Caregiver-Delivered Home-Based Instruction Using Simultaneous Prompting for Teaching Home Skills to Individuals with Developmental Disabilities

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Abstract: It is very important for individuals with all kinds of developmental disabilities to learn skills in order to be independent at home. The purposes of the study were twofold; (1) to examine the effectiveness of caregiver-delivered home-based instruction using simultaneous prompting to children with moderate developmental disabilities on teaching chained home skills and (2) to find out whether the caregivers would be able to implement simultaneous prompting procedure correctly throughout the study. Moreover, maintenance and generalization of the acquired skills were also evaluated. Participants of the study included four children with moderate mental retardation and their caregivers. After the caregivers were trained to use the simultaneous prompting procedure at the beginning of the study and were expected to teach three different chained-home skills to their children. Results of the study revealed that caregivers were successful in using the simultaneous prompting procedure. The children acquired target skills of the study conducted with multiple exemplars. Results also showed that the children maintained them one and three weeks after the training sessions were completed, and generalized them across trainers. Results of the study were extensively discussed.

Receiving training only at school might not be enough for some individuals with developmental disabilities (DD) in order to carry out their lives independently. For this reason, besides formal school training, some children with DD require additional training approaches at various settings delivered by parents or other professionals. One of these approaches that has been recognized and studied is to use parents or primary caregivers as trainers of their children at home or other settings (Cavkaytar, 2007; Collins, 2007). Once caregivers are trained to act as trainers of their children with DD, they can use the strategies or competencies they were taught during various skill or behavior instructions to their children at home. Since children with moderate to severe disabilities do not have the advantage of observational learning in natural environments, their primary caregivers can be efficient home-trainers for their children.

The importance of parental or primary caregivers’ involvement in the educational programs of their children has been recognized and getting great attention in both policies and practices. It has been reported that the involvement of parents and caregivers into the educational program of their children may result in various positive outcomes for children with DD and their parents. For example, results of the studies indicated that when parental involvement occurred, children easily generalized the acquired skills, the interventions started at school continued successfully at home, and the parents felt more satisfied about being a part of the educational program of their children (Collins, 2007; Spann, Kohler, & Soenksen, 2003).

Regarding using parents or caregivers efficiently on teaching, several studies reported that parents and caregivers were effective on teaching various skills to their children with...
The skills taught in these studies included self-care and domestic skills (Cavkaytar, 2007), community skills (Tekin-Iftar, in press), laundry skills (Morrow & Bates, 1987), language and communication skills (Seung, Ashwell, Elder, & Valcante, 2006; Tait, Sigafos, Woodyatt, O’Reilly, & Lancioni, 2004), snack preparation skills (Wall & Gast, 1997a), restaurant skills (Alvey & Aeschleman, 1990), purchasing skills (DiPipi-Hoy & Jitendra, 2004), and leisure skills (Wall & Gast, 1997b). In the related literature, there is evidence about parents’ success in teaching many skills to their children with DD. However, in order to expand these practices as evidence-based, more studies using parents or caregivers as trainers of their children to teach various skills at home as the most naturalistic setting, are needed. Simultaneous Prompting (SP) is one of the response prompting teaching techniques known to be a user-friendly procedure (Akmanoglu & Batu, 2004; Akmanoglu-Uludag & Batu, 2005; Morse & Schuster, 2004; Tekin-Iftar, 2003; Wolery, Ault, & Doyle, 1992). While using SP, since the controlling prompt is provided right after the target stimuli, the participant does not have the chance to give incorrect responses. For this reason, before each training session, a daily probe session needs to be conducted in order to see the effectiveness of the teaching procedure on the participant. Several advantages of the SP have been reported by teachers and other practitioners such as parents and caregivers. While using SP, the participant (child or student) does not need to be taught a waiting response (which is usually a problem for children with DD). Another advantage is the similarity of sessions during the teaching procedure. At this point, practitioners need to learn only 0 sec. delay teaching procedure. In the SP procedure, type of correct response is only one type for the learner. Therefore, the practitioner does not need to use different types of reinforcement systems (Parrott, Schuster, Collins, & Gassaway, 2000; Tekin & Kircaali-Iftar, 2001).

In several studies, the effectiveness of SP has been reported. For example, it has been found effective on teaching discrete skills such as relative names (Akmanoglu-Uludag & Batu, 2005), pointing to the numerals (Akmanoglu & Batu, 2004), community signs (Tekin-Iftar, 2003), receptive picture identification (Tekin & Kircaali-Iftar, 2002), identifying occupations (Dogan & Tekin-Iftar, 2002), receptive manual sign identification (Palmer, Collins, & Schuster, 1999), reading grocery sight words (Singleton, Schuster, Morse, & Collins, 1999), word identification (Griffen, Schuster, & Morse, 1998), science vocabulary words (Johnson, Schuster, & Bell, 1996), community signs (Singleton, Schuster, & Ault, 1995) and chained skills such as community skills (Tekin-Iftar, in press), academic skills (Riesen, McDonnell, Johnson, Polychronis, & Jameson, 2003), hand washing (Parrott et al., 2000), construction of shipping boxes (Maciag, Schuster, Collins, & Cooper, 2000), vocational task (Fetko, Schuster, Harley, & Collins, 1999), dressing (Sewell, Collins, Hemmeter, & Schuster, 1998), and making juice (Schuster & Griffen, 1993). Results of the above studies revealed that SP was effective in teaching chained skills to individuals with DD. Literature on SP shows that studies conducted on teaching chained skills by using SP are limited. Most of the studies conducted were with teachers by using SP. There are limited studies carried out by others rather than teachers using SP to teach various skills. For example, Tekin and Kircaali-Iftar (2002) studied the SP delivered by siblings, Tekin-Iftar, (2003) used peers to carry out the SP procedure and in Tekin-Iftar (2008), the SP procedure was delivered by the parents of participants. In order to promote the evidences of these practices, more studies are need to be conducted by the SP delivered by people other than the teachers of the students with DD.

In order to be real partners in the community, individuals with DD need to learn different kinds of skills. Self-care skills, community-based skills, daily living skills, home skills, prevocational skills, and vocational skills are vital skills to be learned during the life span for individuals with DD to act as a part of the community (Cavkaytar, 2007; Smith, Patton, & Ittenbach, 1994). Among these skills, daily living and home skills are basic skills for individuals to be independent at home (Westling, 1996), while the other skills are the ones to be independent in the community. Home skills are considered as age-appropriate functional skills for individuals with moderate DD (Browder & Bambara, 2000; Collins, 2007). In order to be independent at home, it is critical for individuals with moderate DD to learn and...
practice home skills efficiently. In Turkey, when teaching students with moderate DD is considered, there is a general national curriculum in state schools to teach these students. However, teaching home skills is not part of this curriculum. Therefore, alternative solutions are needed to fill this gap, and studies regarding teaching home skills to children with DD are needed in order to find out the effectiveness of caregiver provided SP on teaching home skills to their children with DD. Based on the needs mentioned both in related literature and practice in Turkey, the present study was designed to examine effectiveness of caregiver-delivered home-based instruction using SP for teaching chained home skills to individuals with DD. Related to this general purpose, the following research questions were addressed: (1) Is caregiver provided SP effective on teaching home skills to target children with DD?, (2) Are target children going to maintain acquired skills one and three weeks after the training sessions are completed?, (3) Are target children going to generalize the acquired skills across trainers?, (4) Are target caregivers going to be able to use the SP procedure reliably during the study?, and (5) What do target caregivers think about the caregiver-delivered home-based instruction using SP to teach home skills?

Method

Participants

Participants were four children with DD and their caregivers. Three children were male and their caregivers were their mothers, and one of the children was female and her caregiver was her grandmother. Ages of the children ranged between 6-9 years and the caregivers’ ages ranged between 30-50 years. All the caregivers were housewives and all of them have finished primary school. All of the children functioned within the moderate range of mental retardation (full scale IQ = 40-51) and were attending regular schools (Mehmet and Ali were attending the first grades of different primary schools, Hasan was attending to a pre-school and Ceyda was attending a self-contained class of a regular school).

In order to participate, the caregivers were asked to volunteer. They were also asked if they would like to teach home skills to their children after they were taught to use a specific teaching method. The following prerequisite skills were considered for target children: (a) to keep attention on an activity for at least 5-10 minutes (during the pilot study, it was determined that sessions would last a maximum of 10 minutes), (b) to follow successfully simple verbal instructions (i.e., take the spoon, put some yogurt into the spoon, etc.), and (c) to be willing to learn the selected skills from his/her caregiver.

All of the target children were able to perform some basic self-help skills such as toileting, dressing and undressing. They all had limited verbal communication (e.g., when they tried to request something from the people around them, people usually had difficulties understanding the words correctly). They were all provided with special education from a university center for the children with DD in a group for three years, and are currently having I-I lessons twice a week from a private special education school or from the university unit.

Settings

While the first caregiver training session was conducted in the author’s office, most of the sessions were carried out in the houses of participants. Sessions took place in places relevant to teaching a particular target skill (e.g., teaching wearing socks was conducted in the bedroom, setting the table was conducted in the kitchen or living room, making the bed was conducted in the bedroom, etc.).

Some of the sessions were conducted in the unit for children with DD in the Research Institute for the Handicapped at Anadolu University. In order to conduct the study in a multiple exemplar format, sessions were conducted in related settings in the university unit (e.g., setting the table was conducted in the kitchen, making the bed was conducted in the physiotherapy room where there was a bed for the patients, etc.). In all settings, the author, target caregiver and target child were together except the first caregiver training session.

Materials

Materials were selected among the daily materials in the houses of participants. For each target skill, different materials were needed.
and used: (a) For setting the table: Two sets of plates, spoons, forks, glasses, and a pitcher were used. (b) For preparing yogurt drink: two glasses, two spoons, one pitcher, some salt, and a cup of yogurt were used. (c) For preparing sandwich: four slices of bread, two slices of cheese, and two slices of salami were used. (d) For hanging trousers: Two trousers and two hangers were used. (e) For hanging shirts: Two shirts and two hangers were used. (f) For wearing socks: Two pairs of socks were used. (g) For folding sweatshirt: Two sweatshirts were used. (h) For making bed: Sheet, pillow, and a quilt were used. (i) For tying shoe laces, a pair of shoes and laces was used.

Caregivers were told to provide different materials for every session in order to conduct the study in a multiple exemplar format. In the university unit, materials being regularly used in the unit were used in the study.

The author brought tangible reinforcers (e.g., M&Ms, candies, juices, biscuits, etc.) for every session to the houses and also to the center. Data collection forms were used for data collection. The author videotaped sessions by using a handy cam camera.

**Task Analyses**

For each skill, task analyses were developed by the author. In the first caregiver training session, after training the caregivers, each caregiver was asked to select the target skills to be taught to their children. Through the home skills checklist prepared by the author, caregivers selected three skills their children could not manage at home independently. After determining target skills for each child, task analyses of those skills were given to caregivers to read and give feedback about the manageability of the tasks through the analyses. After discussing with caregivers, some of the analyses were modified depending on the conditions of the participants’ houses and the materials used in the natural environments. Out of eight target skills, two of the task analyses are presented as examples in Table 1.

**Dependent Measures**

Two kinds of dependent measures were examined. The first was the caregivers’ implementation of SP and the other was the acquisition of target skills by target children. Caregivers’ implementation of home-based instruction with SP was examined for treatment integrity purposes. Children’s acquisition of the target skills were also examined through the steps acquired correctly in the task analyses of each skill during probe sessions.

**Procedure**

Experimental procedure consisted of parent training sessions, and full probe, daily probe, training, maintenance, and generalization sessions. All sessions were conducted by caregivers either at their homes or in the university center for children with DD. Two daily probe sessions and two training sessions were conducted in every visit.

**Parent training sessions.** Caregivers were trained through a training procedure by Tekin-Iftar (2003, 2008) and found to be effective on teaching the intervention to the parents and siblings. In caregiver training sessions, caregivers were trained through a verbal description, role modeling, guided practice, and performance feedback sequence in a 1-1 teaching format. Caregiver training sessions took an average of 40 minutes with each caregiver. During training sessions, caregivers were first informed about the instructional concepts (e.g., controlling prompt, response interval, reinforcement, etc.) without using any technical terms. Then, the author role-played and modeled SP by using both positive and negative examples. Each caregiver was asked about the negative examples in the modeling and what the author should have done instead. After that, caregivers were asked to be the teachers and the author would be their student. During this step, the author provided feedback to the caregivers until they performed the SP procedure with 100% accuracy.

**Full probe sessions.** Full probe sessions were conducted before all the skills were taught as a determination of performance level of the target children. Also full probe sessions were conducted after the criterion was met by children during training sessions for each target skill. During all full probe sessions, three target skills were asked to be performed by target children. Each target skill was asked three times. After children met criterion with the
first target skill, the second full probe session was conducted. Similarly, after meeting criterion with the second target skill, third full probe session was conducted, and lastly, after meeting criterion with the third target skill, last full probe session was conducted. The same procedure was followed by all children.

Full probe sessions were conducted as follows: (a) the materials (e.g., shirts and hangers, jellies, biscuits) were placed in the room where target skills were to be taught, (b) caregiver and the child were asked to take their places in the room, (c) an attentional que (i.e., “Mehmet, are you ready?”) was provided by the caregiver to the participant, and a task direction (i.e., “Mehmet, wear your socks”) was given by the caregiver, (d) a 4 s waiting interval was provided for the participant child’s response, (e) correct responses were rewarded verbally, and incorrect responses were ignored by the caregiver. The next trial was conducted 5 min after the previous one was completed.

Correct responses of participants were rewarded verbally by caregivers during full probe sessions (i.e. well done, yes, that’s right, etc.). Responses were considered as correct when the target child performed successfully the steps of the target skill while responses were considered

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<td>Task analyses</td>
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Making Yogurt Drink

1. Takes the spoon with right hand  
2. Puts the spoon into the yogurt cup  
3. Puts some yogurt into the spoon  
4. Takes the spoon out of the yogurt cup  
5. Puts the yogurt into the glass  
6. Mixes the yogurt by turning the spoon in the glass  
7. Leaves the spoon in the glass  
8. Takes the pitcher with right hand  
9. Puts some water into the glass  
10. Leaves the pitcher onto the table  
11. Takes the spoon with right hand  
12. Mixes the water with yogurt by turning the spoon in the glass  
13. Takes salt by left hand  
14. Puts some salt into the glass  
15. Mixes all the ingredients by turning the spoon in the glass  
16. Takes the spoon out of the glass  
17. Puts the spoon on the table  

Setting Table

1. Takes the plates from the counter with both hands  
2. Puts the plates onto the table  
3. Goes back to the counter  
4. Takes spoons and forks from the counter  
5. Puts the spoons and forks on the table  
6. Takes the spoons with right hand  
7. Puts the spoons to the right sides of the plates  
8. Takes the forks with right hand  
9. Puts the forks to the left sides of the plates  
10. Goes to the counter  
11. Takes one glass to each hand  
12. Puts the glasses on the right sides of the plates above the spoons  
13. Goes back to the counter  
14. Takes the pitcher with both hands  
15. Takes the pitcher to the table  
16. Puts the pitcher on the table
incorrect when target child was doing other things rather than performing steps of the target skill, performing the steps after the 4 s interval, or doing anything at all in 4 s. For encouraging target children to cooperate and attend the full probe sessions, children were praised verbally by their caregivers, and were provided tangible reinforcers by the author at the end of the full probe sessions.

Daily probe sessions. According to the SP teaching procedure, the participant receives an immediate controlling prompt which does not allow him/her to respond independently to task directions. Therefore, daily probe sessions were conducted before each training session in order to give participants the chance to respond independently. During all daily probe sessions each target skill was asked once.

The only difference between full probe sessions and daily probe sessions was that, during full probe sessions all target skills were asked, during daily probe sessions, only the target skill being taught was asked. As during full probe sessions, correct responses were rewarded with verbal praise, whereas all incorrect responses were ignored by the caregiver. Also, attention and cooperation of participants were reinforced at the end of each daily probe session.

SP training sessions. Home-based instruction with SP was used to teach different skills to children with DD by their caregivers. During training sessions, the caregiver provided the task direction and controlling prompt simultaneously (0 s). During training sessions, caregivers were asked to perform target skills twice. Response intervals were 4 s for all the steps of the target skills, and inter-trial intervals were 5 min during training sessions. Controlling prompts used during training sessions were modeling plus verbal prompting. Training sessions were continued until three consecutive 90-100% correct responses were given during daily probe sessions.

Training sessions were conducted as follows: (a) materials related with the target skill (e.g., two sets of plates, forks, spoons, glasses, and a pitcher) were prepared and placed in the instructional environment (e.g., kitchen table), (b) introduction took place (i.e., “Now we are going to learn how to set our table for lunch. First I am going to do the step and you will listen and watch me. Then, I am going to ask you to do the same steps and you will do the same.”), (c) an attentional cue was provided to the participant (i.e., “Ali, are you ready to work?”), (d) Task direction was given (i.e., “Ali, put the plates on the table.”), (e) verbal and modeling prompts were delivered (i.e., “Ali, look, I put my plates on the table. Now you do the same.”), (f) participant’s response interval of 4 s was waited, (g) correct responses (e.g., if Ali put the plates on the table) resulted with verbal praise (i.e., “well done”, “correct”, etc.), and incorrect responses (were defined the same as in probe sessions) or no responses within 4 s resulted with error correction (e.g., the caregiver told “you should put the plates on the table” and did the step for target child in order to keep the skill continue), (h) the procedure was repeated until the performance of last step of the target skill, and (i) 4 min waiting interval was conducted before the next trial. At the end of each training session, participants were provided verbal praise by their caregivers and tangible reinforcers by the author for their attention and cooperation.

Maintenance and generalization probe sessions. Maintenance sessions were conducted one and three weeks after the last full probe session was conducted with each participant. Maintenance sessions were conducted the same as full probe sessions in the houses of participants. Each target skill was asked once to target children by caregivers. As in the other probe sessions, participants were praised orally by their caregivers and were reinforced with tangible reinforcers at the end of the sessions by the author.

Generalization data were collected across trainers. Pre- and post-test sessions were conducted in order to evaluate the generalization of the acquired skills. Before the pre-test sessions, each trainer was given information about the SP procedure and what they were expected to do during the generalization sessions. Also before the post-test generalization sessions, trainers were reminded about the information provided before the pre-test sessions. During these sessions, instead of target caregivers, different people with whom target children interact most frequently during their daily lives were the trainers (e.g., for Mehmet, his aunt; for Hasan, his aunt; for Ali his teacher who was coming home three times a week; and for Ceyda, her aunt). Pre-test generalization sessions were conducted before training sessions started and post-test general-
ization sessions were conducted after training sessions were completed. Generalization sessions were conducted the same as probe sessions. Correct responses of participants were praised orally and incorrect responses were ignored by the generalization trainer.

**Experimental Design**

A multiple probe design across behaviors was used and was replicated across four participants in order to examine effectiveness of caregiver-delivered home-based instruction using SP on teaching three different skills to children with DD. The dependent measure was the percent of correctly performing steps of the target skills. The independent variable was caregiver-delivered home-based instruction using SP procedure.

**Reliability**

Two kinds of reliability data were collected: inter-observer reliability for dependent measures and treatment (procedural) reliability for independent variable. Reliability data were collected by an independent observer. Out of all sessions, 20 % of all sessions of training, probe, and maintenance were selected randomly to collect the reliability data. Inter-observer reliability was calculated by number of agreements divided by number of agreements plus disagreements multiplied by 100 (Tawney & Gast, 1984; Tekin & Kircali-Iftar, 2001). Treatment reliability was calculated by dividing number of caregiver behaviors observed by number of caregiver behaviors planned multiplied by 100 (Tekin & Kircali-Iftar, 2001). Caregiver behaviors observed were as follows: (1) controlling materials, (2) securing attention, (3) delivering task direction, (4) delivering controlling prompt (for only training sessions), (5) waiting for the 4 s response interval, (6) giving appropriate responses for the participants’ responses (error correction was conducted during training), and (7) waiting for inter-trial interval.

**Social Validation**

Social validity data were gathered via semi-structured interviews conducted by the author with target caregivers. Interviews were conducted in houses of participants during the pre-determined appointment times. Eight questions were asked during the interviews. These were: (a) Do you think that it is important for you to learn how to use SP for teaching different skills to your child?, (b) Do you think that it is easy to learn and use SP for teaching different skills to your child?, (c) Do you think the skills you taught to your child are important for him/her? If yes, in what ways?, (d) What are the important parts of the study we’ve conducted with your child?, (e) Are there any parts of the study that you did not like? If yes, please indicate, (f) Are there any differences in your child after the study was completed? If yes, please indicate, (g) Did you enjoy acting like a teacher of your child?, and (h) Do you think there are any problems about the participation of your child in a study similar to the study we’ve conducted? Can you tell the reason for your answer in a few sentences? Answers of caregivers were taken as notes by the author simultaneously.

**Results**

**Effectiveness of Acquisition and Maintenance**

As shown in Figures 1-4 and Table 2, caregiver delivered home-based instruction with SP was effective on teaching home skills to children with DD and also on maintenance of acquired skills for three weeks time. Two procedural modifications were needed during the study. Those were Hasan’s and Ceyda’s controlling prompts during learning to wear socks and tie shoe laces. The controlling prompts were modified as modeling plus verbal prompt with partial physical prompt for gathering the socks in his hands with moving his fingers for Hasan. For Ali, for putting one of the laces into the hole in order to make the tying, the prompt was modified as modeling plus verbal prompt with partial physical prompt as well. The Figures show that presentation of SP delivered by caregivers resulted in the criterion level performances for each target skill by target children.

**Maintenance**

Maintenance data show that all target children maintained target skills one and three weeks after they met the criterion. Figures 1-4
show that target children maintained the skills acquired during training sessions. Mehmet maintained skills taught 100%, Ali maintained skills taught 100%, Hasan maintained skills taught 94.5% (range = 89-100) and Ceyda maintained skills taught 93.5% (range = 87-100) during maintenance sessions.

**Effectiveness on Generalization**

Generalization across trainers data were collected with different people with whom the children interacted most frequently during their daily lives. During pre-test all target children performed target skills with 0% accuracy except
Ali’s 33% accuracy in setting table, and Ceyda’s 25% accuracy in preparing yogurt drink. During post-test, all target children performed target skills with 100% accuracy except Hasan’s 89% accuracy in wearing socks, and Ceyda’s 87% accuracy in tying her shoe laces.
Reliability Data
Dependent variable reliability (inter-observer reliability) data indicated 100% agreement during full probe, training and maintenance and generalization sessions for Mehmet. For Ali there was an agreement of 100% during the full probe, training and maintenance and generalization sessions. For Hasan, there was an agreement of 87% (80-100%) during the full probe, training and maintenance and gen-

Figure 3. Percentage of correct responses for Hasan during baseline, intervention, maintenance and generalization sessions.
eralization sessions. For Ceyda there was an agreement of 90% (87-100%) during the full probe, training and maintenance and generalization sessions.

Results of independent variable reliability (treatment reliability) revealed that caregivers implemented the planned steps successfully during the full probe, daily probe, training...
and maintenance sessions. Nermin implemented the planned steps with 100% accuracy for Mehmet, Fatma implemented the planned steps with 100% accuracy for Ali, Seda implemented the planned steps with 93% accuracy for Hasan, and Ayten implemented the planned steps with 87% accuracy for Ceyda.

**Social Validation**

Social validity data were collected through an eight item questionnaire. Views of caregivers were very positive in general. They all thought that it was important for them to learn and use the SP procedure for teaching different skills to their children with DD and pointed out the ease of the procedure. They all agreed that target skills which they taught to their children were important. One of the caregivers (Ayten) mentioned that she had never imagined her grand daughter would tie her shoe laces independently; therefore, she was very grateful about that. Two of the caregivers indicated that learning SP was the most important part of the study because they would be able to use this procedure for teaching any skills that their children would need in the future. Target caregivers mentioned any part of the study that they did not like. Although target caregivers pointed out the difficulty in being teachers of their own children, they all stated the enjoyment of acting as their children’s teachers. Lastly, they all indicated that they would be very happy with involvement of their children in similar studies in the future.

**Discussion**

Looking at the results presented in Figures 1-4, it can be said that SP provided by the caregivers was effective in teaching chained home skills to children with DD. Results also
revealed that target children maintained target skills one and three weeks after the interventions, and they could generalize acquired skills across trainers. These results were consistent with results of the studies that examined effectiveness of SP in teaching chained skills to individuals with DD (Fetko et al., 1999; Maciag et al., 2000; Parrott et al., 2000; Riesen et al., 2003; Schuster & Griffen, 1993; Sewell et al., 1998; Tekin-Iftar, 2008). The studies mentioned above provide evidence about the effectiveness of SP on maintenance of the acquired skills in more controlled educational settings. In this point, this study expands the evidence by showing that it is also effective on maintenance when the instruction was provided in home settings which is a less controlled educational setting.

Results of the study also showed that caregivers were successful in using SP while teaching three different chained home skills to their children with DD. This result was consistent with results of studies that explored the success of implementers other than teachers who delivered SP to their children with DD (Tekin-Iftar, 2008; Tekin-Iftar, 2003; Tekin &Kircaali-Iftar, 2002). Although there were studies showing the effectiveness of SP provided by people other than teachers, this is the only study which combined the SP procedure and home skills at home; therefore, this study will extend the current literature in this way.

During the implementations, two major procedural modifications were conducted. These were the modifications of the controlling prompts for Hasan (wearing socks) and Ceyda (tying shoe laces). For teaching other target skills, the controlling prompt was determined as modeling plus verbal prompting. These two skills were the only left skills that children participants did not have in their repertoire from the home skills check list and they were really hard skills regarding their age and developmental performances. Therefore the controlling prompt was modified as modeling, verbal plus partial physical prompting. For Hasan the criteria was determined as 80% correct responses for wearing socks, whereas for Ceyda it was 100% just as the other target skills for all the children participants.

Another point to be mentioned about the study is that caregivers were asked not to provide the same materials for training and probe sessions. In any of the two consecutive sessions, the same materials were provided to target children. The various materials in some of the skills were used. For example, for wearing socks, green, wool, yellow, multi-colored, acrylic, etc. were used; for folding sweatshirt, different colored and patterned sweatshirts were used; for preparing sandwich, cheese, salami, tomatoes, black olives, and lettuce were used. However, for some skills such as making bed (e.g., different sheets and pillows with one blanket and one quilt), setting table (e.g., porcelain plates with different patterns, melamine plates with different patterns, glasses with different sizes and shapes), material variety consisted less materials depending on the material presented at homes of the participants. By considering this, generalization during training and probe sessions was aimed. Since target children would do the skills with different materials during all the probe and training sessions, the procedure would be similar to the real life, and by so generalization of the acquired skills would be realized during the implementation. As can be seen in Figures 1-4, all target children acquired the skills with success. Therefore, only generalization across trainers part was conducted formally during the study. Also in the generalization across trainers sessions, the participant children performed with 100% accuracy except Hasan’s 89% accuracy in wearing socks, and Ceyda’s 87% accuracy in tying her shoe laces.

Regarding the social validity findings of the present study, it can be said that all answers that caregivers provided were positive. They thought that the procedure was easy to implement, target skills were important for their children, it was difficult to act as a teacher of their own children but very enjoyable as well and they were happy about taking part in the study. These findings were also consistent with the results of many studies conducted so far (Akmanoglu & Batu, 2004; Akmanoglu-Uludag & Batu, 2005; Morse & Schuster, 2004; Tekin-Iftar, 2003; Wolery, Ault, & Doyle, 1992).

An important part of the study to be discussed is the length of the training sessions. Since the implementers were caregivers, the very close relationship between the caregivers and their children might have caused the
length of training sessions. As a result, target children sometimes had difficulties in seeing their caregivers as authority figures at home.

The present study should be considered under some limitations that may affect the results. First, single opportunity method was used during the baseline probe sessions. This might be a disadvantage for target children, because their performance for all steps of the task analysis could not be determined. Therefore, use of multiple opportunity method could be suggested especially for practical purposes in order to see the actual performance of participants throughout the whole task analysis of target skills.

Another limitation was that the types of errors that occurred were not examined. Therefore, an error correction procedure was not conducted during this study. Even with the limitations noted, the experimental design of the study allows attribution of effect of the independent variable.

Some suggestions to be presented can be as follows: First, it can be suggested to evaluate effectiveness of SP delivered by people other than teachers of children with DD in future studies. Second, effectiveness and efficiency of SP and other response prompting procedures can be compared when provided by people other than the teachers of children with DD. Third, error types can be examined and error correction can be conducted in similar studies. Fourth, a formal multiple exemplar implementations can be conducted in future studies.

In conclusion it can be said that SP provided by caregivers seems to be a user friendly method to be used for teaching chained home skills. Results of the present study reveal similarities with results of many other studies conducted so far.

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Received: 23 January 2008
Initial Acceptance: 29 March 2008
Final Acceptance: 13 May 2008