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Effect of most-to-least prompting procedure on dressing skill of students with Autism

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Dressing skill is one of the necessary self-care skills that is taught to individuals with autism in order for them to be able to live independently. Typically, developing individuals can acquire dressing skill on their own; however, children with autism have difficulties in learning such skill without systematic teaching. Thus, teaching dressing skill should be one of the basic aims of educational service. To this end, this study investigated the effect of most-to-least prompting procedure on dressing skill of students with austism. Three students with autism aged 8, 10 and 11participated in the study. Multiple probe design across subjects was used to assess the effects of most-to-least prompting on teaching the target dressing skill. The dependent variable of the research is the level of dressing coat with zip and the independent variable is the individual teaching program based on most-to-least- prompting method. First, in order to determine the target skill, skill check lists were prepared. Taking the chosen target skill into consideration, individual teaching programs were prepared. Measurement tool was prepared so that the beginning, teaching, observation and generalization of the data can be collected and related to chosen target skill of the students. During the instruction, full physical prompting, partial physical prompting, verbal prompting and independent performance techniques were used. The results of the study revealed that most-to-least prompting was effective on teaching dressing skill of students with autism and also generalized the skill for different places and people.

Key words: Students with autism, dressing skills, most-to-least prompting.

INTRODUCTION

Autism is defined as a common developmental disorder that begins at early ages and lasts for a lifetime, characterized by retardation or deviation in social relationships, communication and cognitive development. It is observed that children defined as "autistic" generally have difficulty in making contact with others and particularly, their peers have certain obsessions, speak in an unusual way or not speak at all and have difficulty in daily life activities (Kırcaali-İftar, 2012). Social hardship is one of the basic characteristics of children with autism and criteria for autism. The hard ship is grouped as deficiencies in non-verbal skill such as eye contact and

facial expression, failure to make contact with peers, not sharing their interests, desires and success with others and lack of social and emotional reciprocity. Therefore, assessment of social and adaptive behaviors is necessary in scanning, diagnosing autistic children and designing intervention programs for these children (Sucuoglu, 2012). Adaptive behaviors are defines as conceptual, social and practical skills required for fulfillment of daily functions (www.aaidd.org, 2008). Deficiencies in adaptive behaviors have negative impact on both daily life and reactions to environment and special occasions. Adaptive behaviors may also be defined as social responsibility and individual independence standards expected from people of the same age and culture group. Adaptive skills are named by various resources as independent life skills or daily life skills (Bozkurt, 2001; Cavkaytar, 1998; Özen, 1995). Independent life skills are the ones that an individual needs in order to live without independence on others (Bozkurt, 2001; Cavkaytar, 1999).

As individuals gain self-care skills which are one of the independent life skills, their dependency on parents and other people begins to disappear. Training individuals with autism on self-care skills is of primary importance as a) they are vital, b) frequently used in daily routine, c) help develop acceptance and positive attitude and d) enhance life quality and help take own life's responsibility (Tekin-İftar, 2002). Dressing skill is among self-care skills required for both autistic and other individuals to function independently. Dressing skill of children with autism children is important for their social recognition, selection skill and enhancement of life quality. While normal developing children learn dressing skills by observing parents, siblings and friends and taking them as models without any educational program, autistic children have difficulty in learning these skills without receiving help or being taught (cited by: Yücesoy, 2007). Interviews with families indicate that teaching their children dressing skills is of primary importance to them (Farlow and Snell, 2003). Therefore, teaching autistic individuals dressing skills is one of the basic objectives of educational programs. Dressing skill includes wearing/putting on and removing underwear, jumper, trousers, skirt, sock, shoe, coat, gloves and hat. It also include additional skills such as buttoning and unbuttoning, unsnapping, zipping, wearing belt, tying scarf, unlacing, choosing appropriate clothes, assess appearance and to be precise when necessary (Yücesoy, 2007). Dressing skill must be taught through daily activities to the possible extent. The best time to teach dressing skill is when children get up, go to toilet, have bath, go to school, play in the park, garden among others. Dressing skill must be ordered from the least to the most complicated one (Vuran, 2011). Like normal developing children, undressing skills are easier than dressing skills for children with autism. They are also relatively easier than unbuttoning, unlacing and zipping. Therefore, undressing skills must be taught before dressing skills (Azrin, Schaeffer ve Wesolowski, 1976; Varol, 2011).

Dressing skill teaching must begin with clothes that are easy to put on and take off. Clothes must be one size bigger and flexible. Teaching must begin with heelless, pipe-shaped socks, V-collar jumpers, stretch pants and unlaced shoes. Clothes with bigger buttons, holes and zippers may be used for buttoning-unbuttoning, zipping-unzipping skills that require development of fine muscle skills (cited by: Vuran 2011). There have been studies in recent years in order to teach autistic children dressing skills effectively. It is observed that these studies give place to educational programs based on "Applied Behavior Analysis" and that this program is often based on principles of operant conditioning. In this model, the first step is detecting the child's current performance and which dressing skills are missing and then these steps are divided into small steps where they are placed into appropriate educational programs and the child's positive reactions are reinforced (Darıca, Abidoğlu and Gümüşçü, 2005). One of the systematic teaching practices used in autistic child training is "Errorless Learning Methods" based on "Applied Behavior Analysis" (Kayaoğlu and Görür, 2008). Errorless learning is programming tools and materials related to the stimuli or target behavior (Cipani and Madigan, 1986). During Errorless learning, the student is more likely to give direct reaction through prompting, gains more reinforcement for the right reactions, which results in an education with fewer mistakes. Thus, a positive relationship develops between the student and practitioner (Weeks and Gaylard-Ross (1981) cited by Eren et al. (2013). Errorless Learning Methods are generally gathered under two groups. These are teaching methods that present reaction prompts and teaching methods that present stimuli prompts. Teaching through the most to least prompting is an effective method for teaching individuals with autism, developmental retardation or mental handicaps of various levels (Tekin-İftar and Kırcaali-İftar, 2012).

Most to least prompting is defined as beginning education with prompting that enables the individual to give right reactions and gradually decreasing and removing the prompting. Prompts are presented in a hierarchical order from the prompt that requires most control over the person's body/behavior to the one that requires least control and teaching continues with the next prompt after the person fulfills the target criteria. When it comes to the criteria for transition from one prompt to another, it is observed that a less controlling prompt is introduced when the person gives right reactions at a certain level or teaching is done at a prompt level for a certain amount of time (Tekin-İftar and Kırcaali-İftar, 2012). Withdrawal of prompting happens in three ways; by (a) only changing the genre of prompting, (b) only changing the amount of prompting or (c)

withdrawing both. The purpose is to enable student independence by withdrawing the genre, amount or both (Tekin-İftar and Kırcaali-İftar, 2012; Varol, 2011). Withdrawal of prompting is not based on spontaneous decisions but happens in a systematic way (Tekin-İftar and Kırcaali-İftar, 2012). Most studies employ the most to least prompting method. Vuran (1989) studied whether "Dressing Skills Teaching Material" designed for fifteen mentally disabled children who fail to realize independent dressing skills was effective in training them on wearing trousers, v-collared jumper and socks. Pretest-end test trial method was used in the study. Measurement tools designed by the author were applied on the sample before and after the practice. Dressing skills teaching materials were designed by the author. According to study findings, teaching through materials that are based on children's capabilities is effective in acquiring self-care skills. Özen (1995) investigated whether "Individualized eating skills, teaching material based on physical aid, modeling and verbal Instruction" was effective in realizing sub-goals of spoon-fork using skills by six mentally disabled children who displayed eating skills prerequisite behaviors. Therefore, the author developed "Individualized eating skills, teaching material based on physical aid, modeling and verbal Instruction" and "Individualized eating skills teaching material based on only verbal Instruction" and formed teaching units involving spoon and fork using skills. At the end of the study, it was found that "Individualized eating skills, teaching material based on physical aid, modeling and verbal Instruction" was more effective than "Individualized eating skills teaching material based on only verbal Instruction" in different students and teaching different eating skills.

Özen et al. (2003) investigated the effectiveness of most to least prompting method in teaching self-care skills to three mentally disabled children. At the implementation process of the study, most to least prompting method was presented through complete physical prompting, partial physical prompting, verbal prompting and independent performance. At the end of the study, it was found that skills were realized according to the target criteria except for tooth-brushing skill of a child. Aykut and Varol (2007), investigated the effectiveness of most to least prompting method in teaching a mentally handicapped child to wear stretch pants, cut an empty paper with scissors and water paint an empty sheet. The study carried out with inter-behavioral multi probe design showed that sub-goals of these skills were realized between 80 and 100% and children could generalize these skills to different settings, instruments and people. Aykut (2007) investigated the effectiveness and efficiency of systematic withdrawal of prompting and constant time delay procedure in teaching how to make stitch on folded cloth and cook ready-made soup. Study findings showed that constant time delay

procedure was more efficient than systematic withdrawal of prompting in terms of the number of educational processes and total amount of teaching time until the criteria is met while systematic withdrawal of prompting was more efficient than constant time delay procedure in terms of the number of false reactions until the criteria is met. Aykut and Varol (2010) investigated whether there was any difference between constant time delay procedure and systematic withdrawal of prompting and which was more effective in teaching daily life skills to children exposed to mental deficiency. Study pattern was adaptive alternate practice model. Study findings showed that there was no difference between the effectiveness of these two procedures in teaching skills; however, constant time delay procedure was more efficient in terms of the number of educational processes and total amount of teaching time until the criteria is met while systematic withdrawal of prompting was more efficient than constant time delay procedure in terms of the number of false reactions until the criteria is met. There was no difference between two procedures in terms of sustainability and generalization.

Aykut (2012) investigated whether there was any difference between effectiveness of constant time delay procedure and systematic withdrawal of prompting and also, which was more efficient in teaching daily life skills to two children with mental disability. Study pattern was adaptive alternate practice model. Study findings showed that there was no difference between the effectiveness of these two procedures in teaching skills; however, systematic withdrawal of prompting was more efficient than constant time delay procedure in terms of the number of educational processes, number of false reactions and total amount of teaching time. No difference was observed between two procedures in terms of sustainability and generalization. Eren et al. (2013) investigated the effectiveness of embedding teaching with most to least method in music activities designed according to Orff approach in teaching concepts to 3 autistic children between the ages of 3 and 6. Inter-sample multi probe model was used for the study. Study findings showed that embedding teaching with most to least teaching method in music activities prepared according to Orff approach was effective in teaching concepts to autistic children. Day and Horner (1986) compared single sample and multi sample teaching methods in teaching dressing skills to 6 boys aged 8 to 23 and with advanced level of mental deficiency. Most to least prompting was used and correct reactions were reinforced. While none of the boys were able to develop jumper wearing skill before teaching, 4 of the 6 boys were able to learn how to wear at least one type of jumper at the end of teaching sessions with single sample and all the boys were able to learn how to wear 7 or 8 types of jumper at the end of teaching with multi sample (cited by: Yücesoy, 2007). Sisson and Dixon

(1986) investigated the effects of physical aid, modeling, verbal prompting and social reinforcements in teaching and sustaining eating skills (chewing with closed mouth, using spoon-fork properly and using handkerchief) to six seriously disabled individuals. Inter-behavioral multi initiation level pattern was used. Study findings showed that the teaching method was effective in using the specified skills. Mc Donnell Ferguson (1989) compared the effectiveness and efficiency of systematic withdrawal of prompting and constant time delay procedure in teaching how to use ATM and cash a check. Although, the study results showed that both methods were effective, systematic withdrawal of prompting was more efficient than constant time delay procedure in terms of the number of teaching sessions, percentage of mistakes and total amount of teaching time.

Miller and Test (1989) compared the effectiveness and efficiency of systematic withdrawal of prompting and constant time delay procedure in teaching cloth washing. Although, the study results showed that both methods were effective, constant time delay procedure was more effective than systematic withdrawal of prompting in terms of percentage of mistakes by the sample and fewer teaching sessions. Denny et al.(2000) investigated the effectiveness of a parent-supported program in teaching a mentally disabled child to eat and roll a ball and sustaining these skills. Inter-behavioral multi initiation level pattern was the study design.

In the study, goals for both skills were designed according to whole skill approach and the method involved systematic withdrawal of physical prompting. The study findings showed that the participant acquired and sustained (cited by: Özen et al., 2003). Libby, Weiss, Bancroft and Ahearn (2008) compared most to least prompting and least to most prompting with 5 autistic children in playing toy blocks. All participants learned to construct things with toy blocks when teachers used most to least prompting and made fewer mistakes than least to most prompting method. Literature review showed that studies with most to least prompting method are restricted to Vuran (1989), Özen (1995), Aykut and Varol (2007), Aykut (2007), Aykut (2012), Özen et al. (2003), Aykut and Varol (2010), Eren et al. (2013), Day and Horner (1986), Libby et al. (2008) Sisson and Dixon (1986), Mc Donnell and Ferguson (1989), Miller and Test (1989), Denny et al. (2000). This study was planned as a result of this restriction and its goal was to teach autistic children dressing skills with most to least prompting method. Therefore, answers to the following questions were sought: a) Is implementing individualized teaching program based on most to least teaching method effective in teaching autistic children to wear a coat with zipper? B) Is individualized teaching program based on most to least teaching method effective in sustaining coat wearing skill after it is learned and generalizing it to different people and settings?

METHODS

This section involved information about study model, dependent-independent variable, sample, setting and instruments, implementation of individualized teaching program, implementation process, data collection and data analysis.

Study model

In this study, effectiveness of most to least prompting method was assessed with inter-sample multi probe model, which is one of the single sample study models. In multi probe model, beginning level data was collected until at least three consecutive stable data points are obtained in all cases. After stable data was obtained, implementation begins at the first case. While only data was collected for the first case, probe data was collected at previously determined (for example, every 3 to 5 days) time intervals. If a difference was observed between beginning stage and implementation process of the first case in terms of frequency, duration, percentage, intensity etc. and a difference is observed implementation stage of the first case and probe stages of other cases, it means a relation has been found between dependent and independent variable. Meanwhile, if it was observed that the criterion is about to be achieved in the first case, probe data was collected in other cases. When the criterion was met in the B stage of first case, they pass onto the B stage of the second case. If findings in second case were similar to those in the first case, cause-effect relationship was revealed. If they get close to the criteria in the second case, probe data was collected in the third case. After the implementation was ended in the second case, implementation was started in the third case. Meanwhile, permanence effect of the implementation may be checked by collecting probe data occasionally in cases that have been implemented (Tekin-İftar and Kırcaali-İftar, 2012).

Dependent and independent variable

Dependent variable of this study is students' zippered coat wearing skill learning level. Independent variable is the usage of individualized teaching program based on most to least prompting method.

Sample

Study sample includes target students, implementer and observers.

Target students

Classroom teachers were asked for help in selecting target skills. Therefore, classroom teachers were first given skill checklists and asked to state which of these skills their students needed and order them in terms of importance. Thus, zippered coat wearing skill was specified as the primary skill. Individualized teaching programs were prepared according to the target skill. Study sample comprised three autistic students aged 8, 10, 11 who attended a private education school in Edirne. Their parents granted written permission for the children to participate in the study. Interviews with classroom teachers revealed all the students need to be taught the target skill. Students in the study were expected to have several prerequisite skills. These skills were a) imitating the model by modeling the prompts, b) receiving and performing verbal instructions (e.g., hold, take, give, sit etc.), c) choosing a reinforcer

and d) not having received education with most to least teaching method.

Implementers

Three implementer carried out the study. Implementation process was realized by two implementer. The other researcher took part in writing process of the study. One of the implementer who implemented the study has bachelor's degree in private education, post graduate degree in education of mentally disabled individuals and 11 years of teaching experience and still works as an instructor at private education department. The other implementer has bachelor's degree in private education department and is currently studying to get a post graduate degree at Audiology and Speech Disorders department.

Observers

In the study, reliability data related to dependent and independent variable were collected. Inter-observer reliability and application reliability data of the study were collected by an instructor with post graduate degree and a private education teacher. Before collecting reliability data, observers of the study were given information about a) goals of the study, b) target skill and behaviors related to target skill, c) most to least prompting method, d) teaching sessions, e) probe sessions, f) generalization sessions, g) correct or false interpretation of the skill behaviors by the student and h) reactions expected from the observed in case of correct and false reactions.

Setting and instruments

Implementation of the study was realized in an empty classroom inside the institution that the sample attended. The classroom was a place with few stimuli that distracted attention and contained the instruments required for the implementation. There was a hanger on the wall and students' coats in the classroom to practice coat wearing skill. Students' beginning, probe, implementation and monitoring data were all collected at the same setting. Data related to generalization were collected in different classroom with different hangers in the school that children attended.

Preparation of individualized education program

An individualized teaching plan was designed for each student according to the specified target skill. Most to least prompting method was used in the individualized teaching plan. Tekin-İftar and Kırcaali-İftar listed the behaviors required for efficient implementation of most to least prompting method: a) skill analysis must be developed, b) it must be decided whether skill analysis steps will be taught in forward chaining or backwards chaining, c) it must be decided what the criterion for passage from one prompting level to another will be, d) it must be decided what the criterion for passage into the next step listed in skill analysis will be, e) it must be decided what reaction will be given against false reactions of the individual. Teaching materials in this study were prepared by following this process. On the other hand, measurement tools were designed to collect beginning level, teaching, monitoring and generalization data of every student. Measurement tools consisted of three parts; which are "notifications, criteria and measurement tool instruction". In measurement tools, skill analysis of the target skill was made first. Analysis of target skills was formed by writing each skill step.

Implementation process

Beginning level and probe sessions

Beginning, probe, teaching, monitoring and generalization data were collected with the data collection tools. Moreover; beginning, probe, teaching, monitoring and generalization sessions were recorded on video and data of these sessions were collected and recorded on measurement tools by implementers. Single chance method was used for data collection in beginning level and implementation sessions. The following process was followed in specifying performance level with data collection tools:

1. Attention of target student was enabled for realization of the skill.
2. Once enabled, attention of target student was reinforced by reinforcers (very well, very nice, well done etc.).
3. Skill instruction was given for the target student to realize the skill "Wear your coat".
4. After skill instruction was given, they waited for 4 s for the target student to give reaction.
5. If target student does the first step successfully in the first step of skill analysis, "+" is marked on the data collection chart and they observed whether the student began to do the next step of the skill analysis in 4 s.
6. If target student does not realize the second step of skill analysis successfully, "-" is marked on data collection chart.
7. Single chance method was used in probe sessions and "-" was marked for the skills under the skill that student could not realize.
8. Beginning and probe data were collected until stability was achieved.
9. Steps that target student could realize successfully were divided into steps in the skill analysis and multiplied by 100, so they obtained percentage of correct steps of the sample and recorded it on the chart.

Teaching sessions

Teaching session started with the first step of the skill for each student and continued until the criteria were met. Forward chaining method, was used while teaching skills to students. All teaching sessions were recorded on camera and data of these sessions were collected by implementers who watched these sessions. As in beginning level and probe sessions, teaching sessions began by drawing target student's attention. When target student focused his attention, verbal reinforcers were used. Then skill instruction was given. They waited for 4 seconds for target student to realize the skill. When he could not realize the skill, prompts were given. Based on most to least teaching method, prompts were presented in the following order.

In the first five sessions, physical prompting (over the sample's hand) and verbal prompting (now we are putting on the coat) were used.

1. İmplementer gave the instruction "put on your coat".
2. After the skill instruction, implementer gave full physical prompting and verbal prompting together to enable the student to complete the first step of skill analysis.
3. If the student realized the first step of skill analysis with physical prompting, applicator gave verbal reinforcer. Then, they passed onto the second step of skill analysis.
4. If the student did not give a correct reaction with full physical prompting, implementer returned to teaching this skill.

At the end of five sessions, partial physical prompting (touching the

sample's elbow gently) was used.

1. İmplementer gave the instruction "put on your coat".
2. After the skill instruction, implementer gave full physical prompting and verbal prompting together to enable the student to complete the first step of skill analysis.
3. If the student realized the first step of skill analysis with partial physical prompting, implementer gave verbal reinforcer. Then, they passed onto the second step of skill analysis.
4. If the student could not realize this step with partial physical prompting, implementer presented full physical prompting in order to prevent the student from making mistakes and gave verbal reinforcer. Then, they passed onto the next step of skill analysis.
5. They passed onto the verbal prompting if the student passed each step of skill analysis with only partial physical prompting and verbal prompting in three consecutive sessions.

Verbal prompting was used for three sessions:

1. Right after skill instruction, implementer enabled the student to complete the first step of skill analysis with verbal prompting. For example, he gave the instruction "put on your coat" and waited for the student to do it.
2. After the student completed the first step of skill analysis successfully with verbal prompting, implementer gave verbal reinforcer. "Well done. You've put on your coat". Then they passed onto the second step.
3. If the student could not realize this step with verbal prompting, implementer presented partial physical prompting in order to prevent the student from making mistakes and gave verbal reinforcer. Then, they passed onto the next step of skill analysis with verbal prompting.
4. If the student could not realize this step with partial physical prompting, implementer presented full physical prompting in order to prevent the student from making mistakes and gave verbal reinforcer. Then, they passed onto the next step of skill analysis with verbal prompting.
5. implementer reinforced by giving the student food only when the student completed each step of skill analysis with only verbal prompting in three consecutive sessions. If he used full physical prompting or partial physical prompting in several steps of skill analysis, teaching program was revised and these steps were practiced again.

Skill was performed independently:

1. The student was expected to realize the first step after the skill analysis.
2. If the student realized the first step of skill analysis independently, implementer gave him verbal reinforcer. "Well done. You've put on your coat". Then they passed onto the second step.
3. If the student could not realize this step independently, implementer presented verbal prompting in order to prevent the student from making mistakes and gave verbal reinforcer. Then, they passed onto the next step of skill analysis to enable him to give independent reaction.
4. If the student could not realize this step with verbal prompting, implementer presented partial physical prompting in order to prevent the student from making mistakes and gave verbal reinforcer. Then, they passed onto the next step of skill analysis to enable him to give independent reaction.
5. İmplementer gave full physical prompting when the student could not complete this step without partial physical prompting and gave verbal reinforcer. Then, they passed onto the next step of skill analysis to enable him to give independent reaction.
6. If the student realized the skill steps 100% independently in three

consecutive sessions, implementer collected probe data in the following week. If student performance fell below 100%, the program was revised and organized. Reinforcers were given until target students performed the required criteria. Food reinforcers and social reinforcers were given together for correct reactions. Nothing was done for false reactions and no reinforcer was given. When student performance reached 100% and all steps of skill performance were realized, verbal reinforcers were given.

Generalization sessions

Generalization sessions were held in order to understand whether students were able to generalize the target skill into different people and settings. Generalization data were collected in three consecutive weeks after all the students met the criteria. Students' classroom teacher was informed about the practice during generalization process. Generalization sessions were held at a time close to school end and a different classroom. The student was given the instruction "put on your coat" and implementer assessed whether he could do it. A different teacher of the school was asked for help in order to understand whether the student was able to realize the skill in the presence of different people, asking the student to put on the coat in his/her presence, recording the student's behavior and noting down the average as the generalization data of the target skill. İmplementer reinforced the target students with verbal reinforcers for the target skills.

Monitoring sessions

Monitoring sessions were held in a way similar to beginning level sessions at the first, third and fourth weeks after teaching sessions.

Data collection

Three types of data were collected for the study; including effectiveness, inter-observer reliability and implementation reliability.

Collection of effectiveness data

All sessions were recorded on video and study data were collected after watching these records. While collecting effectiveness data, target students' correct and false behaviors in target skill were recorded and percentage of correct behavior was calculated. While assessing target skill, they collected data related to realizing skill steps of target skill. İmplementers put a "+" on data collection form when students realized the steps correctly and "-"for other cases, calculating percentage of correct behavior and inserting these data on the chart.

Inter-observer reliability

Inter-observer reliability data of the study were collected by an instructor with doctorate degree at private education and a private education teacher who graduated from mentally handicapped teaching. Video records of the study at minimum 30% of beginning, application, probe, generalization and sustainability stages were watched by the observers and inter-observer reliability data were collected. Inter-observer reliability was calculated with [(unanimity)/(unanimity + divergence)] x 100 formula. Reliability percentage of both sample for beginning, application, probe, generalization

sessions was found 100% for the target skill.

Implementation reliability

Implementation reliability data was collected by the author with coat wearing skill teaching program application reliability data collection form. Before beginning to work on implementation reliability, the author was informed verbally about how the implementer would carry out the teaching process. While watching the video records related to implementation reliability, author marked "+" and "-"on the Implementation Reliability Form by deciding whether implementer had realized the items on Implementation Reliability Form. The formula for calculating implementation reliability was: "Observed Teacher Behavior/Planned Teacher Behavior x 100" for 50% specified with Unbiased Appointment Chart of the teaching sessions for each sample. Implementation reliability was found 100% according to study findings.

Data analysis

Data obtained as a result of the dressing skill teaching exercises were graphically analyzed. For data analysis, author used linear graphic, which is one of the graphical analysis techniques. Scores related to realization of the skill were shown at equal intervals between 0 and 100 over y axis as percentage, beginning, teaching, probe, monitoring and generalization data were numbered and shown at equal intervals on x axis.

RESULTS

This section involves findings on acquisition, sustainability findings related to coat wearing skill as well as data related to generalizing the skill into different people and settings. Decision to change the stage during implementation was made according to (100%) fulfillment of the criteria in target skills.

Findings related to acquiring, sustaining and generalizing level of coat wearing skill

Findings of each student related to acquiring, sustaining and generalizing level of target skill are shown in Figure 1.

Beginning Level (BL), Probe (P), Application (A), Monitoring (M) and Generalization (G) Session Data related to Teaching Coat Wearing Skill with Most to Least Prompting Method

As shown in Figure 1, it was observed that the first student Kürşat did not have the target skill at the beginning level stage. They passed onto target skill teaching as stable data was obtained at the three beginning level sessions. Percentage of correct reactions in target skill at teaching stage was found to be between 45 and 100%. Kürşat performed the target skill at

acceptable level of 100% in the 4th, 5th and 6th sessions during application stage. As this level was the required performance, the specified criteria were met and teaching stage of the skill was ended. It was observed, that second student Ogün did not have the target skill at beginning level and probe stage. Percentage of correct reactions in target skill at teaching stage was found to differ between 50 and 100%. Ogün performed the target skill at acceptable level of 100% in the 7th, 8th and 9th sessions during application stage. As this level was the required performance, the specified criteria were met and teaching stage of the skill was ended. It was observed that third student Burak did not have the target skill at beginning level and probe stage. Percentage of correct reactions in target skill at teaching stage was found to differ between 45 and 100%. Burak performed the target skill at acceptable level of 100% in the 7th, 8th and 9th sessions during application stage. As this level was the required performance, the specified criteria were met and teaching stage of the skill was ended.

As shown in Figure 1, all of three students (Kürşat, Ogün and Burak) performed the target skill at the acceptable level of 100% in monitoring sessions which were held one, three and four weeks after target skill teaching ended. Again as shown in Figure 1, correct reaction percentage of all three students (Kürşat, Ogün and Burak) in generalizing the target skill to different people and settings at generalization sessions was found 100%.

DISCUSSION AND SUGGESTIONS

This study investigated the effectiveness of most to least prompting method in teaching autistic children coat wearing skill. Study findings reveal that most to least prompting method is effective in teaching the target skill to autistic students. Moreover, it was found that students were able to sustain the skill after the implementation ended and generalize it to different settings and people. These findings are similar to the study of Aykut and Varol (2007) who tried to teach a mentally handicapped student to wear stretch pants, cut an empty paper with scissors and paint an empty paper, study of Özen et al. (2003) study where they taught self-care skills to three mentally disabled students, Eren et al. (2013) study where they investigated the effectiveness of embedded teaching carried out with most to least prompting method in musical activities based on Orff approach on teaching concepts to autistic children, Vuran's (1989) study related to teaching dressing skills, Day and Horner's (1986) study where they taught dressing skills to 6 mentally disabled boys, study of Libby et al.(2008) who compared gradual withdrawal of prompting and least to most prompting in playing game blocks with 5 autistic children, Sisson and Dixon's (1986) study where they taught
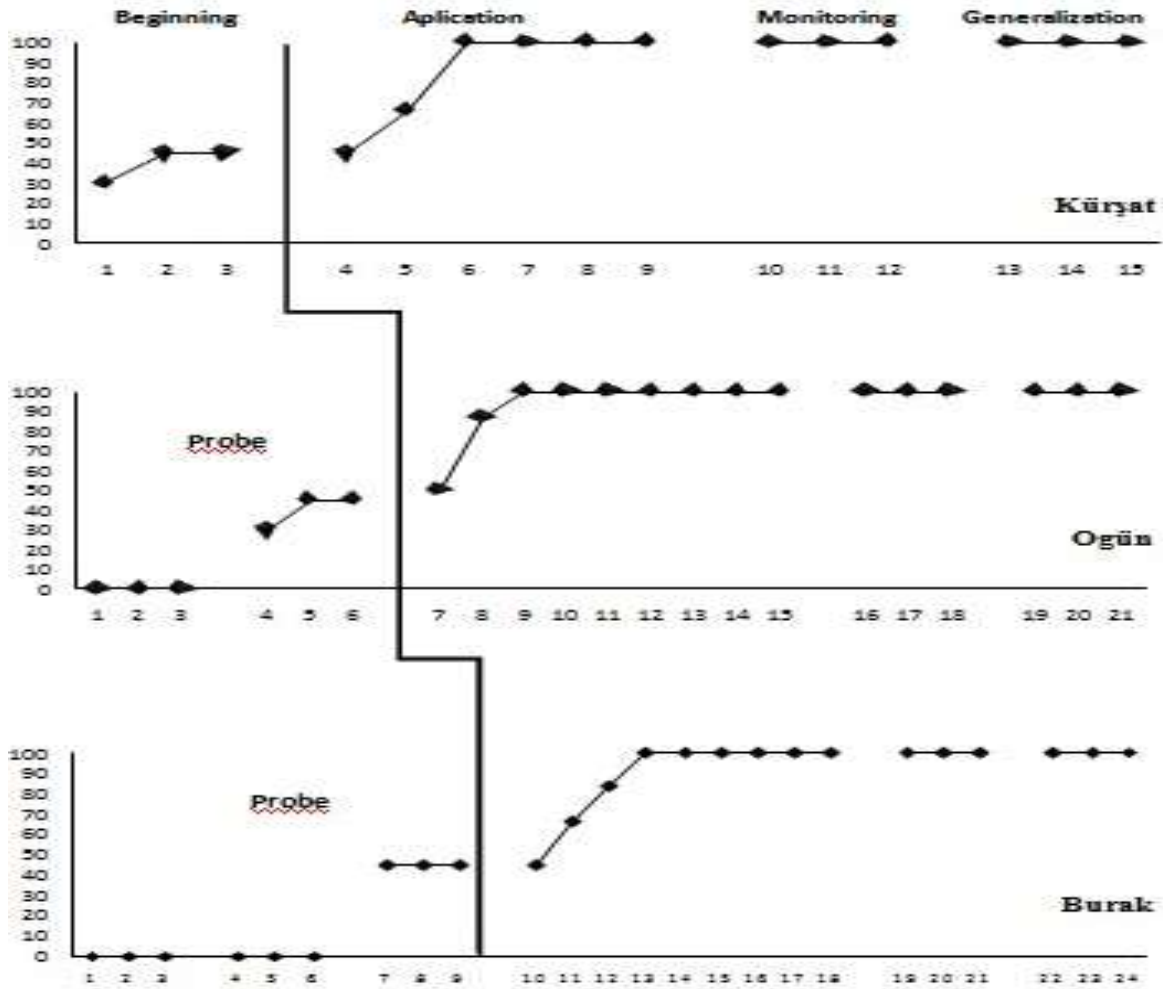
Figure 1. Acquiring, sustaining and generalizing level of target skill.

eating skills (chewing with closed mouth, using spoon, knife and handkerchief properly) to six mentally disabled children and finally the study of Denny et al. (2000) who taught eating and ball rolling skills to a mentally disabled child. Teaching with most to least prompting is commonly used as an effective method in teaching individuals with autism, developmental retardation or mental disability at various levels. It is seen that majority of studies with this method are carried out with individuals who have moderate or serious mental disability. Moreover, most to least prompting method is effective in teaching both single-step and chain behaviors to people of all age groups (Tekin-İftar and Kırcaali-İftar, 2012). These study findings support this view. At the end of this study, it was found that most to least prompting method is effective in teaching coat wearing skill to autistic students. Future studies may be repeated with students from different disability groups, different settings, different single-sample study models and errorless teaching methods.

Teachers working with students with special needs may be informed about how most to least prompting method is used in teaching so that they could use it effectively.

Conflıct of İnterests

The authors have not declared any conflict of interests.

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