INTRODUCTION

The Intergenerational Observational Scale (IOS) captures social behaviors and exhibited affect associated with older adult and child/youth target participants during intergenerational (IG) and single generation programming. Persons using the scale and facilitating the IG programming can use IOS data to consider how well the activity supported social interaction and positive affect between the generations or within a single generation group. The scale should be used during activity programming rather than during periods of transition or rest. Observers using the scale must focus on the target participant’s behaviors, affect, and level of engagement while coding. Additional cues come from the environment and other participants and staff. Observers identify up to five participants to observe, watching each in turn to represent participants’ experiences throughout the duration of an activity. An observer watches the first target participant for 15-seconds and then takes 15-seconds to record codes indicating the behavior (predominance and occurrence) and affect of the person. If the target participant interacts with an intergenerational participant, the predominant affect of the other person is also recorded. The cycle repeats for up to four other identified target participants before beginning a second round of observations. For a 20-30 minute IG activity, observers will record 8-12 sets of observations per person.

The IOS Protocol manual describes the constructs that are coded with the scale, directions on preparing observation forms, steps for establishing and calculating inter-rater agreement, or reliability, and recommendations for live coding. Appendices provide extensive examples of the behavior codes, blank copies of the forms used to observe and calculate inter-rater agreement, and samples of completed forms. Supplemental practice videos and forms are provided for observers to establish inter-rater agreement before using the IOS for data collection. Observers send their User Agreements and documentation of inter-rater agreement to Dr. Shannon Jarrott in order to become authorized to use the IOS.

Training to become a reliable observer using the IOS involves four steps. Three of these utilize practice videos, which are included with the training materials. The final step involves coding live to establish inter-rater agreement with a coding partner. While coding video recorded activities has its advantages, we strongly advocate that observers gather their data live (backed up, ideally, with video recorded sessions). Drawbacks of live coding include scheduling challenges, the potential distraction to staff and participants, and the inability to re-watch an activity after it ends (unless the session is videotaped). Live coding also has an important benefit, the capacity for observers to move around the room and view multiple target participants’ faces and bodies. Live observers can also tune into environmental features that might affect participants. Live coding is low tech and less likely to cause technical difficulties than video recording. A great deal can affect the outcome of an IG activity that is not visible on a video screen, and indicators of participants’ responses to the activity are not always visible if the camera is focused on a few participants’ faces, so we maintain that live coding is best.
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I: The Intergenerational Observation Scale: Part 1

Gathering Information about the Physical and Social Environment

Part 1 of the IOS captures information about the physical and social environment of the IG contact setting (see Appendix A). Observers complete some items before the activity begins, but other items can’t be completed until the activity ends. The following describes individual items in Part 1.

Observers should arrive 15-20 minutes before the start of an activity to gather and record information about facilitators, preparations, and physical set up of the activity on Part 1 of the IOS form. During this time, observers should make a point to learn facilitators’ names, characteristics and number of participants expected, and the objectives of the activity. They should note rapport between facilitators and watch the set up of the physical space.

Planned start and end time

Note the planned start and end times of the IG opportunity as well as the actual start and end times. Noting both times provides information on the timeliness and effectiveness of coordination between groups, as well as whether there may be a reason to change planned program times to better suit the needs of one or both groups.

Actual start and end time

The actual program start and end times should be marked by specific events that are observable and repeatable across activities. For example, the IOS has been tested with an IG program that begins and ends each activity period with a song sung by both generations. This recorded start time is distinct from the times that each group arrives to the program location, although these times are also recorded; the notation of arrival times as part of readiness data will be explained below.

IG activity

Briefly name and describe the IG (or single generation) activity to be implemented during the session.

Facilitators

Indicate the primary and secondary (if applicable) facilitators for both the older adult and child participant groups.

Primary desired behavior

Information gathered should indicate the primary desired behavior of participants in the specified activity. For example, indicate whether the objective of the activity is to support behavior that is interactive, turn taking, active watching, or solitary engagement. It is most helpful to indicate one primary behavior; however, if the nature of the activity results equally in more than one behavior, please provide a brief explanation to accompany your selections.
**Child and adult groups**

The type of child/youth and older adult participant groups should be indicated. For example, indicate if the children or youth are from a preschool, elementary school, or after school program. One might detail that older adult participants are from an adult day services program, a senior center, or a nursing home. Groups may also include subgroups within a program (e.g., stroke clinic, dementia unit, physical limitations only).

**Environmental description and figure**

Observers should make notes of the environment that will be helpful in understanding the behaviors observed during the IG activity. Intergenerational cooperation can be encouraged or discouraged by the placement of materials and chairs. Observers should note the arrangement of participants, facilitators, furniture, and materials. See Figure 1 for a diagram of what may be recorded about the environmental arrangement. In this diagram, the circles represent intergenerational pairs seated around a table, and the materials are placed on the table in a paired arrangement.

Arrangements of materials should be classified as central, paired, or parallel. A **central** arrangement is one in which materials to be shared are placed in the middle of the workspace. In a **paired** arrangement, materials are distributed dyadically to encourage sharing between IG partners. A **parallel** arrangement is one in which each participant receives his or her own set of materials. Use simple sketching and codes to sketch out the arrangement and provide a key if needed. For example, C = Child, A = Adult.

Finally, make note of unusual distractions that might affect the activity, such as another classroom coming through the space or a fire drill.

![Figure 1. Diagram of an IG activity.](image-url)
**Age- and ability-appropriateness**

Activities should be planned and facilitated to be age- and ability-appropriate for youth and elder participants. An age-appropriate role is one that a participant would take on his or her own (e.g., a child might gravitate towards blocks while an elderly person likely would not). For example, an IG Play-Doh activity may be age-appropriate for elders if the adult partners are asked to help the child create something. The activity would be age-inappropriate for the elders if the adults were given their own Play-Doh to use in parallel to the children, because an adult would not likely choose to work with Play-Doh on his or her own. Many activities using materials children prefer (e.g., crayons, blocks, or children’s books) are made age-appropriate for adults by involving the elders as mentors or helpers to the children. Asking an elder to engage with materials or activities geared towards children as if the adult is an age peer is age-inappropriate.

Ability-appropriate activities provide a supportive environment for participants to use existing or developing abilities to assume a role. It may be difficult for an adult with arthritis to have an ability-appropriate role in an activity that involves stringing small beads on fishing line. However, the role could be made ability-appropriate (and age-appropriate) if the adult is asked to help a child string large beads on a thick string or a stick. (Be careful in this instance that the modified activity is appropriate for the child).

**Materials and facilitators prepared and ready**

Record whether youth and elders arrived on time for the scheduled activity start. Indicate whether facilitators and activity materials are ready before the start of the activity. It is important to note that “Materials prepared and ready for activity” is distinct from “OA (older adult) facilitator ready” and “C (child) facilitator ready.” These items are distinguished from each other because facilitators from the two groups will generally take turns preparing materials for the activity. Regarding facilitator readiness, a facilitator who has to return to their space to get clients or complete other tasks is not prepared for the session, even if materials are in place for participants to use.

**Facilitator rapport**

Record indicators of facilitator rapport using the Likert Scale provided (0=not at all true, 1=somewhat true, 2=mostly true, 3=not applicable). Reports should be based on behaviors observed immediately before and during the IG activity. *If only one staff member is facilitating the activity, code this item as “3: not applicable”.*

- **Communicate effectively with partner**: Communication contributes to effective set up and implementation. Facilitators need not communicate extensively to be effective.
- **Encouraged IG interaction**: Use directions, encouragement, and actions to foster interaction as opposed to interacting exclusively with one participant or their own group of participants.
- **Partners shared in facilitation**: Both facilitators demonstrate responsibility for the activity and interaction with participants. Note, it is acceptable for planning/facilitation to be the primary responsibility of one staff member, but all staff present at the activity should share in facilitation.
- **Responsive to needs of participants, regardless of age**: Interacts with participants of both groups, does not shy away from the other group or specific members of the other group. This may involve getting the other program’s facilitator to assist with care (e.g., if a participant is having a critical health concern).
- **Demonstrating age- and ability-appropriate communication and behavior**: That is, not
treating adults like children and being respectful of all participants. See notes above on age- and ability-appropriateness.

- **Intrusive or over-involved with participant(s):** Interacting so intensively with a participant that the participant cannot interact with others or that the facilitator is unavailable to other participants.

- **Brought positive attitude and energy to the session:** As opposed to being negative, discouraged, voicing doubt.

- **Effectively moved around activity space:** Does not interfere with participants’ abilities to see or interact with each other, does not get cornered into an area of the activity space.
II: THE INTERGENERATIONAL OBSERVATION SCALE: PART 2
GATHERING INFORMATION ABOUT BEHAVIOR AND AFFECT

SOCIAL AND BEHAVIORAL CATEGORIES

When coding the behaviors of the target participant, observers note the behavior, affect, and level of engagement of the individual (see Appendix B). The following details the basic social behavioral categories associated with IG or age-peer participants or staff members. When implementing the following observation and coding practices, it is important to remember to only code for behaviors and affect that are visible and describable according to participant behavioral and affective cues. See Appendix D for more detailed notes and examples for each IOS behavior code.

• **Interactive**: The target participant works/plays/communicates with or acknowledges one or more individuals in the room. Interactive behavior is not dependent on responses of others. That is, a target participant who initiates a behavior intended to engage another person should be coded as interactive even if the effort does not elicit a response. Interactive communication may be verbal or non-verbal (e.g., active listening, eye contact, an extended hug, shaking hands, or patting someone on the back might be coded as interactive). Acknowledgement is interactive when the behaviors elicit or are intended to elicit a response from another person. For the current scale, we distinguish between interactive behaviors with IG participants, age peers, and staff.
  o **Interactive IG** involves interaction with or acknowledgement of a member of the other generation of participants.
  o **Interactive Peer** involves interaction with or acknowledgement of a participant from the target’s program but not interacting with any IG partners.
  o **Staff** involves interaction with or acknowledgement of staff from either program but not with any IG or peer participants.

• **Watching**: The target participant’s behavior is characterized by watching the activities of others but not participating. Someone who is watching may demonstrate an affective response to the activity they are watching (e.g., laugh at activity of others in the room). The participant should be aware of his or her surroundings.

• **Solitary**: The target participant is engaged in an activity without acknowledgment of others.

• **Unoccupied**: The target participant is characterized by a marked absence of focus. There are four general types of unoccupied behavior: (1) the target participant stares absent into space, (2) the target participant engages in wandering or repetitive behaviors that have no purpose, (3) the target participant scans the room with his/her eyes without really focusing on anything, or (4) the target participant is asleep.

AFFECTIVE CATEGORIES

Another component of IOS Part 2 focuses on determining whether participants are exhibiting Positive or Negative Affect (an expressed or observed emotional response) during the observation time frame. Neutral affect is not coded in the IOS because earlier versions of the scale demonstrated that neutral affect consistently predominates individuals’ emotional state.

Observers should take a few minutes at each site where they observe target participants before beginning to code. During this time, observers should note participants’ affective signs (facial expressions and tone of voice), behavioral signs (body language and actions or reactions), and
social behaviors as cues to how the individuals engage in behavior (e.g. does a participant have physical challenges engaging in certain behaviors) and express affect (e.g. does this person’s neutral affect look a bit like a frown). This baseline observation, used in conjunction with the manual should be the basis for coding decisions, as opposed to additional, non-diagnostic information an observer may possess about the client (e.g. if you know that a slight scowl from a participant really means that he is happy because you’ve worked with him at a center for an extended period of time).

- **Negative Affect**

  **Affective signs**: yelling, frowning, drawing eyebrows together, clenching teeth, pursing lips, narrowing eyes, wincing/grimacing, eyes wide (not accompanied by smile or positive interest), tight facial muscles, gaze aversion, moaning, sighing, crying, statements of sadness, and anxious/fearful/angry tone of voice.

  **Behavioral signs frequently associated with Negative Affect**: restlessness, whining, wringing hands, rapid breathing, rigid limbs (arms at sides, legs/feet tense), head in hand.

  **Antagonistic behavior frequently associated with Negative Affect**: overt noncompliance, disapproval, rejection, blaming, insults, quarreling, ignoring, a child’s temper tantrum, emotional outburst, and physical confrontation.

- **Positive Affect**

  **Affective signs**: smiling, laughing (note: not always positive), eyes crinkle as if “smiling,” positive and light tone of voice, statements of pleasure, and eyebrows raised (note: not always positive).

  **Behavioral signs frequently associated with Positive Affect**: singing, kissing, stroking or gently touching other, reaching out warmly to other, and response to music (e.g. tapping foot or clapping hands).

  **Prosocial behaviors frequently associated with Positive Affect**: help-giving, guidance, praise, reassurance, protection, gift-giving, permission giving, invitation to join, joke telling.

**Capturing Behavior and Affect Using the IOS**

**The coding cycle**

During each observation period the target participant is observed for a 15-second interval, and the next 15 seconds are spent recording the predominant activity, occurrence of behavioral categories (except Unoccupied, Solitary, and Watching), and occurrence of Positive or Negative Affect using the designated columns.

**Predominance vs. occurrence of behaviors**

Even within a brief observation interval, an observer can witness different behaviors and affective states, all of which can help understand IG programming. Predominant behaviors are important as they indicate which behaviors are most commonly present in an IG activity; however, occurrence of behaviors and affect are also important to capture as they indicate the potential of a given activity to support IG interactions. For example, a new IG program may not yield many observations where IG interaction predominates, but the occurrence of Interactive IG behaviors in these early sessions indicates the potential for the activity and contact process to achieve desired
social behaviors. In order to capture the target participant’s experience, predominance of behavior is coded; occurrence of behavior and affect are also coded. The predominant behavior is the behavior that occurred for the longest amount of time during an observation interval. When Interactive behaviors predominate, they also get occurrence checks. Occurrence checks indicate which behaviors occurred for at least two seconds during an observation interval.

For the IOS, any behavior may predominate, but occurrence checks are only noted for the following: Interactive IG, Interactive Peer, and Staff. If Interactive behaviors are of short duration and consist of 2 or more brief interactions with another person, then these will be coded as an occurrence. Occurrence checks are not recorded for Watching, Solitary, and Unoccupied behaviors because they do not typically possess the same potential to foster IG interactions.

Behavior Code Hierarchy

During each 15-second interval, only one behavior is coded as predominant. If more than one behavior occurs during a 15-second interval, the longest lasting behavior is coded as predominant. If the behaviors are of the same length, the observer “codes up.” Thus, if two or more behaviors occur equally during the observation period (and longer than other observed behaviors), then the behavior most likely to support social interaction between IG partners will be coded as the predominant behavior. For example, if both Interactive IG and Staff behaviors were observed for equal amounts of time, the observer would code Interactive IG as the predominant behavior. Presented below is the hierarchy for social behaviors, with Interactive IG being the most desirable and Unoccupied the least.

Table 1
Behavior Code Hierarchy

<table>
<thead>
<tr>
<th>Categories</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive: IG</td>
<td>Interaction with a member of the other generation of participants.</td>
</tr>
<tr>
<td>Interactive: Peer</td>
<td>Interaction with an age peer without interacting with an IG partner.</td>
</tr>
<tr>
<td>Staff</td>
<td>Interacting with or acknowledging a staff member from either program without engaging with peer or IG partner socially.</td>
</tr>
<tr>
<td>Watching</td>
<td>To watch (or listen to) the activities of others without participating.</td>
</tr>
<tr>
<td>Solitary</td>
<td>To engage in an activity alone without acknowledgment of or interaction with others.</td>
</tr>
<tr>
<td>Unoccupied</td>
<td>Complete lack of goal or focus, includes repetitive, self-stimulating behavior.</td>
</tr>
</tbody>
</table>

Occurrence of affect

Coding affect also provides insight to participants’ experience in activities. We code occurrence of Positive and Negative Affect for target participants and IG partners.

If Interactive IG behavior is coded as either predominant or occurring during the 15-second interval, the target participant’s IG partner is also coded for their affective response during the observation period. The observer should note facial and vocal cues, behavioral signs, and social behaviors that indicate the participant’s overall affective state.
Indicate with a check in the appropriate column if Positive or Negative Affect occurred during the time frame. If both Positive and Negative Affect were observed, check both the Positive and Negative Affect columns.

No Codes (NC)

Target participants may only receive codes for predominance if they are observable for half or more of an interval. There are a variety of reasons why a target participant may not be observable during his or her designated time frame:

1. The target participant interacts with an observer during the time frame (the interaction could be changing the target participant’s behavior and/or affect that would be coded).
2. The observer becomes distracted or temporarily leaves the session during the time frame.
3. The target participant leaves the activity (or is not visible) during a time frame in which she or he is being observed.
4. The IG partner is not visible during a time frame in which she or he is being observed. Note: this applies only when IG partner affect should be coded.

In these cases, the observer should indicate a “No Code” by writing “NC” in the cell for predominant behavior (or in the columns for partner affect when applicable). Occurrence checks should still be noted for any portion of a time frame that the participant is observable. If the target participant has left the activity area, the observer should not skip ahead to the next participant during that time frame, but rather continue observations as scheduled.
III. DIRECTIONS FOR USING THE IOS

1. Prepare observation materials.

Talk to facilitators to find out who is facilitating, what the activity is, objectives of the activity, what groups of adults and youth will participate, and how many participants to expect (see p. 7 for details about arriving early). You will want to determine how long the activity is expected to last so you can plan with your partner how many time frames you will likely observe. Observers should be prepared for an activity to last 30 minutes (prepare time intervals on two pages of the IOS Part 2 form). Researchers may wish to continue beyond 30 minutes depending on their research question.

Fill out the observation time intervals on the IOS Part 2 forms. We recommend starting at 1:00 so you can get situated and watch the first participant from 1:00-1:15 and move on to the second target participant at 1:30 etc. Make sure your time frames are labeled the same on your partner’s observation form. Set a digital timer or stopwatch and check that it works (a timer attached to a clipboard works well). See Appendix E for a sample completed observation form.

2. Observe staff, materials, and physical set-up of the activity space.

Record information on IOS Part 1 regarding staffing, planned start and end time, the activity, participating child and adult groups, materials, and set up of the activity space. (See pp. 7-10 for details on each variable for Part 1).

3. Select target participants.

Identify which 4-5 participants you will observe, the order in which you will observe them, and the time frames you will observe them. While research questions may lead observers to capture data only for youth or adults, we recommend observing both generations since IG activities should be mutually beneficial.

4. Introduce yourself to the group and observe target participants before the activity.

Observers should watch target participants for 1-2 minutes before recording data in order to become familiar with contextual cues regarding participants’ behaviors.

Observers new to a site or setting should introduce themselves to the group and let the staff and participants know that they are there to see how the activities are going. Observers should alert participants that they cannot join the activity because they are working. A good way to respond to invitations to join an activity might be, “We’re interested in seeing how things work when the children/youth and adults come together, and we’re going to make some notes about what we see.” Informing staff and participants about the purpose of the observations can alleviate concern someone might have about doing something “wrong” during the activity.

After introductions, observers should try to blend into the background. The observer needs to be able to move around the room in order to see target participants’ facial expressions and body language (being close enough to hear verbal exchanges is also very helpful). Good
observers avoid eye contact with staff and other participants. Staff and participants quickly become accustomed to observers’ presence, allowing observers to concentrate on their work.

5. **Begin live coding.**

All observers in a session should begin coding when the facilitators begin the activity. Note the actual start time of the activity, if youth and adult participants were on time, and if the facilitators and materials were ready when the activity began. If an activity begins late, observations should begin when the activity starts. We recommend designating one observer responsible for signaling the start of the timers with a wave or head nod to other observers.

As participants are observed in turn, the observer will watch the 1st participant for one cycle and record codes, then observe the 2nd participant for one cycle and record, etc., until all targeted participants are observed. The observer will then begin again with the 1st participant for a second cycle of observations, continuing until the activity ends or 30 minutes of observation have been completed.

6. **Finish observation.**

If the activity does not last 30 minutes, stop observing when the planned activity ends. If an activity runs longer than a scheduled ½ hour block of time, stop observing at 30 minutes.

Record information on IOS Part 1 regarding when the activity ended, the primary desired behavior evidenced during the activity, how many child and adult participants joined the activity, environmental notes, age- and ability-appropriateness of the activity as it was presented, and indicators of facilitator rapport. (Note: Responses for facilitator rapport should be recorded independently, so they will not necessarily be the same as an observation partner’s responses.)

7. **Discuss concerns or questions with your observation partner.**

Discuss concerns or questions about coding with your observation partner at the conclusion of the observation session and at team meetings. Refer to your manual for clarification. Protect client confidentiality and maintain good observer/family relations; beware of having conversations about children or elders in the hallways or common areas where parents/caregivers/staff may overhear conversations.
IV. BECOMING A RELIABLE OBSERVER

After studying the IOS, observers need to determine inter-rater agreement (an indicator of scale reliability) before collecting observational data. We describe four steps for determining inter-rater agreement before coding for data collection. The first three steps require practice coding videos, which are provided with the training materials. Observers use accompanying blank IOS Part 2 forms to code the videos and compare codes against an “answer key” and inter-rater agreement calculation table (see Appendix F). After successfully completing these three steps with the practice videos, a fourth step involves establishing inter-rater agreement while coding live.

Observers should reach inter-rater agreement of 80% or better for behavior predominance at each step before moving onto the next step. Observers may also check for inter-rater agreement on behavior and affect occurrence checks. We feel that agreement on behavior predominance is the most important step for reliable collection of IOS data. We have not checked observers for inter-rater agreement on IOS Part 1 items as they are rather straightforward, but observers may wish to do that with an observing partner.

We typically use an Excel worksheet to calculate inter-rater agreement with Cohen’s kappa, and the training materials include an Excel worksheet and a sample completed worksheet. Kappa scores have an advantage over simple agreement rates because they take into account the amount of chance agreement an observer could expect. Directions for using this method are at the end of this section. Not everyone has Excel, and, though kappa scores can be calculated by hand, we provide a simple process (and template) for calculating inter-rater agreement as an indicator of inter-rater reliability. The calculation can be done without a computer at an observation site to determine inter-rater agreement before proceeding with data collection.

STEPS 1-3: VIDEO CODING PRACTICE

Preparing practice observation forms for video coding:

For steps 1-3, identify the video you will code and print the accompanying blank IOS Part 2 form. The form will describe the target participants to be coded and provide the time intervals to code a specified participant. Fill in your information (name, date, and whether you are coding the practice video with stops and re-watching, stops without re-watching, or with no stops), and code the video.

Practice coding the videos in order; use a different video each time and at each step.

1. Stop and re-watch.

Prepare your IOS Part 2 form, circling “Video: Re-watch” at the top of the page. At this step, you can stop and replay a given time frame as many times as you need to in order to determine the codes to record. Keep your manual handy and refer to it when making coding decisions.
Calculate your inter-rater agreement with the observer’s codes in the answer key (see below). Once you achieve agreement of 80% or better having coded two or more practice videos, move on to step 2.

2. Stop without re-watching.

Prepare your IOS Part 2 observation form, circling “Video: Stops, No Re-watch” at the top of the page. At this step, you can stop the video to check your manual and make coding decisions, but you should not rewind and re-watch any of the time frames. Keep your manual handy and refer to it to assist with your coding decisions.

Calculate your inter-rater agreement with the observer’s codes in the answer key (see below). Once you achieve inter-rater agreement of 80% or better having coded two or more practice videos, move on to step 3.

3. No stops.

Prepare your IOS Part 2 form, circling “Video: No stops” at the top of the page. At this step, you should code as if the activity was live. Do not stop or re-watch any of the time frames. As always, keep your manual handy; you will not likely have time to refer to it while watching the video, but you can use it afterwards to review your codes.

Calculate your inter-rater agreement (see below) with the codes in the answer key. Once you achieve inter-rater agreement of 80% or better having coded two ore more practice videos, you are done using the practice videos and are ready to move onto live coding in step 4.

Calculating inter-rater agreement with practice videos:

After coding a practice video, print out the appropriate “answer key” and inter-rater agreement calculation table.

Do not change any of your observation codes. Record the predominant behavior code (1-6) for each time frame on the inter-rater agreement calculation table. Note that you will enter codes for all the time frames for target participant 1 before recording all the time frames for target participant 2, etc. In each column, compare your code to the “answer” below it; record a “1” in the bottom cell of the column when codes match and a “0” when they do not. If you or the answer key have a “No Code” for a time frame, exclude that time frame when calculating inter-rater agreement. Add the 0’s and 1’s in this bottom row, recording the sum in the last cell in the row. Divide your total by the number underneath (this is the number of potential matches you could achieve) and multiply by 100. This represents the percentage of your observations that match the answer sheet. You should reach 80% or better before moving onto the next step in the process. See Appendix G for a sample completed inter-rater agreement calculation table.

If you do not achieve 80% inter-rater agreement at first, do not be alarmed! It should take practice coding a few videos to reach acceptable agreement rates. Repeat the process with the next practice video. Calculate your inter-rater agreement rate for the next video but also calculate a total inter-rater agreement rate by adding agreement data from previous videos coded at the step you are working on to the data for the video you just coded.
If you do reach 80% or better inter-rater agreement, congratulations. We recommend that you practice coding at least two videos in each step before moving onto the next step.

**STEP 4: LIVE CODING PRACTICE**

After achieving inter-rater agreement coding the practice videos in steps 1-3, observers need to establish inter-rater agreement coding live intergenerational activities with a partner who has also progressed through steps 1-3.

*Preparing practice observation forms for live coding:*

Follow procedures in the manual for arriving at the site, familiarizing yourself with the environment, program staff, and participants, and introducing yourself to the group (see p.15). Prepare blank IOS Part 2 forms, circling “Live coding: reliability” at the top of the form.

4. **Code live.**

   Each observer should have a digital timer or stopwatch that counts seconds (a timer attached to a clipboard works well) so observing partners can start their timers at the same instant. We recommend designating one observer responsible for signaling the start of the timers with a wave or head nod to other observers. While observing, make notes about coding questions that you can answer with your manual afterwards.

*Calculating inter-rater agreement when coding live:*

Immediately after completing your observations, and without discussing the activity you coded, fill in an inter-rater agreement calculation table and calculate your agreement with your observing partner. If either partner has a “No Code,” for a time frame, exclude that time frame when calculating inter-rater agreement.

If you are working with more than one observing partner, you will use multiple inter-rater agreement calculation tables. With an even number of observers, one person simply compares his or her codes to one other partner. With an odd number of observers, one person’s codes will be entered on multiple tables as if he or she was the observing partner of multiple observers.

After calculating your inter-rater agreement rate, discuss instances where you and your observing partner disagreed, but do not change your codes. Try to reach consensus on which predominant behavior code was correct for a given time frame – use the manual! If you have access to a video camera with a timer feature and permission to videotape activities (Institutional Review Board approval or advisory board approval is often required before live or videotaped observing), it can be helpful to re-watch the video when checking discrepancies between partners.

Once you achieve inter-rater agreement of 80% or better after observing at least two live sessions, you are able to observe independently for data collection purposes. Observations made during step 4 (noted by circling “Live coding: reliability” on Part 2 of the IOS form) should *not* be used for data analysis. As you code more than one live activity to reach an acceptable inter-rater
agreement rate, calculate an inter-rater agreement rate for individual activities and a total inter-
rater agreement rate by incorporating your agreement data from previous activities coded live.

**OTHER NOTES ON RELIABILITY**

*Checking and re-establishing reliability:*

We recommend that observers re-establish inter-rater agreement when they move to a new site or
setting and every 4-6 weeks of observing to insure that observations are consistent with the
manual. “Observer drift” can occur when an observer misinterprets guidelines in the manual and
then consistently makes the same coding error across observations.

*Sending inter-rater agreement documentation:*

Keep your inter-rater agreement calculation forms with your name, your step in the reliability-
checking process, and date clearly recorded on each form. We will use these data to determine the
psychometric properties of the scale and determine if any subsequent modifications to the scale
are needed. Send clean copies of these to Dr. Jarrott as part of your user agreement. They may be
sent as a PDF to sjarrott@vt.edu if the copy is clear.

Dr. Shannon Jarrott  
Department of Human Development (0416)  
Virginia Tech  
Blacksburg, VA 24061

*Calculating Cohen’s kappa for predominant behavior codes using the Excel worksheet:*

We have used Excel (see Appendix I) to calculate inter-rater reliability with kappa scores. Kappa
scores should be .6 or better to indicate acceptable inter-rater agreement at a given step in the
process of establishing reliability.

The Excel table is a simple grid indicating how often you coded each behavior codes as
predominant compared to the practice video answer guide or your observing partner. Data on the
diagonal indicate agreement. Data entered in cells off the diagonal indicate discrepancies. The
worksheet is useful because it allows you to see if there is a pattern in your discrepancies coding
with the practice video or another coder.

*Directions for entering data into the kappa worksheet:*

1. Enter the number of observation time frames for which you and your observing partner (this
   might be the practice video answer key) both had a code of 1 (IG Interactive) in cell (C,6). If
   you had codes of 1 that differed from the other observer, fill the table in accordingly. For
   example, if you had one code of 1 when your partner had a code of 3, you would enter a 1 in
   the third row of the first column (C,8).
2. Repeat this process for each of the six behavior codes in the designated columns.
3. If either partner has a “No Code” (NC) for a time frame, both partners exclude that information when calculating inter-rater agreement, and the “No Code” time frame is excluded from the total number of time frames in the denominator.

4. The number in the cell (1,12) is the number of time frames for which you and your observer partner were in agreement.

5. The number in the cell (1,17) is the total number of time frames coded in the dataset.

6. We recommend that you start a new Excel worksheet for each day of observations so you can determine your kappa score for a given day.

7. We also recommend that you keep an Excel worksheet where you calculate cumulative kappas. Determining your reliability at a given step depends on reaching a cumulative kappa score of 0.6 or better.
### APPENDIX A: BLANK OBSERVATION FORM (IOS PART 1)

#### PART 1: INTERGENERATIONAL OBSERVATION FORM

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<tr>
<td>Secondary (if applicable):</td>
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#### Primary Desired Behavior Response: (circle one; see manual for additional protocol)
- Interacting
- Turn-Taking
- Active Watching
- Solitary Engagement

**Indicate Child/Youth Group:**

**Indicate Adult Group:**

**# Older Adult Participants:**

**# Children/Youth:**

**# Other Staff:**

#### Observer Notes:

Environmental description: location, materials, placement of materials (central, paired, or parallel), noise level, other distractions. If the activity was dynamic (for example, if the activity involved one group visiting the other’s location), please describe with text as well as providing a figure below to the extent possible.

Physical set up of activity (draw a figure):

Comment on whether activities and materials were age- and ability- appropriate for adult and child participants.

#### Other Notes:
Please Respond:

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<tr>
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Facilitator rapport:

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<tr>
<td>Communicated effectively with partner*</td>
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<tr>
<td>Encouraged IG participant interaction</td>
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<td>Partners shared in facilitation*</td>
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<td>Responsive to participants, regardless of age</td>
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<tr>
<td>Demonstrated age-appropriate communication and behavior</td>
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<tr>
<td>Intrusive or over-involved with participant(s)</td>
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<tr>
<td>Brought positive attitude and energy to the session</td>
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</tr>
<tr>
<td>Effectively moved around activity space</td>
<td></td>
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</tbody>
</table>

0=not at all true  1=somewhat true  2=mostly true  *3=N/A. For starred items, record 3 if only one facilitator presents the activity.
**APPENDIX B: BLANK OBSERVATION FORM (IOS PART 2) FOR PRACTICE VIDEO CODING**

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<td>These observations represent (circle one): Video: Re-watch Video: Stops, No Re-watch Video: No stops</td>
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Record the # of the predominant behavior in the “Predominant” column. Use ✓ in corresponding columns to indicate if a behavioral category or positive/negative affect were observed. Each row represents one 15-second time frame (15 seconds observing and 15 seconds recording before the next time frame) for up to 6 observational time frames per person.

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**NAMES**

BEHAVIOR (indicate predominant & ✓ occurrence)

1st person observed
Name: 
Description: 

2nd person observed
Name: 
Description: 

3rd person observed
Name: 
Description: 

4th person observed
Name: 
Description: 

5th person observed
Name: 
Description: 

6th person observed
Name: 
Description: 

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APPENDIX B: BLANK OBSERVATION FORM (IOS PART 2) FOR PRACTICE VIDEO CODING
## APPENDIX C: BLANK OBSERVATION FORM (IOS PART 2) FOR LIVE CODING

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APPENDIX D: NOTES AND EXAMPLES FOR EACH IOS BEHAVIOR CODE

Interactive: Interaction with or acknowledgement of another person.
- Participants may be interdependent; the success of a task is dependent on both members’ involvement and skills.
- Participants may be interactive by directing, supporting, mentoring, teaching, showing, modeling, or offering suggestions to their partners.
- Interaction may involve caregiving behaviors, such as holding a child or helping their partner stand up.
- Interaction involves both verbal and non-verbal communication. Common non-verbal interactions, such as active listening, include prolonged eye contact, nodding head, turning to face another participant, and responsive facial expressions.
- Physical touching often denotes interaction.
- There is acknowledgment of the other person, such as moving physically in response to others (i.e. making room for them to sit down, scooting closer to the person), eye contact (may or may not be their assigned partner), or mimicking/mirroring the behaviors of others.
- Interaction is focused on the target participant’s behaviors. If the target participant attempts to make contact with another participant, that behavior would be coded as interactive regardless of the other participant’s response.

Brief examples of a target participant engaged in interactive behavior:
- Helping child pick an UNO card to play
- Handing tennis balls to IG partner
- Asking for/offering help
- Building a tower with dominos together
- Conversation regarding the story being read
- Child touching older adult’s shoulder and leaning over to see the book he is reading
- Digging a hole while the other participant plants seeds in the hole
- Holding hands while going for a walk
- Assisting a child put a puppet on the child’s hand
- Sitting next to each other on the couch listening to a story read by another person but acknowledging the other person by mimicking their neighbor’s behavior, glancing at them, and/or other forms of acknowledgment
- A child shows an older adult a painting they made in class
- Teaching a new game to another participant
- While painting a bird house together, participants talk about what colors to use, what kinds of birds will use it, and where the bird house will be hung
- While waiting for their turn, the target participant praises another participant and uses non-verbal behavior to communicate interaction

Expanded examples of IG Interactive behavior:
- The IG facilitators planned to engage the participants in story time. One of the older adults (the target participant) was asked to read aloud a children’s story to the group. While reading the story, the older adult stopped frequently to ask the children and older adults questions about the story. At one point, the older adult asked the participants what they would have done if they were the main character in the story. This provoked a lively discussion among participants with plenty of eye contact, active listening, conversation, and a few pats on the back.
• While playing a card game, participants had a few minutes of time between each of their turns. After taking her turn, one child (the target participant) turned to her IG partner and began telling him about the game she likes to play with her best friend.

• The planned activity for the day was taking a walk outside. The IG partners quickly paired up and began walking. The target participant, an elderly woman, reached for her partner’s hand to hold. When a bird began chirping, the older adult asked the child to mimic the bird’s chirp. The two were soon making various bird noises and whistling sounds together as they continued on their walk.

• While playing a card game, participants had a few minutes of time between each of their turns. After taking his turn, a child began to mimic his IG partner by tapping his cards on the table in the same manner of his partner. His IG partner glanced over at him several times and smiled when he noticed the child mimicking his card tapping, and he continued tapping the cards on the table. Both participants were acknowledging each other.

• The older adults at an IG program joined some preschoolers to work on an art project. The older adults and children were paired with each other in order to work on one art project together. One pair approached the activity by sharing one piece of paper, but painting their own picture on each side of the paper. They shared the same materials, glanced at each other’s artwork, but made no move to combine their efforts in order to create one picture together. Their movements seemed coordinated with one another, as both the older adult and the child took turns using materials, rinsing out their brushes, and taking care not to bump their partner. (Note: While not highly interactive, the acknowledgements illustrated in this example make the behaviors IG Interactive.)

• A volunteer older adult was paired with an at-risk youth for a tutoring program. The older adult arrived to the tutoring session and began engaging the youth in a discussion about his weekend. After talking for a few minutes, the older adult asked the youth to show her what homework he had to work on. The youth pulled out his homework assignments and explained the directions to the older adult. Together they began working on the assignment with the adult commenting to the youth as he worked through the problems until it was complete.

• The older adults at an IG program joined some preschoolers to work on an art project. The older adults and children were paired with each other in order to work on one art project together. One IG pair was highly interactive. The older adult held the paper steady while the preschooler began painting. The child (target participant) described to the older adult what he was painting. When the preschooler showed signs of frustration, the older adult gently coached the child how to use some of the art materials. The preschooler asked the older adult what colors to use, and the older adult offered a suggestion about what to paint next.

**Watching:** To watch or listen to the activities of others.

• Participants are not directly engaged in the activity, but they are following the movement of others with their eyes.

• Participants are alert to the activity.

• Watching may include the observation of others.

• The target participant may be watching the activity because they choose not to participate or because they cannot participate (e.g., participant is confined to a wheelchair, which prevents active involvement in the planned activity).

• There is no eye contact, or other form of acknowledgment, that would indicate interactive behavior.

• The participant is alert and oriented toward the activity.

• The participant may be part of the group, or they may be watching on the periphery of the activity.
• The target participant may be listening to others engage in conversation, but the target participant is not actively engaged in the conversation.
• While watching the activity, the participant may laugh, or otherwise affectively respond to the activity.

Brief examples of a participant engaged in watching behavior:
• Watching others take their turn
• Watching a child play
• Watching the adults as they begin the activity
• Listening to music being played, but not using an instrument themselves
• Watching and listening to the staff facilitator as she describes the day’s activity

Expanded examples of a participant engaged in watching behavior:
• The IG facilitators planned to engage the participants in story time. The lead facilitator began to read a children’s story to the group of participants. While the story was being read, most participants sat back in the chairs, watched the facilitator as she read, and listened to the story. They did not interact with others, nor did they acknowledge each other.
• While playing a card game, participants had a few minutes of time between each of their turns. An older adult (target participant) took her turn and then waited for her next turn. While she was waiting, the older adult watched the other participants. Occasionally she smiled with the group, but she did not interact with any of the other participants.
• The planned activity for the day was taking a walk outside. The IG partners quickly paired up and began walking. One older adult (target participant) needed the aid of a walker and walked slower than his IG partner. As he walked along, the older adult kept his eyes on his IG partner, who was picking up rocks along the way.
• A volunteer older adult was paired with an at-risk youth for a tutoring program. Once the youth began working on his assignment, the older adult (target participant) sat nearby watching him complete the work. The boy seemed to know what he was doing, so the older adult chose not to interrupt him.
• The older adults at an IG program joined some preschoolers to work on an art project. The older adults and children were paired with each other in order to work on one art project together. One of the children (target participant) seemed timid and reluctant to begin working with her IG partner. While the older adult began working with the paints, the preschooler stood back and watched the older adult paint. Occasionally she glanced at the group as a whole, but she made no attempt to interact with the others.

**Solitary:** To engage in an activity alone, without acknowledgment of or interaction with others.
• The participant is concentrating on his/her own activity.
• The participant does not make eye contact with others.
• The participant may be on the periphery of the group. They may also remain close to others in the group, while continuing to work on their own project.
• The participant does not appear to be listening to, or aware of, the group activity.
• The participant may be engaged in the same activity the others are doing, or they may be engaged in a completely different activity. For example, a participant may choose to pick up a book and read while others are engaged in an art project, or the participant may choose to work on the art project without interacting with or acknowledging the others in the group, thus, it is possible to be present at a group activity and still exhibit solitary behavior.
• The participant may seem oblivious to others.
Brief examples of a participant engaged in solitary behavior:
- Getting up from the table to get something.
- Playing alone with a puppet.
- Playing with his or her own materials.
- Sitting away from the group and reading his or her own story.
- Playing the intended activity of shooting hoops, but focusing only on his or her own participation. The target person does not acknowledge those around him/her, and is only concerned with making their own baskets.
- Not acknowledging a paired partner’s presence, and instead focuses on completing the task individually.

Expanded examples of a participant engaged in solitary behavior:
- The IG facilitators planned to engage the participants in story time. The lead facilitator began reading a children’s story to the group of participants. While the story was being read, the target participant began playing with a toy plane he brought with him. He flew the plane over his head, making quiet plane noises, while the story was being read.
- While playing a card game, participants had a few minutes of time between each of their turns. After taking her turn, an older adult (target participant) noticed her shoe had come untied. She bent over, tied her shoe, and pulled up her socks while waiting for her turn.
- The planned activity for the day was taking a walk outside. The IG partners quickly paired up and began walking. As they were walking, the target participant ran ahead of his partner. The child ran up to a tree and began swinging from a branch and laughing.
- A volunteer older adult was paired with an at-risk youth for a tutoring program. After the youth began working on his homework assignment, the older adult pulled out her book and began to read. Both the older adult and the youth seemed engrossed in their own activity.
- The older adults at an IG program joined some preschoolers to work on an art project. The older adults and children were paired with each other in order to work on one art project together. One pair worked with their own materials on a single piece of paper. Each worked on their own section of the paper, creating their own picture. They did not glance at each other or speak to each other during the activity.

*Unoccupied:* Complete lack of goal or focus; includes repetitive, self-stimulating behavior.
- The participant is not included in the activity or conversation, and he/she is inactive.
- Not aware of others, even if they are sitting at the same table with other participants.
- The participant is unfocused.
- The participant may exhibit repetitive behaviors.
- The participant is disengaged from the activity.
- The participant may be asleep.
- The participant may be staring in another direction away from the activity even if seated at a table with others.
- The participant may engage in scanning where eyes move around without really focusing on anything.

Brief examples of a participant engaged in unoccupied behavior:
- Sitting at a table, staring off into space
- Sleeping while still present at the activity
- Smoothing out wrinkles on pants
- Humming to oneself
- Folding & unfolding a napkin repeatedly
• Tapping fingers (not in response to music, which would reflect engagement)
• Tapping feet/bouncing knees (not in response to music, which would reflect engagement)
• Rocking
• Head banging
• Clicking a pen over and over
• Hand flapping
• Sucking one’s thumb
• Pacing

Expanded examples of a participant engaged in unoccupied behavior:
• The IG facilitators planned to engage the participants in story time. The lead facilitator began reading a children’s story to the group. An older adult (target participant) soon lost interest in the children’s story. He began to scan the room with his eyes without focusing on anything in particular. The observer noticed that he was also smoothing out the wrinkles in his pants repetitively.
• While playing a card game, participants had a few minutes of time between each of their turns. After taking her turn, one of the children (target participant) looked down at the floor, swung her legs repeatedly, and made quiet humming noises to herself.
• The planned activity for the day was taking a walk outside. The IG partners quickly paired up and began walking. One of the older adults with severe dementia (target participant) stopped walking halfway through the walk. She seemed unaware of her surroundings. She was looking in the distance but was not focused on anything. She did not even notice at first when the staff member approached her and took her arm to continue the walk.
• A volunteer older adult was paired with an at-risk youth for a tutoring program. During the tutoring session (target participant) began looking out the window. After a minute or two of doing nothing, his partner gently nudged the youth and reminded him to focus on his assignment.
• The older adults at an IG program joined some preschoolers to work on an art project. The older adults and children were paired with each other in order to work on one art project together. While engaged in the art project, an older adult (target participant) sat back and let the child take the lead. The older adult soon became distracted and began scanning the room with her eyes. After a few minutes of unfocused scanning, the older adult began kneading the clay in front of her without purpose.
APPENDIX E: SAMPLE COMPLETED OBSERVATION FORM

(INTergenerational Observation Scale Protocol | 35)

PART I: INTERGENERATIONAL OBSERVATION FORM

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IG Activity: Picture Puzzles

Facilitators: Adults: 
Primary: Mary 
Secondary (if applicable): Sarah
Children: 
Primary: Rachel 
Secondary (if applicable): Sarah

Primary Desired Behavior Response: (circle one; see manual for additional protocol)
- Interacting
- Turn-Taking
- Active Watching
- Solitary Engagement

Indicate Child/Youth Group: Child Development Center (Preschool)

Indicate Adult Group: Adult Day Services
- Red Adults (High physical/cognitive functioning)

# Older Adult Participants: 3

# Children/Youth: 3

# Other Staff: n/a

Observer Notes:

Environmental description: location, materials, placement of materials (central, paired, or parallel), noise level, other distractions. If the activity was dynamic (for example, if the activity involved one group visiting the other’s location), please describe with text as well as providing a figure below to the extent possible.

- Intergenerational Activity Space
- Minimal Distractions (some noise from other classrooms)
- Materials - paired (large, printed photos; scissors; glue; construction paper)

Physical set up of activity (draw a figure):

Comment on whether activities and materials were age- and ability-appropriate for adult and child participants.
- Age-appropriate activity/materials (adults serve as mentors to help cut pieces/put together/glue on paper)
  - Children not able to use scissors, but adults help

Other Notes:
Please Respond:

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</tr>
<tr>
<td>Materials prepared and ready for activity</td>
<td>✔</td>
</tr>
</tbody>
</table>

Facilitator rapport:

<table>
<thead>
<tr>
<th></th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicated effectively with partner*</td>
<td>OA Fac.</td>
</tr>
<tr>
<td>Encouraged IG participant interaction</td>
<td>1</td>
</tr>
<tr>
<td>Partners shared in facilitation*</td>
<td>2</td>
</tr>
<tr>
<td>Responsive to participants, regardless of age</td>
<td>2</td>
</tr>
<tr>
<td>Demonstrated age-appropriate communication and behavior</td>
<td>2</td>
</tr>
<tr>
<td>Intrusive or over-involved with participant(s)</td>
<td>0</td>
</tr>
<tr>
<td>Brought positive attitude and energy to the session</td>
<td>2</td>
</tr>
<tr>
<td>Effectively moved around activity space</td>
<td>1</td>
</tr>
</tbody>
</table>

0 = not at all true 1 = somewhat true 2 = mostly true

*3 = N/A. For starred items, record 3 if only one facilitator presents the activity.
Name: Jane Smith  Activity: Picture Puzzles  Date (mm/dd/yy): 05/12/09

These observations represent (circle one): Live Coding: Reliability  Live Coding: Data Collection

Record the # of the predominant behavior in the “Predominant” column. Use ✓ in corresponding columns to indicate if a behavioral category or positive/negative affect were observed. Each row represents one 15-second time frame (15 seconds observing and 15 seconds recording before the next time frame) for up to 6 observational time frames per person.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1st person observed</td>
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<tr>
<td>Name: Linda</td>
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<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description: woman, blue sweater</td>
<td></td>
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<tr>
<td>2nd person observed</td>
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<tr>
<td>Name: Emma</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
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</tr>
<tr>
<td>Description: girl, pink skirt</td>
<td></td>
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<td>3rd person observed</td>
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<tr>
<td>Name: Joe</td>
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<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Description: man, glasses</td>
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<tr>
<td>4th person observed</td>
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<tr>
<td>Name: Andrew</td>
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<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Description: boy, overalls</td>
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<tr>
<td>5th person observed</td>
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</table>
## Appendix F: Blank Inter-Rater Agreement Calculation Table

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
<th>Observer</th>
<th>Total Agreement</th>
<th>Inter-rater agreement Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Participant 1</td>
<td>Participant 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Observed code</td>
<td>Correct code</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Activity 1</td>
<td>Activity 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>p1</td>
<td>p1</td>
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<td>p2</td>
<td>p2</td>
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<td>p3</td>
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<td>p4</td>
<td>p4</td>
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<td>p5</td>
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<td>p6</td>
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<td>p7</td>
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<td>p8</td>
<td>p8</td>
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<td></td>
<td>p9</td>
<td>p9</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>p10</td>
<td>p10</td>
</tr>
</tbody>
</table>

For activities that last longer than 30 minutes, please use the table below to include all observations in the calculation of reliability:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
<th>Observer</th>
<th>Total Agreement</th>
<th>Inter-rater agreement Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Participant 1</td>
<td>Participant 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Observed code</td>
<td>Correct code</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Activity 1</td>
<td>Activity 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>p1</td>
<td>p1</td>
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<td>p2</td>
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<td>p7</td>
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<td>p8</td>
<td>p8</td>
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<td>p9</td>
<td>p9</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>p10</td>
<td>p10</td>
</tr>
</tbody>
</table>

Enter in the last cell in row the number of time frames you and your observing partner coded a predominant behavior. Then divide your total agreement value by this number and multiply by 100 to get your inter-rater agreement rate. Agreement of 80% or better is needed to establish reliability at a given step.

ACRAT = Agreement (0 = no, 1 = yes)

Key:
- OBS = Observer's code
- KEY = Correct code
### APPENDIX G: SAMPLE COMPLETED INTER-RATER AGREEMENT CALCULATION TABLE

#### IOS INTER-RATER AGREEMENT CALCULATION TABLE

<table>
<thead>
<tr>
<th>Participant 1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participant 2</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
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<tr>
<td>1</td>
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<td>1</td>
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<td>1</td>
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<td>0</td>
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</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Observer:** Jane Smith  
**Activity:** Video 4 (Magazine)  
**Date:** 09/02/2010

#### Inter-rater Agreement Rate

<table>
<thead>
<tr>
<th>Category</th>
<th>Agreement</th>
<th>Agreement Rate (0 = no, 1 = yes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>Agreement</td>
<td>Agreement Rate (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>Category 2</td>
<td>Agreement</td>
<td>Agreement Rate (0 = no, 1 = yes)</td>
</tr>
</tbody>
</table>

---

*For activities that last longer than 30 minutes, please use the table below to include all observations in the calculation of reliability.*
**APPENDIX H: USER AGREEMENT**

Intergenerational Observation Scale©

**User Agreement**

**RESERVATION OF RIGHTS AND OWNERSHIP.** Use of the Intergenerational Observation Scale (IOS) is authorized not sold, and Shannon Jarrott reserves all rights not expressly granted to you in this User Agreement. IOS materials are available at no charge to individuals wishing to receive copies of the materials (write sjarrott@vt.edu).

The IOS is protected by copyright and other intellectual property laws. Shannon Jarrott and Virginia Polytechnic Institute and State University own the title, copyright, and other worldwide intellectual property rights of the IOS. This User Agreement does not grant you any rights to trademarks or service marks of Jarrott or Virginia Polytechnic Institute and State University.

Receipt of IOS training materials indicates the recipient’s agreement to the following:

- Recipients of IOS training materials will not share the manual, videos, or forms with other persons. Those wishing to receive the IOS training materials can request them from Shannon Jarrott (sjarrott@vt.edu).

- Recipients of IOS training materials agree that they will not show IOS videos or print materials in presentations or publications, send them through e-mail, or post them online without express permission from Shannon Jarrott (sjarrott@vt.edu).

**REGISTRATION.** To become an authorized user of the IOS, you must register and (i) provide accurate, current, and complete information demonstrating completion of the steps below as part of the registration process (the "Registration Data"), and (ii) maintain and promptly update the Registration Data to keep it accurate, current and complete. If you provide any Registration Data that is inaccurate, not current, or incomplete, or Jarrott has reasonable grounds to suspect is inaccurate, not current, or incomplete, Jarrott may, in her sole discretion, suspend or terminate your authorization to use the IOS (or any portion thereof).

Registration to use the IOS is predicated upon completion of the following steps before the user is authorized to use the IOS for data collection. These steps are:

1. Complete training using the IOS training video and reading the IOS manual.
2. Follow the four steps described in the training materials to achieve acceptable inter-rater agreement.
3. Send a signed copy of this User Agreement and copies of each of the inter-rater agreement calculation tables for practice coding sessions completed to reach acceptable inter-rater agreement at each of the four steps. As per the training manual, there should be a minimum of two inter-rater agreement calculation tables for each step. Each inter-rater agreement calculation table must clearly indicate:
   a. Name of the observer(s).
   b. Date practice video or intergenerational activity was coded (mm/dd/yy).
   c. Step in the process of establishing inter-rater agreement: (a) re-watch, (b) stop/no re-watch, (c) no stops, (d) live observation.
Any presentations or publications based on the IOS method must include citations of the IOS training materials and appropriate IOS publications. The citation for the IOS training materials is:


Currently, the appropriate research citation is:


**TERMINATION.** Your rights under this Agreement may be terminated or suspended by Jarrott immediately if you fail to comply with any term or condition of this Agreement. Upon termination you must cease using the IOS. Any termination of this Agreement shall not affect Jarrott’s rights hereunder.

Terms of the User Agreement are subject to change. All persons completing a User Agreement will receive notice of changes in terms.

I agree to the terms described above regarding use of the Intergenerational Observation Scale.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date (mm/dd/yy)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Name (print)</th>
<th>e-mail address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Send materials by PDF to [sjarrott@vt.edu](mailto:sjarrott@vt.edu) or through the mail to:

Shannon E. Jarrott, Ph.D.
Department of Human Development (0416)
Virginia Tech
Blacksburg, VA 24061
APPENDIX I: SAMPLE COMPLETED EXCEL WORKSHEET TO CALCULATE COHEN’S KAPPA

<table>
<thead>
<tr>
<th>Practice</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
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</table>

TOTAL OB: 27
TOTAL SQ: 729
PC: 0.351166
AGREE: 0.6666667
KAPPA: 0.4862579
REFERENCES


