
Sarah Gentile and Sylvia Hunter

University of British Columbia
Children with a diagnosis of autism spectrum disorder (ASD) experience deficits in social communication that can affect their ability to develop a wide range of social skills, including play and conversation skills. These deficits can mean difficulties in forming meaningful friendships and relationships throughout the lifespan (Koegel, Vernon, Koegel, Koegel & Paullin, 2012), affecting quality of life. The impact that these deficits can have on a person’s life has lead researchers to develop a number of interventions aimed at improving social skills in children with autism. These include video-modelling (Nikopoulos and Keenan, 2003; Bellini, Akullian and Hopf, 2007), peer buddy systems (Laushey and Heflin, 2000) and integrated play groups (Wolfberg & Schuler, 1999). Research in social skill interventions has typically been carried out in school settings. However, more recent studies have begun to look at social skills interventions in the home (Wolfberg & Schuler, 1999, Koegal, Werner, Vismara & Koegal, 2005, Jull & Mirenda, 2011).

Frankel and Myatl (2003) highlighted that typically developing children often have play dates at home or in the community, where they have the opportunity to practice a range of social skills. Two studies have demonstrated that play dates within the home setting can yield improvements in social skills in children with autism (Koegal et al, 2005; Jull & Mirenda, 2011). Koegel et al. (2005) looked at the effects of contextually supported play dates on peer relationships. This model is based on a number of strategies such as focusing on activities that both children enjoy and arranging the environment in a way that promotes interaction between peers. In this study, graduate students were primarily responsible for implementation of the package, with parent co-operation. The results of Koegel et al.’s (2005) study supported the use of these strategies and the use of play dates as a context for implementing these strategies. The
results also demonstrated improvements in child affect with the implementation of contextually supported play dates.

Jull and Mirenda (2011) extended the research in this area by demonstrating that parents could be trained to facilitate a similar program at home. Parent training included providing a training manual with information and strategies. The researcher assisted parents in planning the playdates. The parents then implemented a number of playdates, and debriefed with the researcher and received feedback. However, parents expressed concern that it would be more difficult to schedule a play date during the school year, as opposed to when the children were on summer vacation. Jull and Mirenda (2011) suggested that research be conducted with individuals who are able to carry out the intervention long term. If there are siblings in a household who are similar in age, it may be that teaching parents to facilitate play between children with ASD and their siblings may increase social skills. It may be easier for planning purposes, as siblings will be in the same home.

Tsao and McCabe (2010) noted that sibling relationships can be the most permanent relationships in a person’s life. Siblings will survive parents and other family members, and can provide substantial support to each other across the lifespan. In addition, research has shown that strong sibling relationships can promote the development of other friendships (McCoy, Brody, & Stoneman, 1994).

If parents can be taught to facilitate play between children with ASD and their siblings at home, these skills may then transfer to help children with ASD form other relationships. Strain and Danko (1995) investigated whether caregivers could be taught the skills necessary to support sibling interactions in the home, including sharing, social initiations and exchanging ideas.

Parent training procedures included showing a short video of a trained individual facilitating
Results demonstrated that caregivers could be taught to successfully implement strategies that would increase sibling interactions.

Behavioural skills training (BST) is a treatment approach that uses multiple components to teach a wide variety of skills (Miltenberger, 2012). These components are instruction, modelling, rehearsal, and feedback in order to teach target skills. Stewart, Carr and LeBlanc (2007) used behavioural skills training to teach family members to implement a behavioural skills training package to teach social skills to a child with ASD. Behavioural skills training may therefore also be an effective intervention for teaching parents of children with ASD to facilitate play dates with siblings.

The proposed research will examine the effects of a behavioural skills training package on parents’ ability to facilitate play dates between similar aged siblings. This will build upon the current research, which has demonstrated that parents can be effective peer play date facilitators between children with autism and same age peers. Related research notes that while clinicians are not always present to observe social interactions, family members are often present in naturally occurring contexts (Stewart et al, 2007). Parents can be taught skills in order to become effective agents of change in the natural environment (Jull & Mirenda, 2011; Stewart et al, 2007; Strain & Danko, 1995). To our knowledge, research to date has not been conducted that involves parents being taught skills to facilitate more meaningful and high quality sibling play. It is hypothesized that if parents can facilitate sibling play effectively, sibling interactions will increase. It is further hypothesized that child affect will improve with the implementation of facilitated play dates. Lastly, it is postulated that BST will be a socially valid intervention for teaching these skills.
Method

Research Questions

Is there a functional relation between an interventionist’s use of a behavioral skills training package and parents’ implementation with fidelity of facilitated play dates of children with autism and their typically developing siblings in a home setting?

Does a functional relation exist between parent-mediated, contextually supported play dates and an increase in time engaged in social play for a child with autism and their typically developing sibling in a home setting?

Participants

Three children diagnosed with autism spectrum disorder will be recruited through an agency where the authors are employed. A letter will be provided to behavior consultants working with families within the agency, describing the purpose of the study as well as inclusion criteria. The participants will range in age from 5 to 8 years old and have typically developing siblings within 3 years of the child’s age. The parents of these children will also be participants. To be included in the study, child participants will meet the following inclusion criteria: (a) verbally communicate using simple sentences; (b) engage in little to no challenging behavior; (c) able to sit engaged in a preferred activity for 10 minutes; and (d) capable of simple turn taking. These criteria will also be applicable to the typically developing siblings. The inclusion criteria for the parents will be as follows: (a) agreement to the time and responsibilities required to be a play date facilitator; (b) available for training and observation sessions across the 4 months of baseline and intervention and up to 3 month of follow-up measurement; (c) no participation in similar type training in the past. Before starting the intervention, we will gain informed consent forms from parents for both themselves and their children.
Settings

Training sessions will occur in the participants’ homes in a location decided upon by the parents. Play dates will be facilitated across a variety of settings within the home such as, the kitchen, living room, or the child’s bedroom. The children’s parents will provide materials. These will vary depending on the activities prepared for the play date. Materials may include, for example, board games, arts and crafts supplies, toys that can facilitate co-operative play or pretend play, and baking supplies.

Measurement

Measurement procedures will use video based observation using a video camera. Footage will be downloaded onto a computer and sessions will be coded from the screen by the researchers. All coding will occur in a research laboratory on the campus of the University of British Columbia.

**Dependent variables.** Dependent variables will be divided into two groups: (a) experimental dependent measures and (b) descriptive dependent measures. The experimental dependent measures are: (a) parent fidelity of implementation of the BST package and (b) percentage of intervals siblings are engaged in play. The descriptive dependent variables are: (a) child affect during the intervention and (b) parent ratings of social validity of the intervention.

**Parent fidelity of implementation of the BST package.** The first primary dependent variable in this study will be parent fidelity of implementation of facilitated play dates based on a behavioral skills training package. Fidelity is defined as the occurrence of correct implementation of steps for facilitated play dates without researcher assistance. Successful parent implementation will be defined as 80% of task steps completed with fidelity. For example, the parents will: (a) prepare play date materials in advance, (b) have only one of each
type of item available so that the children have to share, and (c) prepare a number of different
types of activities per session. A complete list of steps for implementation of the BST package
can be found in Appendix D.

**Siblings appropriately engaged in play.** The second primary dependent variable will be
the percentage of intervals siblings appropriately engaged in social play. This is defined as
positive social interactions between the siblings, and time spent actively engaged in an activity.
Examples of positive social interactions include asking each other questions or making related
comments with regards to play, smiling, laughing, and maintaining eye contact. Non-examples
of positive social interactions include the siblings not communicating with each other, either
verbally or with eye contact.

**Affect.** A descriptive dependent variable will examine child affect following baseline,
intervention, and follow-up phases. This will be measured on a scale of 0-5, where 0/1
represents negative affect, 2/3 represents a neutral affect, and 4/5 represents a positive affect.
Negative affect is defined as when the child appears to be unhappy or frustrated, and is crying,
screaming or attempting to leave the activity. A neutral affect is defined as when the child
appears to be neither happy nor sad and engages in the activity but does not appear enthusiastic
about it. A positive affect is defined as when the child appears happy, is smiling or laughing,
appears comfortable, and is actively engaged in the activity. (Jull and Mirenda, 2012; Koegel,
Werner, Vismara, & Koegel, 2005)

**Social Validity.** A second descriptive dependent variable will be parent satisfaction with
the intervention as a measure of social validity. Parents will be given the 7-item questionnaire
used by Stewart et al. (2007). This uses a Likert-type scale, where 1 is strongly disagree and 5
is strongly agree. The scale includes questions regarding how effective the parents found the
behavioural skills training intervention to be, whether they believed it made a meaningful change in their child’s life, and whether or not they would use the procedures again in the future. There will also be a comments sections at the end of the questionnaire for parents to add any additional feedback they might wish to provide.

**Measurement Procedures.** Play date sessions will be videotaped with a video camera in the room in the home where the session will take place. The video camera will be located in an unobtrusive location in the room where both the parent and the child can be viewed in the same screen. Observations will take place once a week and will be around 30 minutes in length, with 5-10 minutes allowed for each activity. The researchers will assess if the presence of the video camera is likely to cause reactivity in the parent and/or child participants prior to intervention. If this is the case, mock recordings will take place to allow the parent and the child to get used to the presence of the camera, so that this does not come to influence behavior. The parents will be told that the researchers are there only to observe. They will be asked to facilitate the play date following the steps they have learned. The parents will not be given guidance during the play date. However, following the play date, parents will be provided with feedback with regards to implementation as part of the behavior skills training package.

Data will be collected while viewing the 30 minute play sessions recorded at the child’s home. These will be coded on the computer in the lab. For parent fidelity of implementation, the observers will observe the videotaped session and record the number of task steps in facilitating a play date that the parents implemented correctly (See Appendix D for task steps). After scoring each step for accuracy, the coder will compute the percentage of task steps completed accurately. The formula will be the number of steps completed accurately divided by the total number of steps x 100. For child engagement, the unit of measurement will be
percentage of 30 second intervals during which the children are engaged for most of the interval. The videos will be divided into 30 second intervals by pausing the video every 30 seconds. The researchers will code the occurrence or non-occurrence of reciprocal play interactions during each interval. Occurrence of target behavior is defined as when children are actively engaged for 16 seconds or more during the interval. Coders will use a stopwatch to determine how long the child is engaged during the interval. Data from each 5-10 minutes observation will be added together and divided by 3 to yield an average percentage of intervals across the three observation sessions.

As a descriptive measure, the researchers will code affect during the last probe session for baseline, intervention, and follow-up phases. For these sessions, after they have coded social interactions, they will rewind the video tape and code affect. They will code this using the rating scale and a set of definitions of negative, neutral, and positive affect. A score of 1/2 will represent negative affect, a score of 2/3 will represent neutral affect and a score of 4/5 will represent positive affect. Coders will code affect every 3 minutes during a 30 minute observation session. The mean scores will then be calculated by dividing the total scores by the total number of observations taken.

Social validity measures will be conducted following the first sub-phase of intervention, after the second sub-phase of intervention is completed, and at follow up. Parent participants will be provided with an 8 item questionnaire with a Likert type scale in which 1 = strongly disagree, 3 = neutral and 5 = strongly agree. This scale was adapted from Stewart et al. (2007) and Jull and Mirenda (2011). The scale will evaluate whether or not parents perceived BST as an acceptable and important intervention for teaching their child. Mean scores for social validity
will be calculated by dividing the total scores by eight. The scale used can be found in Appendix E.

**Inter observer agreement.** Two pilot sessions will be recorded to train two observers for inter observer agreement. These will be downloaded onto a computer in the lab. The two observers will code the pilot sessions in the lab simultaneously, sitting one metre apart with a partition between them. Data will be coded using a paper data recording sheet and a pencil. The observers will not be allowed to communicate with each other during coding. Observers will code until they reach at least 90% accuracy across two consecutive observation sessions.

Observers will code child engagement and affect using a written set of operational definitions for the behavior. Observers will code parent implementation fidelity using a written list of task steps for implementation. Observers will note the occurrence and non-occurrence of child engagement, rate child affect and evaluate parent accuracy in the completion of each of the task steps in the facilitating a play date protocol. This will be done during video-taped probe sessions in the lab, sitting one metre apart, with a partition between them.

Observer agreement sessions will be collected in 33% of the observation sessions, balanced across phases and participants. Interval by interval agreement will be used. Agreement for child engagement will be calculated using the following formula: Number of agreement divided by (agreement + disagreements) x 100%. The percentage of agreement for affect and for parent accuracy in the completion of each step in the play date protocol will be calculated using the same formula as used for child engagement.

**Research Design**

We will employ a multiple baseline research design across participants to observe the effects of the study on two experimental dependent measures: (a) parent behavior and (b) child
behavior. A third descriptive dependent measure will be child affect. We will use multiple probe measurement strategy. The design will have three phases: baseline (A); behavior skills training package (B); and follow up at 1 and 3 months (C). A multiple baseline design across participants was chosen as new skills will be taught and these cannot be unlearned. In addition, it may be unethical to withdraw the intervention.

**Research Procedures.** The following research procedures will be implemented: (a) preliminary start-up, (b) baseline, (c) intervention, and (d) follow up. These are described below.

**Preliminary start-up.** The authors will recruit three participants from the agency in which they are employed. Children will be screened for the inclusion criteria described in the participants section above. In addition, the parents of the children will be interviewed to determine whether they would be suitable candidates for the study. Once the participants have been confirmed, preliminary information regarding each of the phases of the study will be discussed with the parents. The areas of the house where the play dates will occur will be determined and a video camera will be placed in the play date settings prior to experiment commencement to determine whether or not reactivity will occur.

**Baseline.** Parents will be asked to select a few activities (2-3) for their children to engage with in the predetermined settings and will be told to try to have the children play together. In addition, they will be instructed that they will have 5-10 minutes in between activities to set up the area and/or prepare materials for the next activity. The parents will be told to conduct the play date as they typically would and that no instruction from the observer will be given. No interaction between the observer and parent/children will occur. The dependent measures for the baseline phase (A) will be: (a) parent fidelity of implementation of the stages in the playdate
protocol, (b) appropriate play interactions between the children, and (c) child affect. Criteria for start of the intervention phase will be met when baseline data show a stable pattern.

**Intervention procedures.** The following intervention procedures will be implemented: (a) parent training, (b) play date implementation, and (c) follow up.

**Parent training.** Two initial training sessions for the parent participants will be conducted by the researchers in each of the participant’s homes on how to be effective play date facilitators for their children. The researchers will use a Behavioral Skills Training (BST) Package that involves four steps: instruction, modeling, rehearsal, and feedback (Stewart, et al., 2007). In the first step, instructions, the parents will be given a manual that the researchers will review with them. The manual will describe the rationale for treatment and the description of the treatment process, along with a description of the dependent variables for the study (ie. the parent and child aims). The researchers will instruct and brainstorm with the parents how to select activities for the play dates that are mutually reinforcing; that is, activities that both children would enjoy and find interesting (Koegel et al., 2005). The researchers provide instruction on how to arrange the activities so that the children will work collaboratively. The play date checklist (Appendix D) for facilitators will be described in detail to the parents. Modeling will involve the researcher demonstrating the behaviors outlined in Appendix D several times during various practice scenarios. During rehearsal and feedback, the parents will be given the opportunity to practice the play date facilitator skills, during which immediate feedback in the form of descriptive praise, error correction, and prompting will be provided by the researchers (Jull & Mirenda, 2011; Koegel, 2005).

**Play date implementation.** After the two training sessions, the observers will conduct videotaped probe measurement. An additional training session will occur after probe
measurement if the criteria for successful implementation of play date facilitation falls below 80% of steps accurately implemented. This process of an additional training session followed by another probe session will continue until the parents have reached 80% proficiency. Weekly play dates will be measured and no feedback or prompting will be given to the parents by the researcher during the play date. The parents will be told to use all of the strategies learned during the training sessions.

**Follow up procedures.** Follow up observations will occur at 1 and 3 months after the completion of the intervention phase. The follow up procedures will follow the same format as the intervention phase.

**Anticipated Results**

The anticipated results for baseline, intervention and follow-up phases are represented in figure 1.

**Baseline.** For the baseline phase, we anticipate that the parents will use between 10-20% of the implementation strategies for facilitating a play date. This prediction is based on previous research that found that prior to training, parents of children with autism did not use many strategies for facilitating a play date (Jull & Mirenda, 2011). We anticipate that positive social interactions between the children will be low, occurring in between 0-30% of intervals. This is based on previous research in the area of play dates (Jull & Mirenda, 2011, Koegel et al, 2005). We anticipate that child affect before the implementation of play date strategies will be within the neutral range based on previous research from Koegel et al. (2005).

**Intervention.** During the implementation of the behavior skills training package to teach parents how to facilitate a play date, we anticipate that the parents will use between 70-80% of the steps after the initial training provided by the BST package. This is based on research from
Jull and Mirenda (2011) where participants of this study implemented between 70-80% correctly during the initial training phase. We anticipate that parents will implement 80-100% of the implementation strategies correctly following additional training, based on the findings from Jull & Mirenda (2011). Furthermore, we predict that the positive social interactions between the children will range from 65-85% based on the findings of Koegel et al. (2005), who found that intervals where children engaged in reciprocal interactions ranged from 70-75%. It is also based on findings from Jull and Mirenda (2011) who noted an increase in reciprocal play interactions following parent training in facilitating play dates. Anticipated results are graphed in Appendix C.

For the descriptive measures, we anticipate that there will be an increase in affect ratings from baseline to intervention so that they will fall in the positive range (Score = 4/5) during the intervention phase. This is based on a study by Koegel (2005) who found that affect scores increased to within the high range with the implementation of contextually supported play dates. However, Jull and Mirenda (2011) did not find any relationship between facilitated play dates and increases in positive affect, so there is a possibility that affect ratings may remain within the neutral range. Anticipated affect scores can be found in Appendix A.

**Follow-up.** It is anticipated that parents will maintain some of the skills at follow-up, but may lose some skills. Jull and Mirenda (2011) found parents continued to implement some of the more simple steps in facilitating a play date, such as using motivating materials and preparing sessions in advance. However, parents did not continue to implement some of the complex steps, such as assigning roles to each child or prompting the peer to help. It is anticipated that the follow-up results in this study may be similar. Neuremberger, Ringdahl, Vargo, Crumpecker and Gunnarson (2012) implemented a BST training package to teach conversation skills to
young adults with autism. Follow-up data for one participant demonstrated that the skills were maintained up to 4 weeks but decreased at 8 weeks. Based on this, we anticipate that the skills will be maintained at 1 month post intervention but will decrease by the 3rd month of follow up. Miller, Crosland, Hewitt, and Clark (2014) noted that although research has demonstrated that BST is a successful way to teach new skills, maintenance results vary. The authors demonstrated that booster training for BST is a successful means to re-instating previously learned skills. Based on this research, we will provide participants with a booster training session at 1 and 3 months if required.

Social Validity. It is anticipated that social validity scores will be high throughout the intervention and at follow-up. On a scale of 1 to 5 we expect the scores to be either 4 or 5. Stewart et al. (2007) found social validity scores to be high for family implemented BST to teach social skills. Jull and Mirenda (2011) also found social validity scores to be high, when they provided parent training in facilitating play dates.
References


Appendix A
Table A1. Mean Child and Sibling Affect Ratings by Condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>1 - ASD</th>
<th>1 - Sibling</th>
<th>2 - ASD</th>
<th>2 - Sibling</th>
<th>3 - ASD</th>
<th>3 - Sibling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>2.8</td>
<td>3.0</td>
<td>3.2</td>
<td>3.7</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Intervention Start</td>
<td>3.0</td>
<td>3.9</td>
<td>3.4</td>
<td>3.9</td>
<td>3.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Intervention End</td>
<td>3.8</td>
<td>4.2</td>
<td>4.0</td>
<td>4.3</td>
<td>4.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Follow up 1 month</td>
<td>4.0</td>
<td>4.1</td>
<td>4.2</td>
<td>4.5</td>
<td>4.1</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Appendix B

Table B2. Parent Responses to Social Validity Statements at Intervention Start, End, and at Follow Up

<table>
<thead>
<tr>
<th>Participants</th>
<th>Intervention Start</th>
<th>Intervention End</th>
<th>Follow Up at 1 month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Mean Score</td>
<td>4.3</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>4.3</td>
<td>5</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Key: 1 = strongly disagree, and 5 = strongly agree
Appendix C

Figure 1. Percentage of sibling appropriately engaged in play and percentage of parent implementation.
## Appendix D

### Key Play Date Strategies Adapted from Jull and Mirenda (2011)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Play-date materials are prepared in advance by the parent. Children are able to manipulate the majority of materials without adult assistance.</td>
<td>All materials needed for a craft are available and organized, along with a sample of what the child is making. Items that are difficult to manipulate are prepared in advance e.g. cutting out small shapes.</td>
</tr>
<tr>
<td>2. Both children are involved in each step of the activity. Either one child will be providing directions while the other completes the task or both children have active roles in the activity.</td>
<td>If the children are baking, one child will read the directions while the other child measures the ingredients.</td>
</tr>
<tr>
<td>3. The parent provides instructions to each of the children regarding their role before starting the activity. New skills that are unfamiliar to the child are practiced before the play date.</td>
<td>If a child finds it difficult to stir ingredients, practise this skill with them before the play date starts.</td>
</tr>
<tr>
<td>4. Have only one of each type of item available. This will promote sharing.</td>
<td>There will only be one pair of scissors available during a craft activity, so that the children have to share these.</td>
</tr>
<tr>
<td>5. The parent is positioned behind the children during most of the activity.</td>
<td>The parents sits or stands a few feet behind the children throughout the play date.</td>
</tr>
<tr>
<td>6. If the child requires support, the parent will prompt the peer to provide assistance to the child.</td>
<td>If the child does not know how to do a step in a craft, say “___, can you show ____ how to do that?”</td>
</tr>
<tr>
<td>7. Parent helps the peer to follow instructions for the activity and prompts corrections as necessary. Parents will praise the peer for helping with the activity.</td>
<td>Parent helps the peer to follow the instructions to make a lego model. Parent praises the peer for showing the child with autism how to build a certain structure with lego model.</td>
</tr>
<tr>
<td>8. There is a variety of different types of activities per session.</td>
<td>There are at least three different activities per session. For example, crafts, board games, lego, baking, trains</td>
</tr>
</tbody>
</table>
9. The parent avoids using distracting stimuli or removes distracting stimuli from the activity.  

<table>
<thead>
<tr>
<th>9. The parent avoids using distracting stimuli or removes distracting stimuli from the activity.</th>
<th>The child with autism can become distracted when the Ipad is in sight so the Ipad is not visible within the environment during the playdate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Activities should be mutually reinforcing for both children. They should be things that they both like and enjoy.</td>
<td>Both children really enjoy playing with Beenie Boos, so this activity is available for the play date.</td>
</tr>
</tbody>
</table>

| 10. Activities should be mutually reinforcing for both children. They should be things that they both like and enjoy. | Both children really enjoy playing with Beenie Boos, so this activity is available for the play date. |
Appendix E

Adapted from Stewart, Carr, & LeBlanc, 2007 and Jull & Mirenda, 2011:

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The BST procedures were a useful way of teaching my child.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I would use BST training again in order to learn other skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I liked the procedures used in Behavioral Skills Training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I think that BST was effective in teaching me how to facilitate a play date</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Overall, I had a positive reaction to Behavioral Skills Training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I believe Behavioral Skills Training resulted in a meaningful change in my child’s behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. The strategies I learned were useful in helping my children interact with each other</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I will continue to use the strategies I learned in BST.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix F. Timeline

| Weeks 1-4 | • Complete literature search related to research topic  
|           | • Define research questions  
|           | • Prepare draft of thesis proposal  
|           | • Obtain approval of thesis topic from supervisor and supervisory committee  
|           | • Design social validity questionnaire  
|           | • Complete thesis proposal  
|           | • Submit ethics review application  |
| Weeks 5-9 | • Apply edits to thesis proposal and methodology  
|           | • Re-submit application to ethical review board  
|           | • Prepare and distribute letter to agency families for recruitment.  
|           | • Recruit research assistants for inter-observer reliability  |
| Weeks 10 - 14 | • Based on interest from families, select participants that meet the inclusion criteria for both parent and child participants.  
|               | • Send and obtain consent forms for participants.  
|               | • Train observers and assess inter-observer agreement  
|               | • Meet with the parents to discuss phases of the study, determine the areas of the home where the playdates will occur and place a video-camera in an inconspicuous place in these areas.  |
| Week 15-20 | • Implement baseline phase for all three participants  
|           | • Conduct inter-observer session  
|           | • Meet with supervisor to discuss implementation progress  |
| Week 20-21 | • Start behaviour skills training for the first participant  
|           | • Conduct inter-observer session  |
| Week 22-23 | • Probe first participant for meeting implementation criteria, and provide extra training if necessary.  
|           | • Meet with supervisor to discuss implementation progress.  
|           | • Start behaviour skills training for the second participant.  |
| Week 23-24 | • Probe second participant for meeting implementation criteria and provide extra training if necessary.  
|           | • Start behaviour skills training for the third participant  
|           | • Probe first participant for meeting implementation criteria and provide extra training if necessary.  
|           | • Conduct inter-observer session  
|           | • Collect social validity measures  |
| Week 25-26 | • Probe second participant for meeting implementation criteria and provide extra training if necessary.  
|           | • Probe third participant for meeting implementation criteria and provide extra training if necessary  
|           | • Meet with supervisor to discuss implementation progress.  |
| Week 27-28 | • Probe third participant for meeting implementation criteria and  |
| Week 28-40 | • Conduct follow up assessment at 1 and 3 months, and provide additional training if necessary.  
  • Conduct social validity measures again. |
| Week 40-43 | • Begin writing up results  
  • Discuss results with the supervisor |
| Week 44-46 | • Prepare results and discussion section  
  • Share draft of manuscript with supervisors and collaborators.  
  • Discuss feedback and make edits accordingly. |
| Week 47-48 | • Complete manuscript and submit for publication. |