

Comparison of Direct Instruction and Problem Solving Approach in Teaching Social Skills to Children with Mental Retardation

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Abstract

This study was aimed at comparing the effectiveness and efficiency of direct instruction and problem solving approaches in teaching social skills to children with mental retardation. The design was adapted alternating treatment design. The subjects of the study consist of a girl and a boy between the ages of 11 and 13 who are mentally retarded. In order to collect the research data, teacher's interview form, the control check lists of social skills, criterion-referenced tests and data record sheets to use during direct instruction and problem solving approaches, efficiency form were developed and used. Visual graphical analysis method was used in the analysis of the data. The outcome shows that direct instruction approach was more effective than problem solving approach in teaching social skills to first subject. In acquisition of social skills direct instruction was more efficient in terms of total training time and training errors through criterion than problem solving approach.

Key Words

Direct instruction, problem solving approach, skill training, social skills, mental retardation

Social skills include skills of decision such as to establish verbal communication via starting and keeping communication, to express emotions such as wishes, likes and dislikes, rejecting; group work, to cope with negative situations, skills of eating at restaurants, using communal means such as public transportation, ATMs and skills of making choice (Çakır 2006, Varol 2004).

Having social skills is important for building and maintaining positive relationships and getting positive feedback for these social behaviors (Cartledge & Milburn, 1986; Sargent, 1991; Sucuoğlu & Çifçi, 2001). Additionally, gaining such skills are regard-

ed as a must for being accepted by peers (Huang & Cuvo, 1997; Sucuoğlu & Çifçi, 2001).

People get necessary skills by modeling people around them and using cognitive strategies they own to live independently in society (Özyürek, 1983; Snell, 1993). However individuals afflicted with mental disability may not have the chance to model and learn socially accepted behaviors because of the constraints in their lives (Huang & Cuvo, 1997). Segregated special education schools serve few opportunities to teach social skills and this limits mentally disabled students from gaining such skills (Sazak, 2003). Teachers' frequent criticism about inappropriate behaviors of mentally disabled students causes an increase in misbehaviors and inability to develop social skills when they are placed into regular classroom settings (Özyürek, 1999).

There are various effective ways to teach social skills to mentally retarded individuals. Some of them are direct instruction approach, problem solving approach, collaborative teaching method, and peer tutoring intervention (Alptekin, 2010;

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Avcıoğlu, 2001; Chadsey-Rusch, 1992; Çifci, 2001; Klingenberg & Rusch, 1991; O' Reilly & Chadsey-Rusch, 1992; Park & Gaylord-Ross, 1989; Sazak, 2003; Wolery, Ault, & Doyle, 1992). In this research direct instruction approach and problem solving method have been mentioned.

Direct instruction approach consists of modelling, guided practices, separate practice levels and it is a teaching method in which repeated exercises are performed to maintain permanency (Cornish, 2003; Çakır, 2006; Dağseven, 2001; Kemp & Carter 2002; Özokçu, 2007; Pearson & Gallagher, 1983).

Problem solving approach aims to make people who have a high level of receptive and expressive language gain social skills by teaching problem solving steps (Çifci & Sucuoğlu, 2004; Klingenberg & Rusch, 1991; Ladd & Mize, 1983).

In literature, we have studies about the efficacy of programs based on direct instruction approach in social skills teaching (Alptekin, 2010; Chadsey-Rusch, Karlan, Riva, & Rusch, 1984; Çakır 2006; Foxx, McMorrow, Storey, & Rogers, 1984; Kramer & Rodey 1997; Knapczyk 1989; La Greca, Stone, & Bell 1983; Özokçu 2007; Wheeler, Bates, Marshall, & Miller, 1988). There are also studies showing the efficacy of curriculums based on problem solving approach (Çifci, 2001; Klingenberg & Rusch, 1991; Park & Ross, 1989; O' Reilly & Chadsey-Rusch, 1992).

While preparing curriculum for students who are affected from inadequacies, the method should be both effective and efficient (Miller & Test, 1989; Snell, 1982; Varol, 1996). The knowledge of superiority of a teaching method to another method helps professionals who work with inadequate individuals achieve more learning outcomes in a shorter time (Snell, 1982). No study has been found abroad that compare the efficacy of direct instruction approach and problem solving approach. There is a study comparing efficacy of teaching methods of social skills in Turkey. Ünsal (2007) has studied the efficacy of peer tutoring and teacher-directed interventions and found out that mentally retarded students learn social skills in similar ways in both treatments. More research is required to determine the most effective teaching method.

Therefore this study aims to answer which teaching method is more effective for mentally retarded children in gaining social skills (thanking and sharing), direct instruction approach, or problem solving approach.

Aim of the Study

The main contribution of this study is to examine whether efficacy of direct instruction approach and problem solving approach for mentally retarded children in gaining social skills (thanking and sharing) varies, whether the new skills can be presented 5 and 35 days after teaching, and whether they can generalize different situations and to determine the best teaching method.

Method

Subjects

Four students from TSK. Gülsav Special Education Primary School, and Rehabilitation Center Primary School are the subjects of the study. Teacher interviews and social skills control list confirmed 6 students lacking thanking and sharing skills. Four students were later determined as having prerequisite skills such as following directions up to two-three words, answering questions verbally, using sentences of three- four words, telling an event or a story which was told her/himself. Two of these four students were chosen as main subjects and other two students as substitute.

First subject (Yaren), was born in 1996, second subject (Türker) was born in 1994 and both were diagnosed with the epileptic mental retardation. Both students can follow directions up to two-three words, use sentences of three- four words, tell a story or an event which was told to her/himself and answer questions.

Setting

The beginning level of thanking and sharing skills, teaching practices, independence tests after teaching, data collection process relevant to permanency were performed in the individual classroom of the institution. The professional and the subject sat across each other during teaching. The assistant child player sat near the professional for guided practices and separate practice levels of direct instruction approach. A camera was placed near the entrance of the door to record the process.

Materials

Scenarios describing the conditions which require the use of social skills which are aimed to use social skills teaching with direct instruction and problem solving approaches were prepared. Each scenario

was analyzed to determine the number of players, tools, pros, setting, and cue timing before shooting.

A computer was used to watch videos of six short stories presenting direct instruction of thanking and modeling of sharing. All necessary materials were prepared beforehand to be used in guided practices (the cue is given and drawn back) and separate practices of presentation and direct instruction approach. During data collection of generalization ability pretest, dining hall, classrooms of the subjects and stair heads where the students play around at breaks were used.

Task Analysis

Contexts in which thanking and sharing skills are used in school environment were analyzed. Six contexts were determined for both two skills. Task measurement tools were prepared with the help of analyses. Steps of the task that is every single situation have comprised the notification part and the standard was chosen as 2/3. Measurement tool was composed by adding practice settings which show tasks to be evaluated.

Design

Thanking and sharing levels of the subjects are dependent variable of the study. Direct instruction approach and problem solving approach are the independent variables of the study. The design of the research is adapted alternating treatment model which was adapted from experimental design. Alternating treatment model is used to compare the effect of two or three method on the same dependent variable (Kircaali-İftar & Tekin, 1997).

Experiment

The experiment consists of baseline, baseline of generalization, teaching, examining independence after teaching, maintenance and generalization sessions. Two 30 minute sessions were organized for every skill in a day. In the practice of research 8 sessions were carried out; four of which were for two subjects in a day.

Baseline

While determining baseline of thanking and sharing social skills, thanking and sharing skills measurement tools were used. Baseline data were gathered in three sessions in three separate days for

each subject. Adding a session at the fourth day, data of baseline for generalization were gathered.

Teaching Sessions

Direct instruction approach and problem solving approach were used with each subject alternately.

Direct Instruction Approach

The experimenter introduced the computer and materials, told the name of the study, and explained the rules. After the introduction, the teaching started. At the beginning of teaching session, the experimenter briefed about the necessity of the target social skill. Then she played the first video twice. The experimenter showed the second video which was about the proper behavior required in the first video. By replaying the video, she explained the content to the student. As the modeling level was over, the experimenter passed from the guided practices to the level cue given. Assistant child player was explained what to do or tell. Then children acted out the film they had watched in modeling level. After the reaction of assistant child player, acting out was stopped by telling the child what to do or say. If the reaction of the student was correct following experimenter's explanation, she/he was verbally reinforced. If the reaction was not proper or the student didn't react at all, experimenter replayed the video by explaining what was happening in the film. As the guided practices level in which cue was given was over, the experimenter passed the guided practices level in which cue was drawn back. Assistant child player was given instructions. Following the reaction of the child, she stopped acting out and asked: "Now your friend told you.... ..behaved like.....what will you do/say? If the reaction of the student was correct following experimenter's explanation, she/he was verbally reinforced. If reaction was not proper or there was no reaction at all, she returned to the play in which the cue was drawn back and the act cue is given. As the guided practices level was over, the experimenter passed to the separate practices level with a different but similar story. The experimenter explained what to do or tell to the assistant child player. The experimenter turned back to the subject and said "Now your friend will tell you.....will behave like..... do/ say whatever you need to do/say".? If the reaction of the student was correct following the assistant child player's reaction, she/he was verbally reinforced. If reaction was not proper or there was no reaction at all, she returned to the level in which the cue was drawn back.

Problem Solving Approach

The experimenter introduced the computer, named the study and explained rules by expressing the reinforcer which is known to be effective for the student that will be given to. After introducing the computer, teaching process was started by saying "let's start our work".

The experimenter briefly explained why the target social skill had to be learned in the first place. Following this explanation, she played the video twice by clarifying what was happening in the video. The experimenter asked questions and told expected answers loudly by following social coding (understanding the context), social deciding (what to do in such situation), social performance (deciding what alternative to apply), social evaluation (deciding what will happen at the end) levels in the problem solving approach. At social coding level the experimenter asked himself/herself "what happened here" and answered loudly. At social deciding level, the experimenter asked "what would I do if I were in his place" and told possible alternatives. At the social performance level, he/she asked "how should I act and why?" and answered. At social evaluation level s/he asked "how do I and the other person feel if I act like that?" and answered. After modeling, the experimenter told the student "it's your turn", and the student gave right answers by watching video and asking questions herself. Experimenter helped students remember the questions.

Maintenance Data

Data was collected within 5 and 35 days after teaching sessions to evaluate whether thanking and sharing skills persist through time. For this purpose, thanking and sharing measurement tools were applied once in every maintenance session.

Generalization Sessions

Generalization sessions were held to evaluate generalization of thanking and sharing skills of the subjects to other contexts. Generalization ability measurement tool was applied once at dining hall, stair heads where the students play around at breaks and at the classrooms near their friends.

Reliability

Inter-rater reliability and performance reliability data were collected by two observers at least at the 20 % of each teaching sessions for each subject. Inter-rater reliability was found 100 % for task

analysis (starting level, permanence, independence examination, and generalization) sessions (Tawney & Gast, 1984; Tekin-İftar & Kircaali-İftar, 2004). Inter-rater reliability has been found 100 % for teaching sessions and experimenter found 100 % of reliability for both students.

Social Validity

Social validity form was applied to the classroom teacher to evaluate the functionality of the target skills and effectiveness of teaching methods. Classroom teachers expressed positive opinions about the questions in the form.

Results

First subject gained sharing ability 100 % with direct instruction approach method but could not gain thanking skill (16, 6) with problem solving approach. While sharing data graphic is rising in relation to the starting level at direct instruction approach, thanking data graphic started to fall down and got back to the starting level at problem solving approach. As a result, direct instruction approach seems more effective than problem solving approach to gain social skills for the first subject.

The second subject demonstrated these skills at six different situations in two teaching methods, that is to say, by acquiring, maintaining and generalizing this subject was able to thank and share social skills 100 %. Both data graphic showed a rise for both social skills for both methods in comparison to the starting level. Thus direct instruction approach and problem solving approach seem to have equal efficacy to gain, maintain, and generalize social skills for the second subject.

Efficiency of direct instruction approach and problem solving approach were also compared in the study. To examine if the productivity level differed according to treatments, data were collected from a) the number of incorrect reactions of the students b) total teaching duration.

While both students gained social skills by direct instruction approach in 12 teaching sessions, 300 minutes of teaching, and with 44,4 % of incorrect reactions, only one of the subjects gained social skills by problem solving approach in 12 teaching sessions, 330 minutes of teaching, and with 87,4 % of incorrect reactions. Total teaching duration and the number of incorrect reactions of the students indicate that direct instruction approach is more effective than problem solving approach in gaining social skills.

Discussion

The main aim of this study is to find out whether efficacy of direct instruction approach and problem solving approach differs in the teaching of social skills to mentally retarded children and to determine the best teaching method.

Direct instruction approach has been found effective in gaining social skills (thanking and sharing). Professionals have found direct instruction approach as an effective mean to teach social skills to mentally retarded children: Foxx et al. (1984) for differentiating gender specific behaviors, complimenting, social interaction, being kind, proper reaction for criticism, asking questions with the right manner in social situations; Wheeler et al. (1988) for shaving, coming work after getting enough sleep, social interaction, obeying rules at workplace, greeting, Kramer and Radey (1997) for strengthening sibling relationships, Knapczyk (1989) for asking questions with the right manner, La Greca et al. (1983) for establishing relationships in the workplace, Chadsey-Rusch et al. (1984) for talking and questioning skills, Alptekin (2010) for sharing and asking for permission, Çakır (2006) for talking on the phone; Özokçu (2007) for apologizing, asking for help, bringing the task to an end in time. These studies support the findings of the study.

While problem solving approach has been found effective in gaining social skills (thanking, sharing) for the second subject, it has not been found effective in gaining thanking skill for the first subject. Professionals have found problem solving approach effective: Klingenberg and Rusch (1991) for proper reaction for criticism, Park and Gaylord-Ross (1989) for social behavior teaching in the workplace, O' Reilly and Chadsey-Rusch (1992), for interaction about the job, Çiftci (2001) for apologizing, handling with mocking, and avoiding improper touching. These findings support the results for the second subject but it does not support the study for the first subject.

It has been assumed that limiting sessions to 30 minutes and at total 180 minutes for 6 sessions and not continuing until students learn the skill may cause the first subject not to gain the thanking ability. Furthermore when task characteristics are taken into consideration, sharing ability includes using an object with another person or giving and taking an object while thanking requires saying "thank you". For this reason sharing skill does not require verbal communication skill. The first subject was observed by the experimenter during

practice phase as far as his/her participation in the study and behavior in preschool were concerned, the experimenter has concluded she is shy, reluctant for social situations and games although she can express herself in both teaching sessions and breaks. This difference can mean the first subject needs more cue and time during learning process with both approaches.

Finally direct instruction approach seems more effective than problem solving approach for the first subject in gaining social skills (thanking and sharing) whereas direct instruction approach and problem solving approach seem to have equal efficacy for the second subject. In literature no study has been found that compares the efficacy of direct instruction approach and problem solving approach. When the productivity of methods in gaining social skills was examined, it was observed that both students gained social skills by direct instruction approach in 12 teaching sessions, 300 minutes of teaching, and with 44,4 % of incorrect reactions, only one of the subjects gained social skills by problem solving approach in 12 teaching sessions, 330 minutes of teaching, and with 87,4 % of incorrect reactions.

Total teaching duration and the number of incorrect reactions of the students give the impression that direct instruction approach is more effective than problem solving approach in gaining social skills. It can be due to the fact that direct instruction approach gives the opportunity to practice tasks and that cues are drawn back systematically during applications. Because at guided practice phase problem solving approach involves questioning and answering, finding solutions for problems instead of practicing and doing in presence and absence of cues. For this reason subjects may gain social skills in a shorter time and win fewer mistakes with direct instruction approach. The efficacy of the methods was compared in the maintenance of social skills. It was found out that the subjects were able to present the social skills (thanking and sharing) they obtained with both methods in all six thanking and sharing situations within 5 and 35 days after the teaching was over. So, direct instruction approach and problem solving approach seem to have a similar efficacy in persisting new skills. Alptekin (2010) found sharing and asking for permission persist within 15 and 30 days after direct instruction approach method. This supports the finding of the study.

Teachers can be advised both treatments since there is not a great difference between direct instruction

approach and problem solving approach in term of efficacy, maintenance and generalizability. Furthermore, teachers, psychological counselors at counseling and research centers and special education staff can be advised to use thanking and sharing measurement tools, instruction materials and social skills control list used in the study.

Another study can be carried out with the instructional materials prepared with direct instruction and problem solving approaches until the students gain the social skills to measure efficacy and productivity. The study can be replicated by using thanking and sharing measurement tools at the end of every session. At the end of the interventions, the effect of the instruction on the non-target social skills can be measured. Generalization of the gained skills can be measured at other environments out of the school.

Since this is the single study comparing two approaches in social skills learning in terms of efficacy and productivity, replicating study with other social skills can be fruitful.

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