education teachers were recruited from Central Kentucky (n=31), Eastern Kentucky (n=5), and South Central Indiana (n=8) in Years 1 and 2 of the study.
- o All but one teacher were female. Students were 84% male (n=37) and 16% female (n=7).
- o Students were all diagnosed with autism (ADOS confirmed); the mean age of the students was 5.73 years (SD=1.51).

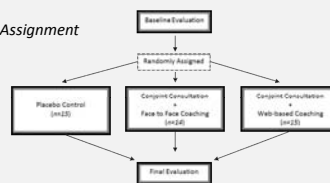
Procedures

- o Prior to randomization, children, parents, and teachers completed a baseline evaluation.
- o The participants were randomized into one of three groups (see Figure 1).
- o The conjoint consultation groups received a manualized 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.
- o 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.
- o Teaching plans were developed for each objective and were based on personalized strategies for the specific child.
- o Following the consultation phase that occurred at the beginning of the school year, teachers received four coaching sessions, about every 4 weeks.
- o 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 19-item fidelity check was completed for both face-to-face and web based sessions.

Methods cont.

- o 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.
- o Teachers in the placebo condition completed online autism training modules only.
- o 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



Results

- o Fidelity of the consultation ranged from 85% (parent report) to 91% (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).
- o Web based teachers rated the technology consultation favorably (4.8 / 5.0).
- o 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.
- o 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 Year2 participants will be concluded the end of May 2011).
- o 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).

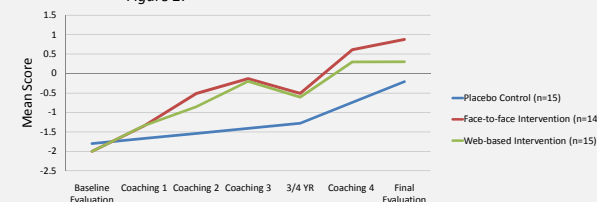
Table 1. Baseline Adaptive Behavior, Cognitive and Language Student Scores

	Placebo Control (n=15)		Face to Face (n=14)		Web-based (n=15)		ANOVA		
	M	SD	M	SD	M	SD	df	F	Sig
ADOS (S&C)	17.9	3.7	17.4	4.2	19.4	2.5	2	1.3	.29
DAS	61.3	24.6	62.4	17.6	45.5	20.4	2	2.9	.06
OWLS	53.9	14.2	58.4	15.2	48.9	8.2	2	2.0	.15
Vineland	58.2	14.8	64.7	12.5	56.6	13.6	2	1.3	.28
Age	5.61	1.47	6.07	1.43	5.55	1.68	2	.50	.61

Results cont.

Goal Attainment Scale Mean Scores*

Figure 2:



*Data represent 3/4 YR progress; Data collection is still underway for the Final Evaluation (Placebo Control: n=12; Face-to-face Intervention: n=8; Web-based Intervention: n=5).

- o 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.

Discussion

- o 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).
- o Children whose teachers received web-based coaching also demonstrated improved outcomes compared to the placebo control condition.
- o Findings provide preliminary evidence of the relative effectiveness of web-based intervention in autism and the need for early and sustained professional development.
- o The data provide early support that the COMPASS intervention lead to student gains on IEP objectives during multiple points in the year.
- o The data also suggest the FF intervention and web based intervention may produce similar results.
- o The findings are preliminary and will be confirmed summer 2011.

References

Ruble, L., Dalrymple, N., & McGrew, J. (2010). The effects of consultation on Individualized Education Program outcomes for young children with autism: The collaborative model for promoting competence and success. *Journal of Early Intervention*, 32, 286-301.

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