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Effectiveness of Video Modeling Combined with Auditory Technology Support in Teaching Skills for Using Community Resources to Individuals with Intellectual Disabilities *

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Abstract

It is known that the ability to use community resources is important to increase the independence of young individuals in the transition to social life and adulthood. The effects of video modeling presented with auditory technology support (e.g., Bug-in-Ear, BIE) on the acquisition and retention of the skills for using community resources to three individuals with mild and moderate intellectual disabilities between the ages of 15 and 16 were investigated in the present study. Furthermore, the views of the participants, their families, and the personnel working in the setting where the present study was conducted on the functionality of the selected skills were obtained to determine the social validity of the study. In this study, a multiple probe design with probe trials across participants was used. Results demonstrated that all participants acquired the target skills, maintained these skills after 1, 3, and 5 weeks after the intervention, and generalized these skills to different settings, situations, and tools. Social validity results also demonstrate that the study results were satisfactory for the participants, their families, and the personnel working in the social setting where the study was conducted.

Keywords

Individuals with intellectual disabilities

Transition to adulthood

Skills of using community resources

Auditory technology support (Bug-in-Ear, BIE)

Video modeling

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Introduction

Intellectual disability is among the disabilities that should be supported by various instructional adaptations (Eripek, 2003, p. 156). The main goal in the education of individuals with intellectual disabilities is to ensure that these individuals can exist in social life with minimal need for others. This is closely related to the quality of the independent living skills and education services taught to these individuals (Coşgun Başar, 2010, p. 18; Gürsel, Ergenekon, & Batu, 2007, p. 64). It is extremely important for individuals with intellectual disabilities to acquire social life skills before their transition to independent living (Collins, 2007, p. 29; Sitlington, Neubert, & Clark, 2010, pp. 19-77; Steere, Rose, & Cavaiuolo, 2007, p. 207). The aim of educational services that serve this purpose is to provide these individuals with quality education services to maintain a more independent, high-quality life (Felce & Perry, 1995, p. 54; Schalock et al., 2002, p. 458).

The skills that must be acquired in community settings are those that require the use of community resources in social areas such as security, transportation, bank, store, hospital, library, shopping center, restaurant, cafe, theater, concerts, exhibition halls, sports fields/gyms etc.… (Browder & Bambara, 2000, p. 544). Skills for using community resources are often categorized under daily living and social life skills. Browder and Bambara (2000) categorized the skills for using community resources under the title of social skills and as shopping, eating out, banking, traveling, and leisure activities in community settings. Teaching skills for using community resources in natural settings based on community-based instruction is important both for the retention and generalization of the skills and for the motivation of individuals with disabilities (Browder & Bambara, 2000, p. 545; Morse & Schuster, 2000, p. 273). Skills exhibited in natural settings allow individuals to observe the significance and consequences of instruction and to obtain reinforcement by natural means in those settings. Thus, educators are encouraged to teach these skills in natural settings and using natural prompts (Browder & Bambara, 2000, p. 545). Studies have shown that individuals with intellectual disabilities have acquired skills for using many community resources when effective and efficient teaching methods were utilized. One of these effective and efficient teaching methods is the intervention of video modeling which is an evidence-based practice.

In recent years, it has been seen that emphasis is placed on the use of technology in educational services offered to individuals with disabilities (Woodward & Reith, 1997, p. 504). One of these practices where technology is used is video technology, which is often used in the education of individuals with disabilities (Mechling, 2005, p. 25). Video modeling is an intervention based on the theory of learning by observation and is used to learn new behaviors or to change existing behaviors (Bidwell & Rehfeldt, 2004, p. 265; Charlop-Christy, Le, & Freeman, 2000, p. 539; Delano, 2007, p. 34; Nikopoulos & Keenan, 2007, p. 539). In studies where skills for using community resources were instructed with video modeling, shopping (Alcantara, 1994, p. 40; Ayres & Langone, 2005, p. 253; Haring, Kennedy, Adams, & Pitts-Conway 1987, p. 89; Mechling, Pridgen, & Cronin, 2005, p. 477; Mechling, Gast, & Barthold, 2003, p. 239; Wissick, Lloyd, & Kinzie, 1992, p. 47), ATM withdrawal (Alberto, Cihak, & Gama, 2005, p. 327) and fast food ordering (Mechling et al., 2005, p. 47) skills were taught. Although the literature reveals studies in which the use of community resources were taught with video modeling, the number of studies in which video modeling was used in combination with other interventions is limited; thus there is a need for more studies on the topic (Ayres & Langone, 2005, p. 183; Mechling et al., 2003, p. 239; Scheeler, Macluckie, & Albright, 2010, p. 77). The present study extends the literature by using video modeling in conjunction with auditory technology support (i.e., Bug-in-Ear, BIE) to teach skills for using community resources.

Auditory technology support, also referred to as bug-in-ear (BIE), is an intervention that allows individuals to receive instant verbal and confirmative feedback via headset. BIE has become a frequently

used practice in educational settings during recent years (Scheeler, McKinnon, & Stout, 2012, p. 1). BIE technology has been used in skills instruction to individuals with typical development and with disabilities for approximately 60 years (Scheeler & Lee, 2002, p. 233; Scheeler et al., 2010, p. 78). BIE is a small, wireless, and one-way communication device that enables educators to conduct communications coaching. Materials used in BIE coaching such as microphones and headsets are both economical and easy to use (Kogan & Gordon, 1975, p. 190; Scheeler, Ruhl, & McAfee, 2004, p. 398). Literature on BIE use demonstrates that studies have concentrated on effective instruction by teachers (Goodman, Brady, Duffy, Scott, & Pollard, 2008, p. 207; Ottley & Hanline, 2014, p. 90; Scheeler et al., 2012, p. 1), regulation of teacher behavior (Scheeler, Congdon, & Stansbery, 2010, p. 83), and professional and vocational skills (Bennett, Brady, Scott, Dukes, & Frain, 2010, p. 173; Bennett, Ramasamy, & Honsberger, 2012, p. 585).

BIE, an intervention that reflects effective and functional use of technology, could have advantages as an intervention in enhancing individuals' independence since it provides instant feedback and does not require the coach to be in the presence of the learner when the behavior takes place (Coulter & Grossen, 1997, p. 21; Scheeler et al. 2011, p. 1). Furthermore, no studies have been conducted in natural instructional settings using one-way interventions such as BIE technologies. In addition, the present study is a first in terms of utilizing BIE support combined with video modeling. In international literature, shopping, one of the skills for using community resources, is one of the most studied skills, while leisure and travel skills are among the least studied skills. From this perspective, it could be argued that there is a need for further research on skills for using community resources, among the most critical and most frequently used skills in the transition from school to independent social life (Steere et al., 2007, p. 96). Furthermore, providing support for increasing the life quality of individuals with intellectual disabilities by meeting the criterion of "personal competence and ability to use community resources in society," which is one of the quality of life indicators (Browder & Bambara, 2000, p. 546), is only possible by teaching skills for using community resources to these individuals.

Although there are studies on the instruction of skills for using community resources in the literature, community-based interventions for the acquisition of these skills could make specific contributions such as the ability of individuals to adapt and generalize their learned responses and skills in various situations. Thus, the present study would provide practitioners with a good community-based intervention model and would contribute to the literature.

The aim of the present study is to examine the effectiveness of video modeling presented using BIE on teaching skills for using community resources to individuals with intellectual disabilities and to measure the social validity of this intervention by determining the views of the same individuals, their families, and personnel present in the settings where the study was conducted. To this end, the following research questions were addressed: (a) Is video modeling presented using BIE effective for individuals with intellectual disabilities in learning the skills of ordering food and drinks in a restaurant, paying electric bills, and riding the tram? (b) If these skills are achieved by individuals with intellectual disabilities using video modeling, can these learners retain these skills for 1, 3, and 5 weeks following the instruction? (c) If these skills are achieved by individuals with intellectual disabilities using video modeling, can these individuals generalize the acquired skills to different settings and different tools? (d) What are the views of the individuals with intellectual disabilities participating in the research, their families, and the personnel working in the social setting in which the research was conducted on the instructional process and the targeted skills that were instructed with video modeling using BIE?

Method

Participants

Three 15-16 year-old-male subjects with mild and moderate intellectual disabilities who attended the eighth grade in a public school for individuals with intellectual disabilities participated in the study. Prior to the study, the families of all participants were informed about the study and their approval for participation was obtained. All participants were assigned code names for the study.

A list of the skills for using community resources that were intended to be instructed in the study was provided to the participants' families and their teachers to determine the target skills for each participant. The participants' parents and teachers were asked to mark the skills they wanted their children/students to learn. The skills that both groups marked were identified as the students' target skills.

To study the target skills, these prerequisite traits were required for study participants: (a) identified in a report by the state, private hospital, or psychiatry department of a university as having an intellectual disability; (b) old enough to use community resources alone (i.e., 15-20 years); (c) no previous training on the skills for using community resources that would be instructed in the study; (d) comprehension of instructions that include three or more words and ability to follow these instructions; (e) reading and reading comprehension skills, and (f) shopping skills or (i.e., finding store items, paying with money, and receiving change). The researcher interviewed the classroom teachers to determine whether the participants had the abovementioned prerequisite traits. Afterwards, assessment for each participant's target skills was conducted, and participants were offered the opportunity to perform the skills. Furthermore, the participants were presented with three-, four-, and five-word directives (e.g., "Bring the wooden pencil from the classroom," "Give me the pencil under the table," and "Bring me the white paper on the teacher's desk") to determine the participants' comprehension of the instructions and ability to follow them. To determine whether the participants had reading skills, the students were given a reading text in 14-point font, including 4 sentences and 17 words. After reading the text, the participant was asked "What, Where, When, Who, Why? and How? (5W1H)" questions and expected to respond to the questions independently. Finally, assessments were conducted at a grocery store close to the research site to determine whether the participants had the shopping skills to find store items, use money for purchases, and receive change. In this assessment, participants were asked to shop with the instruction: "Go to the grocery store and buy something you want." During this process, specific shopping skills such as finding an item, using money for purchase, and receiving change were observed. Information on the study participants is presented in Table 1.

Table 1. Participants' Code Names, Ages, Diagnoses, and Target Skills

Code Name	Age	Gender	Diagnosis	Target Skill
Emre	16	Male	Mild level ID	Paying an electric bill
Can	15	Male	Mild level ID	Using the tram
Efe	15	Male	Moderate level ID	Ordering food and/or drinks at a restaurant

Emre was a 16-year-old student diagnosed with mild intellectual disability by a university hospital in Turkey and attended the eighth grade in a secondary school that provided education for individuals with intellectual disabilities. Concurrently, Emre attended a private special education and rehabilitation center. He received 4 hours of supportive education in this center per week. Emre initiated communication with people he knew and greeted them. He understood and performed instructions of three or more words. He expressed himself using phrases of three or more words and could independently describe his house, and tell or write his parents' contact information. He responded to verbal and written questions about text that was read to him or read by him. He could shop independently. Acquisition and generalization of the electric bill payment skill were studied with Emre.

Can was a 15-year-old eighth grade student in a secondary school specialized for individuals with intellectual disabilities in Turkey, and he was diagnosed with mild intellectual disability. He also

attended a private special education and rehabilitation center. He received 4 hours of supportive education in this center per week. He understood and performed sequential instructions of three or more words. He expresseed himself using phrases of three or more words and responded independently to questions about his immediate surroundings and recent events. He could tell and write his parents' contact information and independently used his mobile phone to call relatives when necessary. He greeted people he knew and initiated communication with them. He had reading and writing skills and independently shopped at the retailers such as the grocery store or market near his home. In the present study, the skill of riding the tram was targeted for instruction and generalization with Can.

Efe was a 15-year-old middle school student in the eighth grade at a school specialized for individuals with intellectual disabilities and he was diagnosed with moderate intellectual disability by a university hospital. He also attended a private special education and rehabilitation center where he received 4 hours of supportive education per week. He understood and performed sequential instructions of three or more words and expressed himself using phrases of three or more words. He had acquired independent shopping skills, including receiving change. Efe initiated communication with others, greeted familiar people, and chatted about events and individuals in his immediate vicinity. He reads it by spelling and could write when the text was dictated. He answered verbal and written questions about text he read or that was read to him. Efe's acquisition and generalization of the skill of ordering food and/or drinks at a restaurant were investigated in the present study.

Researcher. The researcher (first author) completed undergraduate and graduate studies in the field of special education for the individuals with intellectual disabilities and has been employed as a teacher for 5 years in the field of special education. The researcher currently works as a research assistant and continues Ph.D. studies in the field of special education, specifically, the education of individuals with intellectual disabilities. The role of the researcher in the present study was to (a) identify individuals with intellectual disabilities who would participate in the study by assessing their performance prior to the study to determine whether they possessed the appropriate prerequisite skills, (b) inform the participants and their families about the study, (c) determine appropriate reinforcements for participants using a reinforcement determination form, (d) instruct the skills for using community resources to individuals with intellectual disabilities via video modeling combined with BIE, (e) provide feedback to individuals with intellectual disabilities during the intervention, (f) record performance data on data entry forms in all phases of the study, (g) visually analyze and interpret graphically displayed data collected during all phases of the study to determine the effectiveness of the intervention, and (h) collect and interpret the study's social validity data.

Research Assistant. The research assistant video recorded the participants while they performed their target skills during the study's pilot scheme, survey, maintenance, and generalization sessions. The research assistant did not interact with the participants other than greeting them during these sessions. Since the objective of the study was to teach the participants to perform their target skills independently, the researcher needed the assistant to video record intervention sessions as the researcher provided remote instructional feedback to the participants through the Bluetooth headset. The researcher provided the assistant with thorough information about the three target skills and the entire study process prior to initiation of the study. Close attention was paid to prevent any interaction between the research assistant and the participants, both to desensitize the participants to the camera in the social settings and to ensure that the research assistant provided no prompts. The research assistant held undergraduate and postgraduate degrees in special education and education of individuals with intellectual disabilities and was a Ph.D. student in the same field.

Peer Model. The peer model acted out the target skills of paying an electric bill, riding the tram, and ordering food and/or drink at a restaurant in three sample videos used in instructional sessions. The peer model was several years older than the subjects and had physical features similar to theirs. The peer model was a fourth-year student in a university Department of Special Education, Individuals with Intellectual Disabilities Teaching Program.

Observer. Reliability data were collected by a research assistant who held undergraduate and postgraduate degrees in the field of special education and the education of individuals with intellectual disabilities and was pursuing a doctoral degree in the same field during the study. The observer was informed in detail about the intervention prior to the study.

Setting

Assessment for some of the prerequisite skills required for participation in the research project were conducted in one of the classrooms of the school the individuals with intellectual disabilities attended and the rest was conducted in the social/retail setting. Osmangazi Retail Electric Sales Corporation (OEPSAŞ) central bursar offices were used as the instructional setting for the electric bill payment skill, and a private bill payment agency was used as the generalization setting. National Sovereignty and Baksan tram stops were the instructional settings for the tram-riding skill, and trams running on the line were the generalization settings. Specifically, the Anadolu University-Bağlar tram stop and the trams running on that line and Private Public Buses were used as study settings. The instructional setting for the skill of ordering food and/or beverages was a restaurant named Satı Anne's Cuisine, located in the main campus of Anadolu University, and a business named Çıtır Simit was used for the generalization setting.

Materials

Materials used in the process of determining the participants' prerequisite skills were Family and Participant Approval Forms, Prerequisite Skills Assessment Form, video camera, reading material and comprehension questions, whiteboard marker, pencil, white paper, and banknotes. Materials used in instruction of the electric bill payment skill were a skill analysis form, electric bills, banknotes equal in value to the electric bills or more, coins for payment change, bill payment receipts, a numerator, the voucher displaying the numerator output, a video camera, a tablet computer, a microphone, a bluetooth headset, a voice recorder, a data entry form, and a pen. Materials and equipment used for the skill of ordering food and/or drinks in a restaurant were a skill analysis form, a menu booklet, a table number, money, a video camera, a tablet computer, a microphone, a bluetooth headset, a voice recorder, a data entry form, and a pen. Materials used for the tram-riding skill were a skill analysis form, a single-use contactless transportation card, a multi-use contactless transportation card for skill generalization, a video camera, a tablet computer, a microphone, a Bluetooth headset, a voice recorder, a data entry form, and a pen. Materials used to collect intervention reliability and interobserver reliability data were an external memory chip where intervention videos were stored, a laptop computer, a data entry form, and a pen. Materials used when collecting social validity data were an external memory chip for intervention images, a laptop computer, social validity questionnaires, and pens for all three target groups.

Research Model

A single-subject multiple probe design with probe trials across participants was used to investigate the effects of the intervention. Experimental control was established by the increase in levels of the target skills for using community resources (i.e., bill payment, food and/or beverage ordering at a restaurant and riding the tram) from the baseline phase to post intervention (i.e., after the video modeling with BIE) and by persistent skill levels when video modeling with BIE was not presented.

Dependent and Independent Variables. The dependent variable was the percentage of correct responses by the participants on the target skills. Task analyzes are included in the Appendix 1, 2 and 3. The independent variable was video modeling combined with BIE. In the presence of the researcher, the participants initially watched the videos showing the correct use of the skills targeted for their instruction. After watching the videos, the participants were directed to independently perform the target skill steps. While the participants performed independently, the researcher presented instructive feedback on their performance using the BIE.

Possible Response Definitions. Three types of responses were identified: correct response, incorrect response, and no response in the baseline probe, daily probe, generalization, and maintenance sessions. Accomplishment of a skill step completed correctly was considered a correct response, lack of or inadequate accomplishment of a skill step was considered an incorrect response, and the absence of any response related to a skill step was identified as no response.

Preparations for the Experimental Process

A 10-stage preparatory process was conducted before the study began. These stages included determination of the skills for using community resources that would be targeted, obtaining official approvals to conduct the study in the determined settings, developing the skill analyses, preparation of sample video recordings, identification of the participants, obtaining approvals from participants' parents and teachers for interviews, pairing the participants with the skills, assessment of prerequisite skills, determination of the reinforcement preferences of the participants, preparation of social validity forms, and preparation of materials to be used during the intervention.

Experimental Procedures

Baseline Probe Sessions. Baseline probe sessions were conducted before the instructional sessions. Instructional sessions were initiated after stable data were obtained in three consecutive baseline probe sessions. The single opportunity method was used to collect baseline data. Correct responses were marked on the data entry form as (+), and incorrect responses were marked as (-). Evaluation in the baseline phase was terminated when the individual gave the first incorrect response. In each 1:1 baseline probe session, the researcher first attracted the participant's attention (i.e., "We will pay the electric bill with you today. Are you ready?" / "We will order food or drink at the restaurant with you today. Are you ready?" / "We will ride the tram with you today. Are you ready?"). If the participant paid attention or verbally stated that he was ready, this behavior was verbally reinforced (e.g., "Great, I see that you're ready, so let's get started."). Then the researcher presented the skill directive adequate for the participant's target behavior (i.e., "Pay the electric bill." / "Order the food or drink you'd like." / "Take the tram, get off at the … stop."). When the learner completed the first step, the researcher provided reinforcement and waited 5 sec for the initiation of the next step. If the target individual provided an incorrect response, the researcher terminated the baseline probe session at that point. The researcher entered the performance data on the "Baseline Probe Session Data Entry Form" for each learner's target behavior. Then, the researcher calculated the correct response percentage and plotted it on a graphic display for each learner.

Daily Probe Sessions, Daily probe sessions were conducted to determine whether the individuals learned their target skills. Daily probe sessions were conducted just before each instructional session except for the first instructional session. The researcher followed the same procedures in daily probe and baseline probe sessions and recorded performance data on the "Daily Probe Session Data Entry Form." Then, the researcher calculated the correct response percentage and plotted it on a graphic display.

Instructional Session. The researcher provided feedback using the BIE headset, allowing the participants to complete the target skills via the video modeling process without the researcher being present with the learner. During instructional sessions, the researcher did not provide any prompts to the individual, but allowed the participant to watch the video on the tablet computer. The BIE was used to provide remote but immediate feedback to assist each learner in completing his task independently after watching the video. Before instructional sessions, the researcher entered the session setting and put the microphone and Bluetooth headset on the participant. The researcher then said, "Now you'll watch a video. Do you wonder what we'll watch? Should we start?" to secure the learner's attention. After the researcher received the participant's attentional response, the researcher provided the participant with a tablet computer and gave the instruction to "Watch the video." and waited for the video to start. The researcher checked whether the individual viewed the video carefully. If the individual did not watch the video, the researcher gave instructions such as "Watch carefully" and "Keep on watching." When the participant watched the whole video, the researcher reinforced the behavior

and took back the tablet computer. The researcher then presented the skill directive for the target behavior (i.e., "Pay the electricity bill." / "Order a food or drink you want at the restaurant." / "Take the tram, get off at the … stop.") and waited 5 sec for initiation of the response. Using the BIE technology from a location where the researcher was not visible to the participant, the researcher verbally reinforced the individual's correct responses and provided encouraging feedback such as "You're doing fine; you can go on;" "You might want to wait a while now;" or "I'll be waiting for you outside." The researcher did not give any feedback when the individual reacted incorrectly or did not respond. With this process, the researcher did not provide any prompts to the learner and expected him to perform the skill steps independently. All stages were recorded with a tape recorder by the researcher during the training sessions to ensure that the investigator did not provide clues to the participant and that the reliability of the study was not affected. The session was audio recorded with the voice recorder the researcher used during baseline and daily probe sessions. Video modeling was provided only once per session. The process continued until individual performed all the steps of the target skill correctly, and all the instructional sessions were conducted in the same manner.

Maintenance Sessions. Maintenance sessions were conducted to determine the extent to which the participants maintained the skills they were taught. The maintenance data were obtained during the first, third, and fifth weeks after stable performance data were obtained in the instructional sessions. The researcher entered the data obtained in the maintenance sessions on the "Maintenance Sessions Data Entry Form," calculated the correct response percentage, and plotted it on a graphic display.

Generalization Sessions. Generalization sessions were conducted for the three target behaviors. A different bill payment location was used as the generalization setting for the electric bill payment skill. For tram-riding skill, both setting and material generalization sessions were conducted, using a different public transportation vehicle, the bus, and a different transportation card. Furthermore, a second generalization session was conducted on tramway lines that were more crowded and farther away from Can's home, also using a different transportation card. Setting generalization assessment was conducted for the skill of ordering food and/or drinks at a restaurant in a different self-service restaurant. Within - instruction generalization procedures were also included in the study. During instructional and probe sessions for the electric bill payment skill, the teller desks, tellers, and the attendants at the numerators were replaced with other personnel and the electric bill amounts were changed from lower to higher fees. During instructional and probe sessions for the tram-riding skill, stops were changed by using both directions on the tram line. For the skill of ordering food and/or drinks in a restaurant, within-instruction generalization was maintained by the change of service personnel from time to time. Apart from these adaptations, certain variables spontaneously emerged and could not be prevented during instructional and probe sessions in natural environments. For example, the number obtained from the numerator for the bill payment skill sometimes took longer than expected to come up, prolonging the waiting period. Since the turnstile was broken for a while during instruction of the tram-riding skill, the participant could not get back his transportation card from the turnstile. He sometimes had to wait for a long period of time at the stop due to delays, and he could find a place to sit in the tram on certain occasions but he had to ride the tram standing on others. These variables that emerged during instructional sessions were, in fact, within-instruction generalization elements and required the participants to adapt to these unexpected situations. Generalization sessions were conducted as pretest and posttest sessions. In the pretest generalization session, data were collected for each participant's target behavior before the instructional session started. Posttest generalization session data were collected after the completion of all instructional sessions, where setting and material generalization assessments were conducted for each participant's target behavior.

Reliability

Interobserver reliability and treatment integrity data were collected in at least 30% of all sessions conducted in the study. All video recordings of each participant's target behavior and voice recordings of the BIE feedback provided by the researcher during instructional sessions were provided to an observer who collected the reliability data. The observer viewed and listened to 30% of these sessions and entered the data on the interobserver reliability and treatment integrity data entry forms.

Interobserver Reliability. Interobserver reliability data were collected for at least 30% of all sessions in all phases using skill analysis steps designed to measure the target behaviors identified as dependent variables.

Treatment Integrity. The observer collected treatment integrity data for all instructional and probe sessions by viewing the video recordings. Steps checked for completion by the researcher were (a) the researcher prepared materials required for instruction, (b) the researcher prepared the video recording, (c) the researcher provided a cue for the learner to watch the video, (d) the learner viewed the video recording, (e) the researcher reinforced the participant's video-viewing behavior, (f) the practitioner presented the skill directive, (g) the researcher provided adequate BIE feedback for learner responses, (h) the researcher reinforced the learner for participating in the session. The steps considered for treatment integrity of probe sessions were (a) the researcher prepared the materials necessary for the probe session, (b) the practitioner presented an attentional cue and secured the participant's attention, (c) the practitioner presented the skill directive, (d) the practitioner reinforced the participation of the learner.

Social Validity. Social validity data were collected from participating individuals with intellectual disabilities, their families, and the personnel who worked in the research settings. The social validity data collected from the target populations were analyzed descriptively.

Results

Effectiveness

Results on the effectiveness of video modeling with BIE on the acquisition of skills for using community resources by individuals with intellectual disability are shown in Figure 1. In baseline probe sessions conducted with the first participant, Emre, a mean 3% correct responding was observed with a stable data pattern and the intervention phase was initiated. In the intervention phase, Emre exhibited 20% correct responses in the first daily probe session, 87% in the second daily probe session, 93% in the third and fourth daily probe sessions, and 100% in the fifth, sixth, and seventh daily probe sessions. Emre performed the electric bill-paying skills with 100% accuracy in all three maintenance sessions conducted 1, 3, and 5 weeks after meeting performance criteria in the instructional phase.

The performance of the second participant, Can, in baseline probe sessions was measured at a 0% mean accuracy rate. In the intervention phase when Can was taught to ride the tram, Can exhibited 14% correct responding in the first daily probe session, 53% in the second daily probe session, 93% in the third daily probe session, and 100% in the fourth, fifth, sixth, and seventh daily probe sessions. Can emitted 100% correct responses for the tram-riding skill in all three maintenance sessions.

Baseline probe sessions conducted with the third participant, Efe, showed a 0% correct response rate on the skill of ordering food and/or drinks at a restaurant. With stable baseline data collected, instructional sessions were initiated and Efe exhibited 14% correct responding in the first daily probe session, 75% in the second daily probe session, 93% in the third daily probe session, and 100% in the fourth, fifth, sixth, and seventh daily probe sessions. Three maintenance sessions were conducted to examine Efe's retention of his food-ordering skill 1, 3, and 5 weeks after he met performance criteria for instructional sessions. Efe demonstrated a 100% correct response rate all three maintenance sessions.

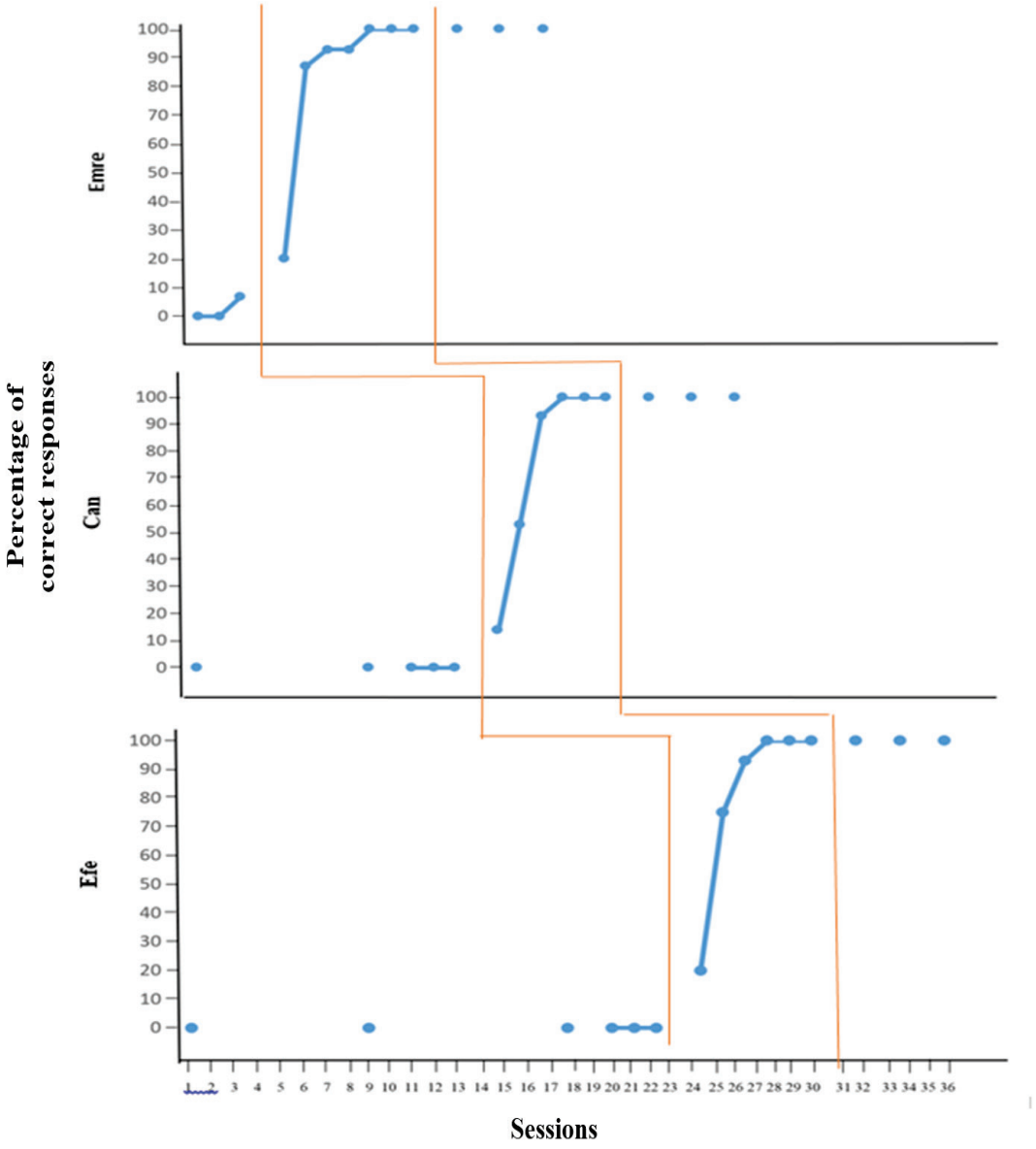

Figure 1. Correct Response Rates in Baseline Probe (BL), Probe (P), and Maintenance (M) Sessions on Skills for Using Community Resources by Emre (Paying The Electric Bill), Can (Riding The Tram), and Efe (Ordering Food and/or Drinks at a Restaurant

Generalization

In this study, data on the generalization of the target skills identified for each of the three participants were collected. The first two participants (Emre and Can) met the determined performance criteria in the generalization posttest sessions, but a generalization instructional session was conducted with the third participant, Efe, since he failed to meet the specified criteria. Participant generalization data are presented in Figure 2.

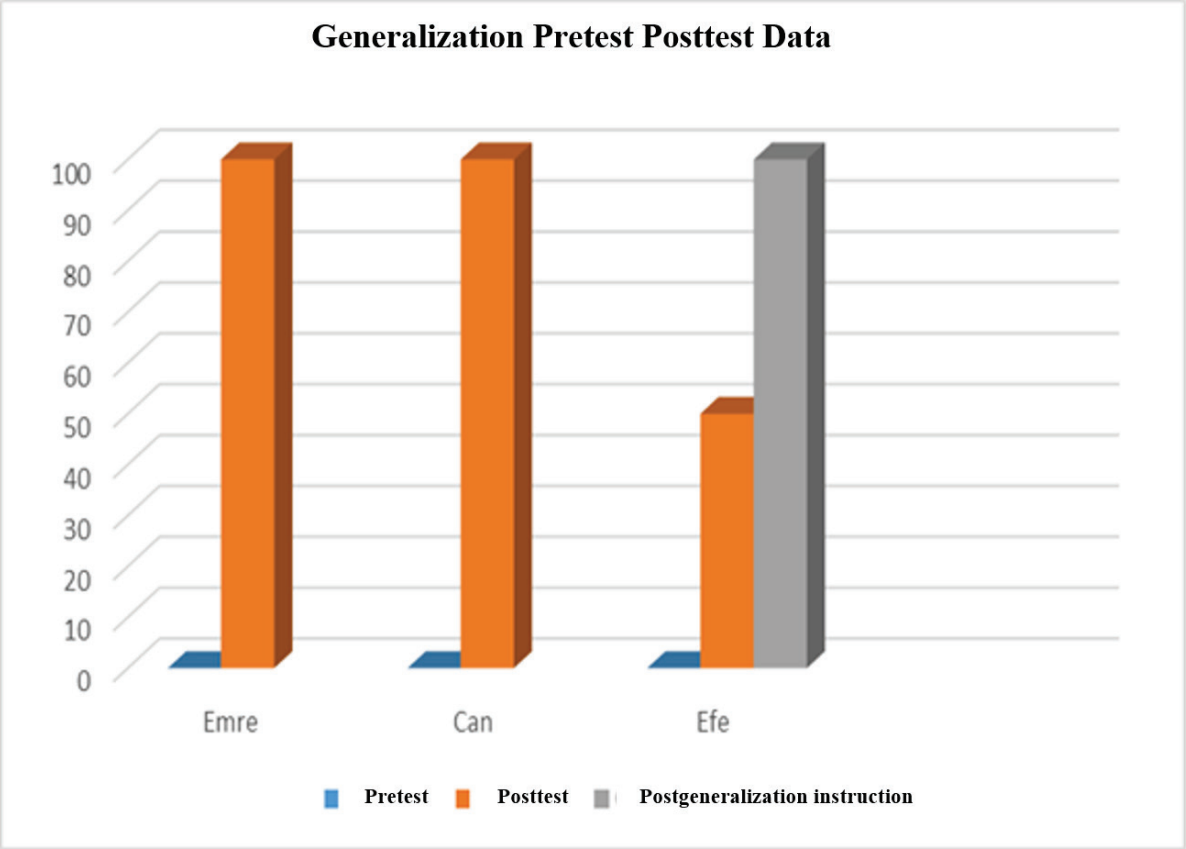

Figure 2. Generalization Pretest, Posttest, and Postgeneralization Instruction Data on the Skills for Using Community Resources by Emre (Paying the Electric Bill), Can (Riding the Tram), and Efe (Ordering Food and/or Drinks at a Restaurant)

Social Validity

Social Validity Results for Participants. Views of participating individuals on the study were generally positive. Participants considered the studied skills for using community resources useful and they were satisfied with their involvement in the research. After the study ended, two of the participants (i.e., Can and Efe who acquired the skills of riding the tram and ordering food and/or drinks at a restaurant) stated that they still used the learned skills when they leave the house alone, while Emre who learned to pay the electric bill said that he did not use the skill alone but he himself pays the bill when his mother takes him out to pay it. When asked in open-ended question format on the social validity questionnaire what made them most happy about the study, Emre said, "wearing the headset," Can replied, "eating alone," and Efe said, "riding the tram by myself."

Social Validity Results for Participants' Parents. Parents of the participants expressed generally positive views on the study. Responses given to the closed-ended questions on the social validity questionnaire indicated that the participants' mothers or fathers considered video modeling with BIE useful in teaching skills for using community resources to their children and stated that they were glad their children participated in the study. They said they believed their children would benefit from the instructed skills for using community resources in social environments.

Social Validity Results Obtained from Personnel Employed in the Community Research Settings. The closed-ended questions in the questionnaire on the tram-riding skill showed that the security personnel working at the tram stop considered this skill instructed with video modeling supported by BIE a significant skill for individuals with intellectual disabilities. As an employee of the institution, he was glad the study was conducted and thought Efe could generalize the learned tram-riding skill to other public transportation vehicles (e.g., bus or minibus). Within the context of the open-ended questions in the questionnaire on the tram-riding skill, the interviewed personnel was asked, "What did you like the most about the study?" The person replied, "It is good to help people with disabilities. You have enabled them to benefit from these opportunities." The officer stated that there was no aspect of the study he disliked.

For the electric bill paying skill, the cashier answered the closed-ended questions stating that the intervention was important for individuals with intellectual disabilities and that the study was satisfactory. The interviewee stated that she never observed other individuals with intellectual disabilities performing this skill alone. For the open-ended questions related to the skill of paying the electric bill, the interviewed personnel stated the aspect she liked most about the study as follows: "I was amazed with the use of technology. I never imagined such an intervention. I also had the opportunity to help; I was delighted," and stated that there was no aspect of the study she disliked.

Responses to the closed-ended questions on the social validity questionnaire for the skill of ordering food and/or drinks at a restaurant revealed that the interviewed business owner considered video modeling with BIE instruction for the skill of ordering food and/or drinks at a restaurant important for individuals with intellectual disabilities. The interviewee was satisfied that the study was conducted and thought Can would be able to exhibit the learned skill of ordering food and/or drinks in other establishments as well.

Discussion

Overall, study results demonstrate that all three participants acquired the skills for using community resources, which were specifically determined for them, they continued to exhibit these skills after completing the intervention, and they could generalize these skills to different settings, situations, or materials. This study's social validity results show that the participants, their parents, and personnel employed in the research settings were satisfied with the outcomes of the study. Effectiveness results demonstrate a significant difference between the participants' baseline probe data on the skills for using community resources and their post instruction performance data. This study's effectiveness, maintenance, and generalization data are consistent with the results of similar studies where video modeling was used for the instruction of social skills to individuals with intellectual disabilities (Alberto et al., 2005, p. 327; Alcantara, 1994, p. 44; Ayres & Langone, 2005, p. 253; Haring et al., 1987, p. 89; Kurtoğlu, 2015, p. 88; Mechling et al., 2005, p. 47; Mechling et al., 2003, p. 239; Wissick et al., 1992, p. 207).

Both peer and adult models were used in the studies that employed video modeling. Study results reported in the literature demonstrate that using peer models was effective in the instruction of several skills to individuals with disabilities (e.g. Bidwell & Rehfeldt, 2004, p. 263). The use of a peer model with physical features and age like the participants had positive effects on the participants in the present study.

In previous studies, BIE was used to provide coaching and immediate feedback for teachers to encourage effective instruction (Bennett et al., 2010, p. 173; Goodman et al., 2008, p. 207; Ottley & Hanline, 2014, p. 90; Scheeler & Lee, 2002, p. 231; Scheeler et al., 2010, p. 78; Scheeler et al., 2012, p. 1). Unlike these studies, BIE served as a support function instead of coaching in the present study. BIE was used to contribute to the independence of individuals with intellectual disabilities while they were learning their skills, by providing them remote and immediate feedback. Thus, it could be argued that the study contributed to the literature by providing a different perspective and it is the first in using BIE technology in this manner.

Difficulties in controlling the variables in the natural environments where skills for using community resources are instructed, difficulties of getting permission for video recording in settings where the intervention is implemented, difficulty transporting individuals with intellectual disabilities to natural instructional settings, the fact that many practitioners do not want to take on this responsibility, and the costs related to the instruction of these skills cause both practitioners and learners to prefer instruction for these skills in clinical and/or simulated environments (Cooper & Browder, 2001, p. 1; Morse & Schuster, 2000, p. 273) over community-based instructional interventions (Ayres et al., 2006, p. 253; Browder & Bambara, 2000, p. 543; Haring et al., 1987, p. 89). The present study's results show that this community-based instructional intervention (i.e., instructional practice in natural environments) helped individuals with intellectual disabilities to learn complex, multi-step skills more rapidly when compared to simulation environments and they could easily generalize the learned skills to different settings, situations, and materials. These results were consistent with the results of similar research (Haring et al., 1987, p. 89; Haring, Breen, Weiner, Kennedy, & Bednersh, 1995, p. 29; Kurtoğlu, 2015, p. 88; McDonnell, Horner, & Williams, 1984, p. 123; McDonnell & Ferguson, 1989, p. 116; Morse & Schuster, 2000, p. 273; Nietupski, Clancy, & Christiansen, 1984, p. 91; Sprague & Horner, 1984, p. 273; Pol et al., 1981, p. 61; Yeaton & Bailey, 1978, p. 315).

Conducting this study in natural environments provided several advantages such as facilitating the participants' skills generalization, providing natural reinforcement, and raising awareness in the society about individuals with disabilities. However, the same community-based instruction caused several problems for the current researcher and participants. These difficulties, which caused the intervention to halt from time to time and were difficult to control, included challenges experienced during the process of obtaining the necessary permits, the inability or difficulty to conduct the sessions due to temporary intensity in the intervention setting, the inconvenience of recording video for other individuals in the environment, the difficulty of setting appropriate times for research staff and participants due to the fact that several people had to work at the same time, curiosity caused by the behavior of the participant during the video recording process in the environment, and the need to watch the participants closely. However, exposure of the participants to all these variables allowed them to make some adjustments in their behavior and to become insensitive to the stares of people around them. From this perspective, these variables were highly relevant for acquiring or using critical skills such as problem solving, making transient decisions, and implementing skills that are important in the transition of individuals to adult life (Collins, 2007, p. 157; Browder & Bambara, 2000, p. 561; Steere et al., 2007, p. 189). Furthermore, the repetition of the instruction of skills in natural settings in further studies may contribute to changing societal attitudes toward individuals with disabilities, increasing people's awareness of the capabilities of individuals with disabilities and raising the self-confidence of these individuals by living independent lives in the society. In the present study, BIE and video modeling were used in combination. Video modeling has been demonstrated to be an effective intervention for individuals with intellectual disabilities in learning skills for using community

resources (Alberto et al., 2005, p. 327; Alcantara, 1994, p. 40; Ayres & Langone, 2005, p. 253; Cihak, Alberto, Taber-Doughty, & Gama 2006, p. 1; Haring et al., 1987, p. 89; Mechling et al., 2005, p. 47; Mechling et al., 2003, p. 239; Wissick et al., 1992, p. 207) and this instruction was presented only by viewing video clips on tablet computers without the provision of any prompts. In the present study, BIE technology was used to provide remote but immediate feedback to each learner so that he could follow the steps shown in the video, thus performing the skill independently without a companion. There were two reasons for using the BIE feedback solely for reinforcement purposes in the present study. The first was to observe the effects of video modeling, and the second was to avoid the leaners' prompt dependence, thus contributing to the learners' independence (Bennett et al., 2010, p. 173; Scheeler et al., 2010, p. 77).

This study's social validity results demonstrate that the most favorable aspects of the study for all three target populations were the use of technology and the freedom to act alone for the participants, increasing the independence and self-esteem of their children for the parents, and building societal awareness and the institution for the employees. Almost all interviewees stated that there was not any situation with which they were uncomfortable during the study. The seamless transition of individuals with intellectual disabilities to adult social life is only possible through the acquisition of social skills before they transition to independent living (Collins, 2007, p. 29; Sitlington et al., 2010, p. 220; Steere et al., 2007, p. 207). For this purpose, individuals with intellectual disabilities who were in transition to adulthood were identified as participants in the present study. A review of the related literature demonstrated that the concept of quality of life is fed by three main resources: (a) personal, familial, social, and environmental conditions that affect individuals' quality of life; (b) access of individuals to community services; and (c) individuals' success as a result of self-organization and planning their lives (Felce & Perry, 1995, p. 51; Wehmeyer & Schwartz, 1998, p. 75). The results of the present study showed that all three of these sources were supported. As a result, the individuals who learned skills for using targeted community resources received positive feedback such as feeling more self-sufficient, becoming more independent, and enjoying more social acceptance. Furthermore, through this study, the participants achieved easier access to community services and they were provided with the opportunity to make plans and implement these plans for specific purposes in their own lives, thereby enabling them to self-organize which is the basis of independent living.

Limitations

One of the limitations of this study is related to the study participants who were individuals with only mild and moderate intellectual disabilities. Failure to control all external variables due to working in natural settings and working in specific natural settings (such as two tram stops and two bill payment facilities) could be considered other limitations. Another limitation is the fact that all sessions were held during the daytime and the tram-riding skill assessment and instruction was conducted only on trams running on the same line. Finally, the fact that only one type of bill (electric) was studied during the instruction of the bill payment skill and that Can was not given the opportunity to select the restaurant for instruction on skill of ordering food and/or drinks in a restaurant could be considered another limitation of the study.

Recommendations

Recommendations for Interventions. In the present study, the researcher accompanied the participants as they viewed the model on the tablet computer. In future studies, a participant could watch the video alone as the practitioner remotely issues instructions using the BIE. During the intervention, a smaller tablet computer could be used to prevent the difficulties in carrying and storing a 10-inch tablet computer. When the intervention was implemented in the present study, a video camera was used to collect performance data. An integrated goggle camera could be used instead of a video camera to make the individual feel completely independent. Furthermore, individuals might be asked to choose from restaurants or other instructional sites appropriate for their target skills in environments where there are multiple restaurants or skill-related sites.

Recommendations for Future Research, The present study could be repeated with individuals in different disability groups. Skills for using different community resources (e.g., leisure activities) other than the skills instructed in the present study could be targeted. The skills of ordering food and/or drinks at a restaurant and riding the tram could also be instructed to small groups, or these skills could be instructed individually while generalization sessions are conducted within small groups. The studied skill could be developed by combining the skills of riding the tram and transferring from the tram to the bus or riding the tram on one direction and returning by bus. Generalization of the skill of paying the electric bill could be conducted using the payment of other bills such as water, natural gas, or telephone. In addition, in the present study, videos were shot using a model who was close to the age of the participants but somewhat older. Further studies could be conducted to compare the use of other model types such as peer models and adult models or peer model and personal perspective.

References

Alberto, P. A., Cihak, D. F., & Gama, R. I. (2005). Use of static picture prompts versus video modeling during simulation instruction. *Research in Developmental Disabilities*, *26*(4), 327-339. doi: 10.1016/j.ridd.2004.11.002

Alcantara, P. R. (1994). Effects of videotape instructional package on purchasing skills of children with autism. *Exceptional Children*, *61*(1), 40-55. doi: 10.1177/001440299406100105

Ayres, K. M., & Langone, J. (2005). Intervention and instruction with video for students with autism: A review of the literature. *Education and Training in Developmental Disabilities*, *40*(2), 183-196. doi: 200506v40n2p183-196

Ayres, K. M., Langone, J., Boon, R. T., & Norman, A. (2006). Computer-based instruction for purchasing skills. *Education and Training in Developmental Disabilities*, *41*(3), 253-263.

Bennett, K., Brady, M. P., Scott, J., Dukes, C., & Frain, M. (2010). The effects of covert audio coaching on the job performance of supported employees. *Focus on Autism and Other Developmental Disabilities*, *25*(3), 173-185. doi: 10.1177/1088357610371636

Bennett, K. D., Ramasamy, R., & Honsberger, T. (2013). The effects of covert audio coaching on teaching clerical skills to adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *43*(3), 585-593. doi: 10.1007/s10803-012-1597-6

Bidwell, M. A., & Rehfeldt, R. A. (2004). Using video modeling to teach a domestic skill with an embedded social skill to adults with severe mental retardation. *Behavioral Interventions*, *19*(4), 263-274. doi: 10.1002/bin.165

Browder, D. M., & Bambara, L. (2000). Home and community. In M. E. Snell & F. Brown (Eds.) *Instruction of students with severe disabilities* (pp. 543-589). Upper Saddle River, NJ: Merrill Prentice Hall.

Browder, D. M., Snell, M. E., & Wildonger, B. A. (1988). Simulation and community-based instruction of vending machines with time delay. *Education and Training in Mental Retardation*, *23*(3), 175-185. doi: 23878500

Charlop-Christy, M. H., Le, L., & Freeman, K. A. (2000). A comparison of video modeling with in vivo modeling for teaching children with autism. *Journal of Autism and Developmental Disorders*, *30*(6), 537-552. doi: 10.1023/ 1005635326276

Cihak, D., Alberto, P. A., Taber-Doughty, T., & Gama, R. I. (2006). A comparison of static picture prompting and video prompting simulation strategies using group instructional procedures. *Focus on Autism and Other Developmental Disabilities*, *21*(2), 89-99. doi: 10.1177/10883576060210020601

Collins, B. C. (2007). *Moderate and severe disabilities; A foundational approach.* Upper Saddle River, New Jersey: Merill Pearson.

Cooper, K. J., & Browder, D. M. (2001). Preparing staff to enhance active participation of adults with severe disabilities by offering choice and prompting performance during a community purchasing activity. *Research in Developmental Disabilities*, *22*(1), 1-20. doi: 10.1016/S0891-4222(00)00065-2

Coşgun Başar, M. (2010). *Özel gereksinimi olan bireylerin okul hayatından iş hayatına geçiş becerilerinin anne-baba görüşlerine göre belirlenmesi* (Unpublished master's thesis). Ankara University, Ankara.

Coulter, G. A., & Grossen, B. (1997). The effectiveness of in-class instructive feedback versus after-class instructive feedback for teachers learning direct instruction teaching behaviors. *Effective School Practices*, *16*(4), 21-35.

Delano, M. E. (2007). Video modeling interventions for individuals with autism. *Remedial and Special Education*, *28*(1), 33-42. doi: 10.1177/07419325070280010401

Eripek, S. (2003). Zekâ geriliği olan çocuklar. In A. Ataman (Eds.), *Özel gereksinimli çocuklar ve özel eğitime giriş* (pp. 153-173). Ankara: Gündüz Education and Publishing.

Felce, D., & Perry, J. (1995). Quality of life: Its definition and measurement. *Research in Developmental Disabilities*, *16*(1), 51-74. doi: 10.1016/0891-4222(94)00028-8

Goodman, J. I., Brady, M. P., Duffy, M. L., Scott, J., & Pollard, N. E. (2008). The effects of "bug-in-ear" supervision on special education teachers' delivery of learn units. *Focus on Autism and Other Developmental Disabilities*, *23*(4), 207-216. doi: 10.1177/1088357608324713

Gürsel, O., Ergenekon, Y., & Batu, E. S. (2007). Gelişimsel geriliği olan bireylere okuldan işe geçiş becerilerinin kazandırılmasına ilişkin öğretmenlerin ve yöneticilerin görüşleri. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, *7*(2), 61-84.

Haring, T. G., Breen, C. G., Weiner, J., Kennedy, C. H., & Bednersh, F. (1995). Using videotape modeling to facilitate generalized purchasing skills. *Journal of Behavioral Education*, *5*(1), 29-53.

Haring, T. G., Kennedy, C. H., Adams, M. J., & Pitts-Conway, V. (1987). Teaching generalization of purchasing skills across community settings to autistic youth using videotape modeling. *Journal of Applied Behavior Analysis, 20*(1), 89-96. doi: 10.1901/jaba.1987.20-89

Kogan, K. L., & Gordon, B. N. (1975). A mother-instruction program. *Child Psychiatry and Human Development*, *5*(3), 189-200.

Kurtoğlu, S. (2015). *Zihinsel yetersizliği olan bireylere bankamatikten para çekme becerisinin öğretiminde bilgisayar destekli video öğretiminin etkililiği* (Unpublished master's thesis). Abant İzzet Baysal University, Bolu.

McDonnell, J., & Ferguson, B. (1989). A comparison of time delay and decreasing prompt hierarchy strategies in teaching banking skills to students with moderate handicaps. *Journal of Applied Behavior Analysis*, *22*(1), 85-91.

McDonnell, J. J., Horner, R. H., & Williams, J. A. (1984). Comparison of three strategies for teaching generalized grocery purchasing to high school students with severe handicaps. *Journal of the Association for Persons with Severe Handicaps, 9*(2), 123-133.

Mechling, L. (2005). The effect of instructor-created video programs to teach students with disabilities: A literature review. *Journal of Special Education Technology, 20*(2), 25.

Mechling, L. C., Gast, D. L., & Barthold, S. (2003). Multimedia computer-based instruction to teach students with moderate intellectual disabilities to use a debit card to make purchases. *Exceptionality*, *11*(4), 239-254.

Mechling, L. C., Pridgen, L. S., & Cronin, B. A. (2005). Computer-based video instruction to teach students with intellectual disabilities to verbally respond to questions and make purchases in fast food restaurants. *Education and Training in Developmental Disabilities*, *40*(1), 47-59.

Morse, T. E., & Schuster, J. W. (2000). Teaching elementary students with moderate intellectual disabilities how to shop for groceries. *Exceptional Children*, *66*(2), 273-288. doi: 10.1177/001440290006600210

Nietupski, J., Clancy, P., & Christiansen, C. (1984). Acquisition, maintenance and generalization of vending machine purchasing skills by moderately handicapped students. *Education and Training of the Mentally Retarded*, *19*(2), 91-96.

Nikopoulos, C. K., & Keenan, M. (2007). Using video modeling to teach complex social sequences to children with autism. *Journal of Autism and Developmental Disorders*, *37*(4), 678-693.

Ottley, J. R., & Hanline, M. F. (2014). Bug-in-ear coaching impacts on early childhood educators' practices and associations with toddlers' expressive communication. *Journal of Early Intervention*, *36*(2), 90-110. doi: 10.1177/1053815114563614

Pol, R. A., Iwata, B. A., Ivancic, M. T., Page, T. J., Neef, N. A., & Whitley, F. P. (1981). Teaching the handicapped to eat in public places: Acquisition, generalization and maintenance of restaurant skills. *Journal of Applied Behavior Analysis*, *14*(1), 61-69. doi: 10.1901/jaba.1981.14-61

Schalock, R. L., Brown, I., Brown, R., Cummins, R. A., Felce, D., Matikka, L., ... Parmenter, T. (2002). Conceptualization, measurement, and application of quality of life for persons with intellectual disabilities: Report of an international panel of experts. *Mental Retardation*, *40*(6), 457-470.

Scheeler, M. C., Congdon, M., & Stansbery, S. (2010). Providing immediate feedback to co-teachers through bug-in-ear technology: An effective method of peer coaching in inclusion classrooms. *Teacher Education and Special Education*, *33*(1), 83-96. doi: 10.1177/0888406409357013

Scheeler, M. C., & Lee, D. L. (2002). Using technology to deliver immediate corrective feedback to preservice teachers. *Journal of Behavioral Education*, *11*(4), 231-241. doi: 10.1023/A:1021158805714

Scheeler, M. C., Macluckie, M., & Albright, K. (2010). Effects of immediate feedback delivered by peer tutors on the oral presentation skills of adolescents with learning disabilities. *Remedial and Special Education*, *31*(2), 77-86. doi: 10.1177/0741932508327458

Scheeler, M. C., McKinnon, K., & Stout, J. (2012). Effects of immediate feedback delivered via webcam and bug-in-ear technology on preservice teacher performance. *Teacher Education and Special Education*, *35*(1), 1-14. doi: 10.1177/0888406411401919

Scheeler, M. C., Ruhl, K. L., & McAfee, J. K. (2004). Providing performance feedback to teachers: A review. *Teacher Education and Special Education*, *27*(4), 396-407. doi: 10.1177/088840640402700407

Sitlington, P. L., Neubert, D. A., & Clark, G. M. (2010). *Transition education and services for students with disabilities.* Upper Saddle River, New Jersey: Merill Pearson.

Sprague, J. R., & Horner, R. H. (1984). The effects of single instance, multiple instance, and general case training on generalized vending machine use by moderately and severely handicapped students. *Journal of Applied Behavior Analysis*, *17*(2), 273-278. doi: 10.1901/jaba.1984.17-273

Steere, D. E., Rose, E. D., & Cavaiuolo, D. (2007). *Growing up: Transition to adult life for students with disabilities*. Boston: Pearson College Division.

Wehmeyer, M. L., & Schwartz, M. (1998). The self determination focus of transition goals for students with mental retardation. *Career Development for Exceptional Individuals*, *21*(1), 75-86. doi: 10.1177/088572889802100107

Wissick, C. A., Lloyd, J. W., & Kinzie, M. B. (1992). The effects of community training using a videodisc-based simulation. *Journal of Special Education Technology*, *11*(4), 207-222. doi: 10.1177/016264349201100405

Woodward, J., ve Reith, H. (1997). A historical review of technology research in special education. *Review of Educational Research, 67*(4), 503-536.

Yeaton, W. H., & Bailey, J. S. (1978). Teaching pedestrian safety skills to young children: an analysis and one-year follow up. *Journal of Applied Behavior Analysis*, *11*(3), 315-329. doi: 10.1901/jaba.1978.11-31

Appendix 1.

PAYING THE ELECTRIC BILL

(For bank or electric paying center)

Student Name-Surname:

Researcher Name-Surname:

Sec. No	Task Analysis	../../..	../../..	../../..
1	He/She enters the building to pay the bill.			
2	Tells the person at the beginning of the numerator he wants to pay the bill.			
3	Checks by taking number from the numerator.			
4	As can see the signs on the cashier he/she stands on the hall.			
5	He keeps track of whether his number is on the board.			
6	If the number is not on the board, he/she will wait until the number is written.			
7	He/she decides which cashier he/she will go to when his number is lighted.			
8	He/she comes in front of the cashier.			
9	He/she greets officer by saying “hello”.			
10	He/she gives the bill.			
11	He/she says he/she wants to pay.			
12	He/she gives the money in the amount that is not less than the amount of money in the bill.			
13	He/she expects the officer to complete the process.			
14	Takes the remaining money and receipt.			
15	He/She says ‘‘Thank you’’.			
16	He/she leaves the building where the payment is made.			

Appendix 2.

ORDERING FOOD AND/OR DRINKS AT A RESTAURANT

Student Name-Surname:

Researcher Name-Surname:

Sec. No	Task Analysis	../../..	../../..	../../..
1	Enters the restaurant and sit at a table that is empty and / or shown by the waiters.			
2	He looks at the menu on the table and selects food and drink.			
3	Waits for the waitress to come over.			
4	Tells, the waiter who comes next, the food and drink and / or points with his finger.			
5	Waits for the food and / or drink he/she has ordered.			
6	Thanks to the waiter who brought the order.			
7	Eat and / or drink food and / or drink.			
8	Tells her/his choice if the waitress who comes to pick up the empties wants to offer her/him tea.			
9	If the preference is favorable, he/she waits for the tea to arrive.			
10	Thanks to the waiter who brought the tea.			
11	Drinks the tea.			
12	Checks the desk number and leaves there.			
13	He goes to the cash-point and tells the desk number.			
14	Gets the amount of money out his pocket that is not less than the amount of money.			
15	Gives the money to the officer standing in the cash-point.			
16	Leave the restaurant.			

Appendix 3.

USING THE TRAM

Student Name-Surname:

Researcher Name-Surname:

Sec. No	Task Analysis	../../..	../../..	../../..
1	He/she comes to tram stop.			
2	Get the ticket out of his pocket.			
3	He/she enters the queue.			
4	Shows his ticket to pikeman.			
5	He/she passes through tourniquet.			
6	He/she puts his ticket in his/her pocket back.			
7	He/she waits tram.			
8	Checks whether the tram is the right tram to go.			
9	When the tram that he/she will use is approaching, approaches the gates.			
10	By giving way to departing passengers he/she gets on the tram.			
11	Checks if there is a place on the tram.			
12	If there is a place to sit, sit down; or find a place he/she can travel safely in a standing position.			
13	When the stop is announced, closes the doors.			
14	When the tram stops, if there is a queue, with using it leaves the tram without disturbing the departing passengers.			
15	He/she leaves the stop.			