

An Analysis of Studies Conducted Video Modeling in Teaching Social Skills

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Abstract

The video model method is an application with evidence basis, defined as watching and taking as a model the target behavior exhibited by the person on the videotape. The video model method is a teaching method that can be used in teaching many different skills to children displaying normal development and to children with developmental disabilities. This study aimed to examine and analyze studies in which the video modeling was used in teaching social skills to individuals with developmental disabilities. The present study is a qualitative document analysis. Documents (research) which were gathered according to certain criteria were analyzed by the authors. A total of 21 studies, 2 of which were conducted in Turkey, that met the criteria offset by the present study were analyzed according to the certain criteria. The reason why subjects in 3-15 years of age diagnosed with autism and Asberger's syndrome were selected in 97% of the studies and why social skills were analyzed in 81% of the studies was not explained. In addition, social validity data were collected only in 33% of all studies. This is a quite low rate for the studies focused on teaching of social skills.

Key Words

Video Modeling, Social Skills, Autism, Social Validity.

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Social skills which are defined as observable, definable, and learned behaviors that help the individual achieve positive results in a certain situation and be accepted by society are taught in a systematic manner using specific teaching methods (Begun, 1996). Among these methods are direct teaching, social reinforcement, feedback, cooperative learning, providing cues, opportunity teaching, shaping, modeling, behavioral rehearsal, peer tutoring, social stories, and video modeling (Baker, 2004; Çolak, 2007). Video modeling is one of the effective methods in teaching social skills. At the heart of this method lies the theory of learning through observation. This theory is based on the suggestion that individuals gain knowledge and learn skills by just observing the behaviors displayed by other individuals without any need for a behavior training or learning-by-doing (Akmanoğlu, 2008; Nikopoulos, & Keenan, 2006). Gabriel Tarde was the first researcher to establish the importance of learning through observation and learning from models for the development of human behaviors (Bandura, & Walters, 1963). The pioneers of this theory were N. E. Miller, J. Dollard and A. Bandura (Bandura, & Walters, 1963; Nikopoulos, & Keenan, 2006).

In the learning through observation theory, two fundamental processes are discussed: modeling and imitating (Charlop-Christy, Le, & Freeman, 2000). These two processes also form the basis of teaching with the video model which is an evidence-based practice, defined as watching and taking as model the target behavior exhibited by the person on the videotape (Akmanoğlu, 2008; Bellini, Akullian, & Hopf, 2007; Charlop-Christy et al., 2000; Nikopoulos, & Keenan, 2006; Sansosti, & Powell-Smith, 2008). Teaching with video modeling is effective in the teaching of many different skills and can be used for both children showing normal development and children with developmental disabilities. In recent years, the literature has indicated that the video model has been successfully used in teaching various social, academic, and functional skills to individuals with developmental disabilities.

Teaching with the video model may be performed in four ways: (i) modeling with video, (ii) feedback with video, (iii) cue with video, and (iv) computer-aided video teaching (Mechling, 2004). *Modeling with video* is the process where the individual watches the video recordings in which all sub-steps of a skill is displayed by a peer, adult, or herself/himself/ and then repeats these behaviors (Banda, Matuszyny, & Turkan, 2007; Charlop-Christy et al., 2000). In *feedback with video*, the

individual watches her/his own performance in a non-edited videotape; may notice her/his appropriate and inappropriate behaviors; may discuss these behaviors with the practitioner; and make adjustments in future performance (Maione, & Mirenda, 2006; Mechling, 2004). Video modeling which provides individuals with the opportunity to carry out the skill step immediately on the basis of the cue given by the video and which actively involves the individual in the process is called *cue with video* (Payne, & Antonow, 1982; Mechling, 2004), implementations in which texts, graphics, animations, sound, music, slides, films and movie recordings are presented within a single system are called *computer aided video training* (Halisküçük, 2007; Mechling, 2005; Wissick, 1996).

Although forms of teaching with the video model vary, video model practices are comprised of the stages of defining and choosing target behaviors; obtaining required permissions; meeting parents and observing the child; selecting and training the subjects to be filmed; preparing the tools and equipment and the environment; recording the target behaviors; editing the video; collecting the baseline data; showing the video; collecting the intervention data and creating the graphics; planning the maintaining and generalization process; collecting data; and collecting inter-observer reliability, treatment fidelity and social validity data (Banda et al., 2007, p. 48). Social validity is very important in teaching social skills. Researchers and practitioners hope that behavioral aims they choose to study are meaningful, the methods they improve are suitable and effects that are improved are important for people and the society (Fawcett, 1991). But, desired changes in the behaviors are important for the individuals and society as well as the practitioners not to be left to the return of the hope (Vuran, & Sönmez, in press).

There are a few review studies relating to the video modeling in the literature. The studies were examined according to video modeling types (Delano, 2007) and model (McCoy, & Hermansen, 2007) in terms of research conducted on autistic children. Research about people having growth deficiencies (Mechling, 2005) were examined according to video modeling types. The present study differs from other review studies due to some factors: First, this study analyzed video model practices used in social skills training in terms of details such as subjects, environment, research model, whether or not maintaining and generalization were targeted; in terms of fundamental categories such as social validity of the social skills selected for training; reasons for such selection;

and the practice and its effectiveness. Secondly, it was based on studies conducted with individuals diagnosed with autism and other individuals with developmental disabilities. Finally, this study included studies conducted in Turkey. This study aimed to analyze -within the categories specified in the following study questions- the studies conducted using the teaching with the video model in social skills training:

*What are the subject characteristics in the studies?

*In which environments were the social skills training conducted in the studies?

*What were the social skill/s being taught (dependent variable/s) and reasons for selection?

*What kinds of stimuli were used in the practices?

*What are the characteristics of the models used as video models? What kind of video modeling was used? How effective was it?

*In the practices, how the stimuli were presented to the subjects before and after the behavior?

*Which research model was used? Were maintaining and generalization, interobserver reliability, treatment fidelity data collected? What results were obtained?

*Was social validity data collected? With which method was it collected? Which dimension of social validity did the collected data include?

Method

Research Model

This study is a qualitative document analysis. Each document collected while working on a specific field is a data source (Patton, 2002). In the study, research reports were analyzed in order to establish the nature of the studies conducted in social skills training using the video model.

Study Field

Specific criteria were taken into account when determining the studies to be analyzed in the scope of the present study. The first two criteria were that the studies had to be conducted between the years 2000-2008 and to be published in a peer reviewed journal. Additionally, studies conducted in Turkey were reviewed using the same key words. These

fundamental criteria were followed by the criteria that the studies had to be experimental, dependent variable had to involve one or more social skills, primary independent variable had to be teaching with the video model, and subjects had to be diagnosed with autism, mental deficiency or developmental retardation. Nineteen studies which were conducted in other countries and met the above criteria were accessed. No studies conducted in Turkey met the criteria of being published in a peer reviewed journal. However, two dissertation studies that were argued in front of a jury were found. These studies were also included in the analysis as they met the other criteria. Thus, 19 papers and 2 dissertations were considered in the scope of the present study, indicated with an asterisk in the references section.

Data Collection

In the literature review process, electronic databases were scanned on the internet (EBSCO-Host, Google, Center of National Dissertations) using the key words determined in line with the objectives of the study. Thus, the studies conducted in Turkey and elsewhere on social skills training given by using the video modeling to the individuals with developmental disabilities were analyzed. Twenty one studies in which the video modeling were used in social skills training was accessed, 2 of which were conducted in Turkey and 19 elsewhere.

The following key words were used when scanning articles; video, video modeling, video model, autism, developmental disabilities, mental disability, mental retardation, social skills and social skill training/teaching.

Data Analysis

Numbers were assigned to the studies in the scope of the study field. Then, 11 categories were determined by the researchers: *(i)* subjects and characteristics, *(ii)* environment, *(iii)* assessment tools used in determination of the subject's behavioral characteristics, *(iv)* social skill being taught and reasons for selection, *(v)* stimuli used in the studies, *(vi)* characteristics of the models used in the study, *(vii)* how the stimuli were presented to the subjects before and after the behavior, *(viii)* research model used, *(ix)* maintaining and generalization, *(x)* interobserver reliability, treatment fidelity, and *(xi)* social validity data. Both researchers determined the categories independent of each other. Then, "environ-

ment” was added to the categories that had been determined jointly by the researchers. The data relating to each category was recorded on a table with thirteen columns; twelve for the relevant information of each category and the other for researcher comments. The researchers read the studies independently according to the common categories formed; took the necessary notes; and made comments relating to the relevant category. Authors came together and recorded all data gathered from all categories in detail. These comments are discussed in the discussion section of this study with supporting references.

Findings

The study data discussed in this study was tabulated according to the categories investigated. Categories of “Environment, stimulus used in research, representation manner of stimulus in pre-behavioral and post-behavioral period” could not be ranked due to space inadequacy in the table. However, these findings were reported in detail with the findings of categories in table. A short analysis of the studies on social skills training using the video model is shown in Table 1.

Table 1.
Short Analysis of the Studies on Social Skills Training Using the Video Modeling

Source	Social Skill Studied	Reason for Choosing The Social Skill	Subject Characteristics	Independent Variable	Assessment Tools Used	Research Model	Generalization and Maintaining	Social Validity	Reliability Data
Charlop-Christy, Le, & Freeman, 2000	*Identifying feelings *Greeting *Spoken language *Cooperative play *Social play skill	Seeking the views of teacher, parents and psychologists, included in each child's curriculum and based on performance /	5 children in 7-11 years of age range and diagnosed with autism	In vivo modeling and video modeling	Peabody Picture Word Test Letter IQ Test Vineland Adaptive Behavior Test South California Development test	Multiple baseline design across subjects	Generalization across person and environments (+) Maintaining (-)	(-)	Interobserver Reliability (+) Treatment fidelity (+)
Schreibman, Whalen, & Stahmer, 2000	*Reducing inappropriate transition behaviors	No explanation	3 boys in 3-6 years of age range and diagnosed with autism	Video priming	Various Skills Test Vineland Adaptive Behavior Test Early Childhood Autism Assessment Test	Multiple baseline design across subjects	Generalization across environments (+) Maintaining 1 month later (+)	(-)	Interobserver Reliability (+) Treatment fidelity (-)

Sheer et al., 2001	*Conversation/ dialogue skills	1. Deficiency in conversation skills 2. The families who want their children to acquire the skill of answering simple questions during conversation	5 boys in 5-11 years of age range and diagnosed with autism	Video model practices containing peer model Video self - modeling	Peabody Picture Word Letter Stanford-Binet IQ Tests Early Childhood Autism Assessment Test Vineland Adaptive Behavior	Multiple baseline design across subjects	Generalization across environments, questions and people (+) maintaining 2 months later (+)	(-)	Interobserver reliability (+) Treatment fidelity (-)
Charlop-Christy, & Daneschvar, 2003	Acquiring perspective skills	Limited Explanation It was only stated that the children did not possess this skill.	4 boys in 6-9 years of age range and diagnosed with autism	Video model practices containing familiar adult as a model	Peabody Picture Word Test	Multiple baseline design across subjects	Generalization across stimuli (+) Maintaining immediately after training sessions (+)	(-)	Interobserver reliability (+) Treatment fidelity (-)
D'Ateno, Mangiapanelli, & Taylor, 2003	*Appropriate motor and verbal play skills	No explanation	A 3 years and 8 months old girl with autism	Video model practices containing familiar adult as a model	Peabody Picture Word Test	Multiple baseline design across behaviors	Generalization (-) Maintaining (-)	(-)	Interobserver reliability (+) Treatment fidelity (-)

Nikopoulos, & Keenan, 2003	*Initiating social communication	No explanation	7 children in age range and diagnosed with autism	Video model practices containing familiar peer, familiar adult and unfamiliar adult as models	Not stated Performance related information given.	Multiple treatment design for 6 children, AB model for 1 child	Generalization across toys, environments and peers (+) Maintaining after 1 and 2 months (+)	(+)	Interobserver reliability (+) Treatment fidelity (-)
Wert, & Neisworth, 2003	*Asking for an action or object by requesting	No explanation	4 children in 3-6 years of age range and diagnosed with autism	Video self-modeling	Not stated Performance related information given.	Multiple baseline design across subjects	Generalization (-) Maintaining 2 to 6 weeks later (+)	(-)	Interobserver reliability (+) Treatment fidelity (+)
Bidwell, & Rehfeldt, 2004	*Offering coffee to a peer	No explanation	3 adults in 33 and 72 years old age range and having severe mental deficiency	Video model practices containing familiar peer as a model	Not stated	Multiple baseline design across subjects	Generalization across environments, tools-equipment and people (+) maintaining 1 month later (+)	(-)	Interobserver reliability (+) Treatment fidelity (-)
	*Sitting next to peer and drinking coffee together				Performance related information given.				

Buggey, 2005	*Initiating communication *Reducing inappropriate behaviors	No explanation	5 children in 5–11 years old age range and diagnosed with autism	Video self-modeling	Wechsler IQ Test Woodcock Johnson Achievement Test Peabody Picture-Word Test	First and second study: Multiple baseline design across subjects Third study: Multiple baseline design across behaviors	Generalization (-) Maintaining (+) After 10 days	Interobserver reliability (+) Treatment fidelity (-)
Gena, Couloura, & Kymissis, 2005	Expressing sympathy, dislike and admiration with appropriate verbal expressions, tone of voice and gesture-mimics	No explanation	3 children (2 girls, 1 boy) in 3–5 years of age range and diagnosed with autism	Video model practices containing peer model + reinforcement Practices in which invivo modeling and error correction methods are used + reinforcement	Peabody Picture Word Test Stanford-Binet IQ Test Vineland Adaptive behavior test	Multiple baseline design across subjects	Generalization across people (+) Maintaining data after 1 and 3 months (+)	Interobserver reliability (+) Treatment fidelity (+)
Graetz, Mastropieri, & Scruggs, 2006	*Reducing inappropriate behaviors (Winging hands, rocking and temper tantrums)	Behavior problems being very intense and these behaviors causing problems in the classroom	A 13-year-old child diagnosed with autism	Video self-modeling	Not stated Performance related information given.	Not stated	Generalization (-) Maintaining (-)	Interobserver reliability (-) Treatment fidelity (-)

Maione, & Miranda, 2006	*Verbal social interaction skills	No explanation	A 5-year-old child diagnosed with autism, and 2 peers in 5-7 age range.	Video model practices containing two adult models Video model + Feedback + cue	Clinical Development of Language (Preschool period)	Multiple baseline design across behaviors	Generalization (-) Maintaining after 7-16-18 days (+)	(-)	Interobserver reliability (+) Treatment fidelity (+)
Bellini, Akullian, & Hopf, 2007	*Engaging in social interaction with peers	No explanation	2 children in 4-5 years of age range and diagnosed with autism	Video self-modeling	Not stated Performance related information given.	Multiple baseline design across subjects	Generalization (-) Maintaining after 2 weeks (+)	(+)	Interobserver reliability (+) Treatment fidelity (+)
Bernad-Ripoll, 2007	*Recognizing and becoming aware of own emotions *Giving a response against each emotion	No explanation	A male student 9 years and 8 months old and diagnosed with Asperger syndrome	Video self-modeling + social stories	Asperger's Syndrome diagnosis according to DSM-IV criteria	AB model	Generalization to different situations (+) Maintaining (-)	(-)	Interobserver reliability (-) Treatment fidelity (-)

Kroeger, Schultz, & Newsom, 2007	-Giving a response to interaction -Inviting peer for interaction, -Maintaining social interaction	Subjects' interaction and communication deficiency	25 children in 4-6 years old age range and diagnosed with autism	Direct teaching and adaptation activities program containing video model practices containing peer models	Gilliam Autism Assessment Scale Fundamental Language and Learning skills Scale Interaction Observation Coding Key	Pretest-posttest single group	Generalization (-) Maintaining (-)	Interobserver reliability (+) (-)
Nikopoulos, & Keenan, 2007	*Initiating social communication *Interactive play	No explanation	5 Children in 6.5-7.5 years old age range and diagnosed with autism	Video model practices containing peer model	Childhood Autism Assessment Scale	Multiple baseline design across subjects in first experiment AB model in second experiment	Generalization across people (+) Maintaining after 1-2 months (+)	Interobserver reliability (+) Treatment fidelity (-)
Patterson, & Arco, 2007	*Appropriate motor and verbal play behaviors	No explanation	4 boys in 6-9 years old age range and diagnosed with autism	Video model practices containing an adult model	Not stated	Multiple baseline design across behaviors	Generalization across tools-equipment (+) Maintaining after 1 week (+)	Interobserver reliability (+) Treatment fidelity (-)

Akmanoğlu, 2008	*Avoiding abduction attempts by strangers with bad intentions	No explanation	3 children in 6-11 years old age range	Graduated guidance with video modeling	Leiter IQ Test	Multiple probe across subjects design	Generalization across environments (+) Maintaining data after 1, 7, 28 days (+)	Interobserver reliability (+) Treatment fidelity (+)
Emecen, 2008	*Thanking	Views of teacher and school staff were sought and priority skills were selected.	2 students (a boy and a girl) in 11-13 years old age range and diagnosed with mental deficiency	Cognitive process approach and Direct teaching containing video model practices containing peer model	Interview Form, Social Skills Checklist, Wisc-III IQ Test, Peabody Picture-Word Test	Adapted alternating treatment design	Generalization to different tools, environment and people (+) Maintaining 5 and 35 days later (+)	Interobserver reliability (-) Treatment fidelity (+)
Sansosti, & Powell-Smith, 2008	*Having a conversation *Maintaining communication *Actively participating in play activity	No explanation	3 boys in 6.6 - 10.6 years old age range and diagnosed with Asperger's Syndrome	Social stories presented via the computer and video model practices containing a peer as model	Reynolds Intellectual Assessment Scale Wechsler IQ Test Verbal and Written Language Scale	Multiple baseline design across subjects	Generalization across environments (+) Maintaining after 2 weeks (+)	Interobserver reliability (+) Treatment fidelity (+)
Scattone, 2008	*Establishing eye contact; *Smiling *Initiating communication	No explanation	A 9 year old boy with Asperger's Syndrome	Video practice containing two adults + social stories	Kaufmann Brief Intelligence Scale Wechsler Individual Achievement Test	Multiple baseline design across behaviors	Generalization across environments (+) Maintaining (-)	Interobserver reliability (+) Treatment fidelity (+)

Subjects and their Characteristics

80 subjects were studied within the scope of the studies on teaching social skills using the video model with subjects with developmental disabilities. An analysis of the subjects' characteristics in terms of diagnosis, age and gender showed that 74% had a diagnosis of autism, 9% of mental deficiency, 5% of Asperger's syndrome, 4% of high functioning autism, and 8% of autism and mental retardation. On examining the distribution of child and adolescent subjects according to age groups, it was observed that 53% were in the 3-6 years old age group, 20% in 6-9 years old age group, 19% in 9-12 years old age group and 5% in 12-15 years old age group. There is not any study conducted with adult subjects (Bidwell, & Rehfeldt, 2004). 84% of the subjects were male, 16% were female.

Environment

The studies were also examined in terms of the environment in which the training was provided. It was concluded that 76% of the studies were conducted in environments such as schools, medical centers (Akmanoğlu, 2008; Bellini et al., 2007; Bidwell, & Rehfeldt, 2004; Bugghey, 2005; Charlop-Christy, & Daneshvar, 2003; Charlop-Christy et al., 2000; D'Ateno et al., 2003; Emecen, 2008; Graetz et al., 2006; Kroeger et al., 2007; Nikopoulos, & Keenan, 2003, 2007; Paterson, & Arco, 2007; Sansosti, & Powell-Smith, 2008; Scattone, 2008; Sherer et al., 2001), and rehabilitation centers. 24% of the studies were conducted at subject's home (Bernad-Ripoll, 2007; Gena et al., 2005; Maione, & Mirenda, 2006; Schreibman et al., 2000; Sherer et al., 2001; Wert, & Neisworth, 2003). Attention was paid to ensure that in all practices the environment in which the videos were recorded was the same to those in which the assessment was made.

Selected Social Skills and Reasons for Selection

The studies were analyzed in terms of the social skill being taught. It was observed that 19% of the studies focused on conversation/dialogue skills (Charlop-Christy et al., 2000; Sansosti, & Powell-Smith, 2008; Scattone, 2008; Sherer et al., 2001); 10% on the skills of understanding emotions and giving appropriate response to emotions (Bernad-Ripoll, 2007; Charlop-Christy et al., 2000); 19% on initiating communication skills (Bugghey, 2005; Charlop-Christy et al., 2000; Nikopoulos, &

Keenan, 2003, 2007); 19% on social interaction skills (Bellini et al., 2007; Bidwell, & Rehfeldt, 2004; Kroeger et al., 2007; Maiona, & Mirenda, 2006); 19% on the teaching of social and interactive play skills (Charlop-Christy et al., 2000; D'Ateno et al., 2003; Nikopoulos, & Keenan, 2007; Paterson, & Arco, 2007); and 14% on reducing inappropriate behaviors (Buggey, 2005; Graetz et al., 2006; Schreibman et al., 2000). One study was also found on each of the following subjects: taking perspective (Charlop-Christy, & Daneshvar, 2003); asking for an action or object by requesting (Wert, & Neisworth, 2003); showing sympathy, admiration or dislike by giving an appropriate response (Gena et al., 2005); thanking and sharing (Emecen, 2008); and skill of avoiding abduction attempts by strangers with bad intentions (Akmanoğlu, 2008).

The reasons of the selection of the specific social skills to be taught in the scope of these studies were collected in two sub-categories: the social skills which the family, teacher and psychologists want the subjects to acquire and the social skills for which the reason for selection was not stated.

In 19% of the studies, the social skills aimed to be taught were determined according to the family, teacher and psychologists' view of which skills the individuals lacked (Charlop-Christy et al., 2000; Graetz et al., 2006; Emecen, 2008; Sherer et al., 2001) while in 81% of the studies the reason for choosing the social skills aimed to be taught was not stated. In the second group of studies, first the skills to be taught were determined and then subjects lacking that skill were included in the study.

Stimuli

In 52% of the studies on the subject of teaching social skills to individuals with developmental disabilities, it was stated that toys appropriate to the developmental age of the child were used as stimuli (Bellini et al., 2007; Charlop-Christy et al., 2000; D'Ateno et al., 2003; Emecen, 2008; Gena et al., 2005; Kroeger et al., 2007; Maione, & Mirenda, 2006; Nikopoulos, & Keenan, 2003, 2007; Paterson, & Arco, 2007; Wert, & Neisworth, 2003). In all studies in which toys were used as stimuli, it was stated that "attention was paid to choose the toys that were familiar to the child and appropriate to the child's developmental age." To maximize the effect of the independent variable, samples were not taught how to play with these toys except for the studies in which play skills were taught.

Video Model Practices and Models and their Effectiveness

Studies related to video model practices were examined in three categories: comparative studies, studies investigating the effectiveness of different teaching methods provided with the video model and the studies investigating the effectiveness of only one video model practice. In 24% of the studies, the effectiveness of the video modeling in social skills training was compared to those of different methods. Whilst in one of these studies, Charlop-Christy and friends (2000) compared *in vivo* model and video model practices in terms of their effectiveness in social skill training; in another study, Gena and friends (2005) made a comparison between the practices in which video model and reinforcement were used together and the practices in which *in vivo* model, error correction and reinforcement were used together. Sherer and friends (2001) compared the video model practices containing peers as models with the video model practices containing the participant him/herself as the model. Whilst Charlop-Christy and friends (2000) concluded that the video model was effective in the acquisition and generalization of the target skills in a shorter period of time and that it was more efficient in terms of time and cost; Gena and friends (2005) were not able to find a significant difference between the effectiveness of the practices. Sherer and friends (2001) concluded that in the intervention condition in which the subjects her/himself took part as the model, the individual acquired the target skill in a shorter time. In one of the studies included in the comparative studies category, the direct teaching method which included video model practices was compared with the adaptation activities program (Kroeger et al., 2007) and in another study in this category with the cognitive process approach (Emecen, 2008). Whilst, Kroeger and friends (2007) reached the conclusion that children in the direct teaching group were more successful in acquiring the targeted social skills compared to children in the play activities group; Emecen (2008) arrived at the conclusion that while helping samples to gain social skills, direct teaching approach was more efficient compared to the cognitive process approach in terms of total teaching duration and number of incorrect response.

In 24% of the studies, the effects of teaching methods presented along with the video modeling on social skill teaching were investigated. Bernad-Ripoll (2007); Sansosti and Powel-Smith (2008) and Scattone (2008) examined the effectiveness of social stories presented along with

video model practices on social skill teaching; Akmanoğlu (2008) examined the effectiveness of graduated guidance presented with video model practice on social skill teaching whilst Maione and Mirenda (2006) examined the effectiveness of practices in which the video model, feedback with video and cue were presented together. It was observed that all of the studies discussed in this category were effective in teaching social skills to individuals with developmental disabilities.

In the analysis of these studies -in which the effectiveness of video model intervention was established- by both researchers separately, repeatability of intervention processes was also questioned. Researchers found that 80% of the practices were repeatable.

In 52% of the studies, the effectiveness of only one video model practice was investigated. These studies were analyzed in four categories in terms of the models used in the video model practices. Within the scope of the category of the studies investigating the effectiveness of video model practices only; the studies investigating the effectiveness on social skill teaching of practices which contained the peer, adult or subject her/himself (video self-modeling) as the model or which the subject watched from her/his own perspective (video priming) were examined and analyzed in four categories according to the model used in the video model practices. It was observed that in 38% of the studies peers were used as the model. Two of these studies in which peer models were used, the peers familiar to the subjects were used (Bidwell, & Rehfeldt, 2004; Nikopoulos, & Keenan, 2003) and in one other study in this scope the models were unfamiliar to the subjects (Sherer et al., 2001). Whilst in 5 of the studies, no information was given as to whether or not the subjects knew the peers who were the models (Emecen, 2008; Gena et al., 2005; Kroeger et al., 2007; Nikopoulos, & Keenan, 2007; Sansosti, & Powell-Smith, 2008).

It was observed that in 33% of the studies, adults were used as the model. From these video model practices containing adults as the model; 4 used adults familiar to the subjects (Charlop-Christy, & Daneshvar, 2003; Charlop-Christy et al., 2000; Nikopoulos, & Keenan, 2003; Scatone, 2008), 3 used adults unfamiliar to the subjects (D'Ateno et al., 2003; Maione, & Mirenda, 2006; Paterson, & Arco, 2007)

In 29% of the studies, the subjects themselves took part as models (Bellini et al., 2007; Bernad-Ripoll, 2007; Buggey, 2005; Graetz et al., 2006;

Sherer et al., 2001; Wert, & Neisworth, 2003). Only one video model study was found in which the person watched from her/his own perspective (video priming) (Schreibman et al., 2000). The studies demonstrated that the video model practices which contained peer, adult or subject him/herself as the model or which the person watched from their own perspective were effective in teaching social skills to individuals with developmental disabilities.

In video model practices, the model may either display the target behavior with very slow and heavy steps or in a natural manner (Nikopoulos, & Keenan, 2006). It was observed that the video model practices in which the model displayed the target behavior with very slow and heavy steps were used in only one of the studies assessed within the scope of the present study (Charlop-Christy et al., 2000).

Presentation of the Stimuli to the Subjects before and after the Behavior

It was observed that whilst in some of the studies using video model practices, directives such as "Now you do the same as in the video!" were presented to the subjects prior to the behavior, in others such stimuli was not presented. In only one of the studies using video model practices in teaching social skills to individuals with developmental disabilities, the directive "let's do the same as you watched in the video!" was presented to the subject prior to the behavior (Charlop-Christy et al., 2000). However, in the other studies no stimulus which reminded the subjects of the video or the images viewed was presented prior to the behavior; rather, only skill directives appropriate to the target behavior were presented.

The studies were also examined in terms of presenting of stimuli following the behavior. It was concluded that in 19% of the studies, the subjects' correct responses during the practice were reinforced (Akmanoglu, 2008; Bernad-Ripoll, 2007; Gena et al., 2005; Nikopoulos, & Keenan, 2003), whilst in 81% they were not. In the studies in which the correct responses during the practice were not reinforced, subjects were reinforced only when they directed their attention to the screen and generally verbal, symbol, food and activity reinforcers were used.

Research Model Used in the Study

Among the studies investigating the effectiveness of the video modeling in the teaching of social skills to individuals with developmental dis-

abilities, 57% of the studies used multiple baseline design across subjects (Akmanoğlu, 2008; Bellini et al., 2007; Bidwell, & Rehfeldt, 2004; Buggey, 2005; Charlop-Christy, & Daneshvar, 2003; Charlop-Christy et al., 2000; Gena et al., 2005; Nikopoulos, & Keenan, 2007; Sansosti, & Powell-Smith, 2008; Schreibman et al., 2000; Sherer et al., 2001; Wert, & Neisworth, 2003) while 24% used multiple baseline design across behaviors (Buggey, 2005; D'Ateno et al., 2003; Maione, & Mirenda, 2006; Paterson, & Arco, 2007; Scattone, 2008), 14% used the AB design (Bernad-Ripoll, 2007; Nikopoulos, & Keenan, 2003; Nikopoulos, & Keenan, 2007), 5% used multiple probe across subjects (Nikopoulos, & Keenan, 2003) and 5% used adaptive alternating treatment design (Emecen, 2008). Only one study was found to investigate the effectiveness of video model practices on a group and the data in this study were not analyzed by using pre-test and post-test data (Kroeger et al., 2007). In the study conducted by Graetz and friends (2006), no information was provided as to which research model was used.

Maintaining and Generalization Process

It was observed that in 71% of the studies, the maintaining process was planned and data were collected related to the process (Akmanoğlu, 2008; Bellini et al., 2007; Bidwell, & Rehfeldt, 2004; Buggey, 2005; Charlop-Christy, & Daneshvar, 2003; Emecen, 2008; Gena et al., 2005; Maione, & Mirenda, 2006; Nikopoulos, & Keenan, 2003, 2007; Paterson, & Arco, 2007; Sansosti, & Powell-Smith, 2008; Schreibman et al., 2000; Sherer et al., 2001; Wert, & Neisworth, 2003). In terms of generalization, it was seen that in 24% of the studies the data were collected pertaining to generalization across people, environments and stimuli (Bidwell, & Rehfeldt, 2004; Charlop-Christy et al., 2000; Emecen, 2008; Nikopoulos, & Keenan, 2003; Sherer et al., 2001); in 19% only across environments (Akmanoğlu, 2008; Sansosti, & Powell-Smith, 2008; Scattone, 2008; Schreibman et al., 2000); in 10% only across people (Gena et al., 2005; Nikopoulos, & Keenan, 2007); in 5% only across stimuli (Paterson, & Arco, 2007); and in 5% only across situations (Bernad-Ripoll, 2007); whilst in 19% generalization and maintaining data was not collected.

In all of the studies, in which maintaining and generalization data were collected, it was stated that at least one of the subjects who participated in the study maintained the skill they acquired after the training ended and generalized it to different environment, people, stimulus and situations.

Social Validity, Inter-Observer Reliability and Treatment Fidelity

Social validity data were collected in 33% of the studies in which video model practices were used in the teaching of social skills to individuals with developmental disabilities. In one of these studies, Sansosti and Powell-Smith (2008) collected social validity data from the subject's teacher using the Intervention Rating Profile; and in another study, Scattone (2008) collected data from the subjects' mothers after the end of the implementation. In the other 5 studies in which social validity data were collected, the data were collected using the social validity form prepared by the researchers themselves. In one of these studies, Akmanoğlu (2008) collected social validity data from the subjects' parents, relating to the importance of the skill taught, the suitability of the teaching method used, and the significance of the change in acquired behavior after the implementation ended by using a form comprising open-ended and Yes/No questions. In another study, Emecen (2008) elicited the information from the class teachers using open-ended questions and questions in which the answer options were Yes I Think So / No I Don't Think So / Undecided.

Bellini and friends (2007) collected social validity data from the subject's teacher, relating to the acceptability of the method. He did it every week during the course of the implementation by using a 4-point Likert type scale ranging from Completely Agree to Completely Disagree. After giving 10 mothers (who did not have any knowledge of the subjects or the study) the necessary information in the scope of their study, Nikopoulos and Keenan (2003) showed video images randomly selected from the baseline level and practice sessions to them and collected social validity data relating to whether or not the subjects displayed the target behavior. And, in the study they conducted in 2007, in addition to the stated social validity data, they asked the mothers to identify the videos the children behaved in a similar way to children who show normal development.

The studies were also examined in terms of interobserver reliability and procedural, it was concluded that inter-observer reliability data were collected in 86% of the studies (Akmanoğlu, 2008; Bellini et al., 2007; Bernad-Ripoll, 2007; Bidwell, & Rehfeldt, 2004; Buggey, 2005; Charlop-Christy et al., 2000; Charlop-Christy, & Daneshvar, 2003; D'Ateno et al., 2003; Gena et al., 2005; Kroeger et al., 2007; Maione, & Mirenda, 2006; Nikopoulos, & Keenan, 2003, 2007; Paterson, & Arco, 2007;

Sansosti, & Powell-Smith, 2008; Scattone, 2008; Sherer et al., 2001; Wert, & Neisworth, 2003), and treatment fidelity data were collected in 43% of the studies (Akmanoğlu, 2008; Bellini et al., 2007; Charlop-Christy et al., 2000; Emecen, 2008; Gena et al., 2005; Maione, & Mirenda, 2006; Sansosti, & Powell-Smith, 2008; Scattone, 2008; Wert, & Neisworth, 2003). Reliability among observers and application reliability data were gathered in 38% of research (Akmanoğlu, 2008; Bellini et al., 2007; Charlop-Christy et al., 2000; Gena et al., 2005; Maione, & Mirenda, 2006; Sansosti, & Powell-Smith, 2008; Scattone, 2008; Wert, & Neisworth, 2003).

Discussion

From the studies in which the video modeling was used in social skills training, 97% were conducted with individuals with developmental disabilities in the 3-15 years old age groups and only one study was conducted with adults (Bidwell, & Rehfeldt, 2004). The limitations of the studies conducted with adults may be eliminated by focusing on the teaching of social skills adult individuals need to acquire.

As the video model practices is a method which describes the target behavior and the steps to be taken to achieve the target behavior clearly and in a visually tangible way, the study samples in 91% of the studies -in which video model practices were used in social skills training- comprised of individuals diagnosed with autism and Asperger's Syndrome.

Although it is more appropriate to teach and demonstrate social skills in a natural environment as social skills enhance the acceptance of the individual by society, 76% of the studies were conducted in artificial and simulated environments such as schools, medical and rehabilitation centers.

Whilst all of the studies assessed focused on the teaching of skills of a positive nature, one study conducted in Turkey differed from the others in teaching the skill of avoiding abduction attempts of strangers with bad intentions.

The video model practices and how the video model is implemented reveal two findings which may lead to new discussions. These are the studies in which different teaching methods were presented along with the video model and reinforcement was used for correct responses. Such studies bring up the question of whether the generated effect is due to

the video model practices or the other methods used along with the video model practices.

Social validity data were collected only in 33% of the studies using the video model practices in social skills training. However, this proportion is rather low for studies focusing on social skills training. Social validity is a very important feature because of the fact that it is an evaluation of the importance of the effects, suitability of the methods that will be applied to achieve the aims and the meaningfulness of the aims that are determined (Wolf, 1978). Social validity can be evaluated in two ways: (i) subjective evaluation, (ii) social comparison (Tekin-İftar, & Kırcaali-İftar, 2001). In addition to these two approaches, if a learned skill continues when the skill is completed and the effects of the application keeps the permanence for a long time, it is possible to talk about social validity (Kennedy, 2005).

Reliability data were collected in only 43% of the studies that were analyzed. This result has brought with it discussions relating to the treatment fidelity. In the studies conducted, many advantages of video model practices were mentioned; however, the limitations were rarely mentioned. Despite all its advantages, this method may have limitations such as causing children with a certain model-adapting and imitating repertoire to also imitate negative (incorrect) models or behaviors; and, in the event of the learnt skills being tried immediately, leading to the learnt skills being forgotten albeit partially, being incorrectly or incompletely repeated.

The most significant limitation of this study is that the teaching durations of the video model practices in the studies were not analyzed. Within the framework of all these discussion, the effectiveness of using the video model practices in teaching social skills to adult individuals with developmental disabilities may be investigated in future studies. Studies which use the video model practices in social skills training for other diagnosis groups rather than individuals with Autism and Asperger's Syndrome diagnosis may be presented as well. Studies which use the video model practices in teaching different social skills other than those frequently targeted such as communication, interaction and play may also be included.

In advanced studies and practices, the effectiveness and efficiency of different video model practices (such as feedback with video, cue with

video, computer aided video teaching) in teaching social skills to individuals with developmental disabilities may be compared. Considering that the reusability of the materials prepared for the video model practices has the important advantage of reducing the cost, characteristics and durations of the re-use areas may be investigated and the cost can be analyzed in future studies. Again, the teaching durations may be investigated in the studies conducted with the video model practices.

In advanced study and practices, the suitability, acceptability and the importance of the generated effects of video model practices in social skill teaching can be assessed by collecting social validity data. Maintaining periods may not be limited to two weeks to two months periods and whether the individuals transfer the skills they learnt to their everyday life can be analyzed both in terms of social validity and generalization.

Since the actual aim of teaching social skills to individuals with developmental disabilities is to help them establish communication and interaction with peers who have normal development and to increase their quality of life, the studies in which social validity data is collected through social comparison may be included in the scope as well. Finally, the limitations of the characteristics of video model practices may be investigated in various subject, environment and deficiency groups.

References/Kaynakça

- *Akmanoğlu, N. (2008). *Otistik çocuklara kötü niyetli yabancı kişilerin kaçırma girişimlerinden kaçınmayı öğretme*. Yayımlanmamış doktora tezi, Anadolu Üniversitesi, Eğitim Bilimleri Enstitüsü, Eskişehir.
- Baker, J. E. (2004). *Social skills training for children ve adolescents with asperger syndrome and social-communication problems*. Kansans: Autism Asperger Publishing.
- Banda, D. R., Matusznyi, R. M., & Turkan, S. (2007). Video modeling strategies to enhance appropriate behaviors in children with autism spectrum disorders. *Teaching Exceptional Children*, 39(6), 47-52.
- Bandura, A., & Walters, R.H. (1963). *Social learning and imitation*. New York, NY: Holt, Rinehart and Winston.
- Begun, W. R. (Ed.). (1996). *Social skills lessons & activities for grades 7-12*. San Francisco, CA: Jossey-Bass.
- *Bellini, S., Akullian, J., & Hopf, A. (2007). Increasing social engagement in young children with autism spectrum disorders using self-modeling. *School Psychology*, 36(5), 80-90.
- *Bernad-Ripoll, S. (2007). Using a self-as-model video combined with social stories to help a child with asperger syndrome understand emotions. *Focus on Autism and Other Developmental Disabilities*, 22(2), 100-106.
- *Bidwell, M. A., & Rehfeldt, R. A. (2004). Using video modeling to teach a domestic skill with on embedded social skill to adults with severe mental retardation. *Behavioral Intervention*, 19, 263-274.
- *Buggey, T. (2005). Video self-modeling applications with students with autism spectrum disorder in a small private school setting. *Focus on Autism And Other Developmental Disabilities*, 20(1), 52-73.
- *Charlop-Christy, M. H., & Daneshvar, S. (2003). Using video modeling to teach perspective taking to children with autism. *Journal of Positive Behavior Interventions*, 5, 12-22.
- *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, 537-552.
- Çolak, A. (2007). *Kaynaştırma uygulanan bir ilköğretim sınıfındaki sosyal yeterlik özelliklerinin betimlenmesi ve iyileştirilmesi çalışmaları*. Yayımlanmamış doktora tezi, Anadolu Üniversitesi, Eğitim Bilimleri Enstitüsü, Eskişehir.
- *D'Ateno, P., Mangiapanello, K., & Taylor, A. B. (2003). Using video modeling to teach complex play sequences to a preschooler with autism. *Journal of Positive Behavior Intervention*, 5(1), 5-11.
- Delano, M. E. (2007). Video modeling interventions for individuals with autism. *Remedial and Special Education*, 28(1), 33-42.
- *Emecen, D. D. (2008). *Zihinsel yetersizlikten etkilenmiş öğrencilere sosyal becerilerin kazandırılmasında doğrudan öğretim ve bilişsel süreç yaklaşımları ile yapılan öğretimin etkililiklerinin ve verimliliklerinin karşılaştırılması*. Yayımlanmamış doktora tezi, Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.

Fawcett, S. B. (1991). Social validity: A note on methodology. *Journal of Applied Behavior Analysis*, 24(2), 235-239.

*Gena, A., Couloura, S., & Kymissis, E. (2005). Modifying the affective behavior of preschoolers with autism using in-vivo or video modeling and reinforcement contingencies. *Journal of Autism and Developmental Disorders*, 35, 545-556.

*Graetz, J. E., Mastropieri, M. A., & Scruggs, T. E. (2006). Show time: Using video self-modeling to decrease inappropriate behavior. *Teaching Exceptional Children*, 38, 43-48.

Halisküçük, E. S. (2007). *Zihinsel yetersizliği olan öğrencilere makarna pişirme becerisinin öğretiminde video modelin etkililiği*. Yayınlanmamış yüksek lisans tezi, Abant İzzet Baysal Üniversitesi, Sosyal Bilimler Enstitüsü, Bolu.

Kennedy, C. H. (2005). *Single-case designs for educational research*. Boston: Allyn and Bacon.

*Kroeger, K. A., Schultz, R. J., & Newsom, C. (2007). A comparison of two group-delivered social skills programs for young children with autism. *Journal of Autism Developmental Disorder*, 37, 808-817.

*Maione, L., & Mirenda, P. (2006). Effects of video modeling and video feedback on peer-directed social language skills of a child with autism. *Journal of Positive Behavior Interventions*, 8, 106-118.

McCoy, K., & Hermansen, E. (2007). Video modeling for individuals with autism: A review of model types and effects. *Education and Treatment of Children*, 30(4), 183-213.

Mechling, L. C. (2004). Effects of multimedia, computer-based instruction on grocery shopping fluency. *Journal of Special Education Technology*, 19(1), 23-34.

Mechling, L. C. (2005). The effect of instructor-created video programs to teach students with disabilities: A literature review. *Journal of Special Education Technology*, 20(2), 25-36.

*Nikopoulos, C., & Keenan, M. (2003). Promoting social initiation in children with autism using video modeling. *Behavioral Interventions*, 18, 87-108.

Nikopoulos, C., & Keenan, M. (2006). *Video modeling and behavior analysis: A guide for teaching social skills to children with autism*. London: Jessica Kingsley Publishers.

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

*Paterson, R. C., & Arco, L. (2007). Using video modeling for generalizing toy play in children with autism. *Behavior Modification*, 31(5), 660-681.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd Edt.). USA, California: Sage Pub. Inc.

Payne, E., & Antonow, J. (1982). Development and applications of user produced interactive videotape instructional materials. *Journal of Special Education Technology*, 5, 33-36.

*Sansosti, F. J., & Powell-Smith, A. K. (2008). Using computer presented social stories and video models to increase the social communication skills of children

with high functioning autism spectrum disorders. *Journal of Positive Behavior Interventions*, 10(3), 162-178.

*Scattone, D. (2008). Enhancing the conversation skills of a boy with asperger's disorder through social stories and video modeling. *Autism Developmental Disorder*, 38, 395-400.

*Schreibman, L., Whalen, C., & Stahmer, A. C. (2000). The use of video priming to reduce transition behavior in children with autism. *Journal of Positive Behavior Interventions*, 2(1), 3-11.

*Sherer, M., Pierce, K. L., Paredes, S., Kisacky, K. L., Ingersoll, B., & Schreibman, L. (2001). Enhancing conversation skills in children with autism via video technology: Which is better "self" or "other" as a model? *Behavior Modification*, 25, 140-158.

Tekin-İftar, E. ve Kırcaali-İftar, G. (2001). *Özel eğitimde yanlışsız öğretim yöntemleri*. Ankara: Nobel Yayınları.

Vuran, S. ve Sönmez, M. (baskıda). Sosyal geçerlik kavramı ve Türkiye'de özel eğitim alanında yürütülen lisans üstü tezlerde sosyal geçerliğin değerlendirilmesi. *Ankara Üniversitesi Özel Eğitim Dergisi*, 9(1).

*Wert, B. Y., & Neisworth, J. T. (2003). Effects of video self modeling on spontaneous requesting in children with autism. *Journal of Positive Behavior Interventions*, 5, 30-34.

Wissick, C. A. (1996). Multimedia: Enhancing instruction for students with learning disabilities. *Journal of Learning Disabilities*, 29, 494-503.

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 11(2), 203-214.