EMPIRICAL REPORT

Improving the Quality of Parent-Teacher Interactions in an Early Childhood Classroom

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Quality parent-teacher interactions promote positive relationships and valuable sharing of information (e.g., Endsley and Minish 1991; Ingvarsson and Hanley 2006), outcomes that affect parent satisfaction (Winkelstein 1981) and may also contribute to child development. Supportive relationships between families and educators facilitate child learning and decrease problem behavior (e.g., Fiese et al. 2006). Identifying ways to build positive relationships by promoting quality parent-teacher interactions in early childhood settings is a worthwhile endeavor. Unfortunately, these interactions occur infrequently during natural opportunities, such as morning drop-off in child care centers (Perlman and Fletcher 2012). To address this issue, we taught teachers to initiate quality interactions with parents by using a 12-step task analysis. We developed training procedures that would be easy to implement in a busy child care setting and would be acceptable to teachers who participated in the training.

Teachers were undergraduate students who worked in an early childhood classroom as part of a practicum course. We developed a parent-teacher interaction task analysis (Table 1) based on supervisory expectations, licensing requirements, and published research (e.g., Perlman and Fletcher 2012). We measured the accuracy with which teachers implemented the task analysis and asked teachers to complete a questionnaire so that we could assess the acceptability of the training procedures.

An organizational-level functional assessment revealed that teachers (1) were unable to describe correctly the behaviors comprising a parent-teacher interaction, and (2) lacked the skills to accurately implement the task analysis (criterion was

set to 80 % accuracy across three consecutive observations). After obtaining university approval to conduct the study, we used a concurrent multiple baseline design across shifts to evaluate the effects of training on teacher accuracy. Our analysis consisted of two to four phases depending on teacher performance: (1) baseline, (2) task clarification, (3) video-based training, and (4) feedback.

During baseline, teachers experienced typical training offered by the child development center (e.g., reading a manual, orientation, feedback from their supervisor on a variety of behaviors). Teacher accuracy for the morning ($M=66.5\%$) and afternoon ($M=58.8\%$) shifts was below criterion levels (Fig. 1). Task clarification consisting of a brief review of a written task analysis was ineffective for teachers working the afternoon shift ($M=60.9\%$); thus, we did not introduce this intervention for the morning shift. A video-based training package consisting of a 5-min, 4-s video with models, guided notes, and a 5-item quiz increased teacher accuracy for both shifts. The morning shift reached mastery criterion quickly ($M=87\%$). Although teachers in the afternoon shift demonstrated increases in accuracy ($M=76.5\%$), they achieved criterion performance only when performance feedback was provided ($M=89.2\%$). Feedback consisted of a brief meeting during which we presented graphic performance data, reviewed expectations, discussed ways to correct errors, and praised steps performed correctly. Based on the results of a questionnaire, teacher acceptability was high (Table 2). Teachers agreed or strongly agreed with statements that video-based training ($M=3.57$) and feedback ($M=4$) are acceptable and effective and that they would be willing to use them again in the future.

The purpose of this study was to improve the quality of parent-teacher interactions by providing easy-to-implement teacher training. Video-based training improved performance for teachers in both shifts. Brief feedback was required for teachers in the afternoon shift to reach criterion performance.

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Table 1 Parent-teacher interaction task analysis

Task analysis steps
1. The elapsed time between the parent/child's arrival to the classroom and the teacher's greeting is equal to or less than 5 s.
2. Teacher moves within double arm's reach of parent and remains in this location for at least 10 s.
3. Teacher greets the parent (e.g., <i>Good morning/afternoon.</i>).
4. Teacher states the parent's name.
5. Teacher greets the child (e.g., <i>Good morning/afternoon.</i>).
6. Teacher states the child's name.
7. Teacher makes a socially appropriate inquiry (e.g., <i>How are you? Did you have a nice weekend?</i>).
8. Teacher makes eye contact with parent at least once during the greeting.
9. Teacher smiles at least once during the interaction.
10. Teacher exchanges information about the child. During the morning shift, the teacher inquires about information that may affect the child that day (e.g., <i>Is there anything we should know about Jonny's morning that might impact his day?</i>). During the afternoon shift, the teacher tells the parent one good thing about the day or describes events that are out of the ordinary (e.g., <i>Jonny shared his favorite toy with a friend!</i>).
11. Teacher scans the room for safety. This requires the teacher to position her body so that she can look at both the parent/child and other children in the classroom. The back is positioned so that it does not face the children in the classroom.
12. Teacher provides a closing statement (e.g., <i>Have a nice day.</i>).

Fig. 1 Percentage of task analysis steps implemented accurately by teachers who worked in the afternoon or morning shifts across all phases of the study (note *VBT* video-based training). The *asterisk* denotes a single observation during which only four parent-teacher interactions were recorded

Table 2 Acceptability ratings

Items	AM shift <i>M</i>	PM shift <i>M</i>	Overall <i>M</i>
The teacher manual alone would be an acceptable way to help teachers interact with parents.	2.25	1.33	1.86
The teacher manual alone would be effective in changing the accuracy with which teachers interact with parents.	2	1.33	1.71
I would suggest the use of the teacher manual alone for use with other teachers.	2	1	1.67
I would be willing to use the teacher manual again in the future.	2.5	2.33	2.43
A review of the written expectations (task clarification) would be an acceptable way to help teachers interact with parents.	n/a	2.67	2.67
Task clarification would be effective in changing the accuracy with which teachers interact with parents.	n/a	3	3
I would suggest the use of task clarification for use with other teachers.	n/a	3	3
I would be willing to use task clarification again in the future.	n/a	3	3
Video-based training (including notes and quiz) would be an acceptable way to help teachers interact with parents.	3.25	4	3.57
Video-based training would be effective in changing the accuracy with which teachers interact with parents.	3.25	4	3.57
I would suggest the use of video-based training for use with other teachers.	3.25	4	3.57
I would be willing to use video-based training again in the future.	3.25	4	3.57
Receiving feedback would be an acceptable way to help teachers interact with parents.	n/a	4	4
Receiving feedback would be effective in changing the accuracy with which teachers interact with parents.	n/a	4	4
I would suggest the use of feedback for use with other teachers.	n/a	4	4
I would be willing to receive feedback again in the future.	n/a	4	4
I like the procedures used to assist me in learning how to interact with parents properly.	3.5	4	3.71
Overall, the procedures used would be beneficial for teachers.	3.5	4	3.71

An important finding was that teachers reached criterion in less than 20 min of training time. Furthermore, teachers rated both video-based training and feedback the most acceptable and effective training procedures. These results are similar to previous studies documenting that function-based staff-level interventions produced robust changes in behavior (e.g., Carr et al. 2013). Moreover, this study improved upon previous research (e.g., Ingvarsson and Hanley 2006) by addressing more complex aspects of a quality interaction and effectively improved interactions with relatively simple training procedures. These findings have implications for early childhood settings by demonstrating that resource-sensitive training

procedures may yield marked performance improvements in ways that are acceptable to teachers. Future research might address how similar training procedures influence behavior of paid employees and have collateral effects on parent satisfaction, parent-teacher relationships, and child development.

Method

Participants and Setting

Teachers were seven undergraduate female students ranging in age from 20 to 26 ($M=22.4$ years) who were enrolled in an advanced practicum course in applied behavioral science at a large midwestern university. The purpose of the practicum was twofold: (1) to provide a service-learning experience for undergraduate students specializing in early childhood education, and (2) to staff a full day, inclusive toddler classroom at a university-based child development center. At the time of the study, the classroom was comprised of 12 children, four teachers during the morning shift, three teachers during the afternoon shift, and a graduate-student supervisor for each shift. We conducted this study as part of an advanced undergraduate practicum in organizational behavior management completed by the first author. The purpose of this practicum was to provide a supervised service-learning experience for students interested in organizational consultation and to address a performance problem identified by an organization.

Interactions between parents and teachers occurred in the immediate vicinity of a door to a classroom. The classroom contained space for eating, toileting, and structured play. Observers positioned themselves in an adjacent 5.3 m by 2.0 m room separated by the classroom with a one-way mirror. The observation room was equipped with audio speakers that transmitted conversations between parents and teachers.

Dependent Variables and Data Analysis

Accuracy The primary dependent variable was the accuracy with which teachers implemented a parent-teacher interaction task analysis (Table 1). Each observation constituted a single parent-teacher interaction; we sampled the first five interactions of the morning and afternoon observations. Morning observations occurred between 8 A.M. to 9:30 A.M. and afternoon observations took place between 4 P.M. to 5:30 P.M., the times during which parents dropped off and picked up their children from the center, respectively. We calculated accuracy as the number of task analysis steps implemented accurately divided by the total number of steps, multiplied by 100.

Acceptability At the conclusion of the study, teachers completed an acceptability questionnaire informed by the

Intervention Rating Profile-15 (Martens et al. 1985) to assess their judgments about the procedures used to train them to interact with parents. The number of items varied across the two shifts and reflected the number of training procedures teachers experienced. Items were rated on a four-point Likert-type scale (1=*strongly disagree*; 4=*strongly agree*). Higher scores were indicative of intervention acceptability. All of the teachers completed the questionnaire 2 days following the final observation.

Experimental Design and Procedure

We conducted an organizational-level functional assessment before the study. Functional assessment procedures included a review of training practices and materials, interviews with shift supervisors and teachers using a modified *Performance Diagnostic Checklist* (PDC; Austin 2000), and direct observation of parent-teacher interactions. Teachers were unable to describe an appropriate interaction and accurately implement the task analysis, which was generally below criterion performance. Responses to the PDC revealed low scores for the *Knowledge and Skills* domain and high or relatively high scores for the other domains, suggesting performance deficits were due to a lack of knowledge and skills. We used a concurrent multiple baseline design across shifts (morning and afternoon) to evaluate the effects of training on teacher accuracy. The experimental analysis consisted of two to four phases depending on participant performance: (1) baseline, (2) task clarification, (3) video-based training, and (4) feedback.

Baseline Teachers read a brief written explanation of the expectations with respect to interacting with parents when they dropped off or picked up their children. A 49-page manual briefly summarized this information and also described a variety of expectations of the teachers. The child development center required teachers to read the manual in its entirety before a 1-day orientation; however, we are unable to verify that they read this material. During baseline, we did not attempt to restrict typical interactions between supervisors and teachers. Thus, shift supervisors provided feedback or additional training on myriad procedures possibly including parent-teacher interactions.

Task Clarification Task clarification consisted of a brief (i.e., approximately 5 min) meeting between the shift supervisor and teachers during which the supervisor (a) distributed a written task analysis of the component behaviors comprising an appropriate parent-teacher interaction and their definitions, and (b) reviewed each step of the task analysis. Although the supervisor provided an opportunity for questions, the teachers did not ask any. We collected the written task analyses at the end of the meeting to prevent the teachers from sharing the document with their colleagues who worked a different shift.

Video-Based Training This phase consisted of video training, guided notes, and a 5-item quiz. Teachers had three business days to watch a 5-min 4-s video training hosted on the course website (i.e., Blackboard Learn). It consisted of detailed written instructions, voice-over narration, and video models of each step of the task analysis. The training concluded with a full video model of correct and incorrect implementation of the task analysis. The video was created using iMovie for Mac that merged jpeg images of Microsoft Office PowerPoint slides, brief video footage captured using a JVC handheld flip camera, and audio files recorded using Apple GarageBand for Mac (a recording studio software application). Teachers could view the training as many times as they desired during the 3-day period it was available. They were required to submit guided notes to their supervisor, which they completed while viewing the video. Guided notes were downloadable from the course website and contained fill-in-the blank and short answer items as well as space to identify errors depicted in the video non-exemplar. Finally, teachers were required to complete a 5-item quiz located on the course website. They obtained a mean quiz score of 94.3 % (range, 80 to 100 %).

Feedback If performance did not meet a mastery criterion of at least 80 % accuracy across three consecutive observations during video-based training, we provided brief performance feedback. During a 10-min group meeting scheduled before the start of the shift, the experimenters reviewed a graph of teacher accuracy aggregated for the shift, steps of the task analysis, and results of an error analysis with the teachers and the shift supervisor. In a participatory management style, we discussed possible reasons for the errors and brainstormed ways to prevent or remediate them in the future. The meeting concluded with praise for steps of the task analysis teachers performed correctly. Because a frequently occurring error involved omitting parents' names, teachers reviewed and practiced articulating names in a separate meeting with their shift supervisor.

Interobserver Agreement and Procedural Fidelity

An independent, second observer simultaneously recorded data on teacher behavior during 37 and 45 % of sessions for the morning and afternoon shifts, respectively, to assess interobserver agreement. The observers were in agreement when they independently scored the teachers' implementation of a

task analysis step similarly (i.e., as correct or incorrect). We calculated interobserver agreement as the number of instances of agreement divided by agreements plus disagreements, and converted to a percentage. Mean percentage of agreement for the morning shift was 90 % (range, 66 to 100 %) and for the afternoon shift was 87 % (range, 63 to 100 %).

An independent, second observer simultaneously recorded data on completion of task clarification and feedback. We implemented these procedures with 100 % fidelity. The course website allowed us to confirm that all of the teachers viewed the video-based training. In addition, all of the teachers submitted guided notes and completed the quiz.

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