

Determination of Reinforcement Usage Strategies during Literacy Education of Teachers Working with Students with Multiple Disabilities in Turkey

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ABSTRACT

In this study, it is aimed to determine the opinions of teachers working with students with multiple disabilities about the way in which they determine and use reinforcements during literacy education. The research was designed based on the qualitative research design, and the data was collected from 5 male and 15 female teachers using the semi-structured interview technique. The data obtained from the interviews were analyzed using the descriptive analysis technique. As a result of the research, it was found that teachers working with students with multiple disabilities mostly stated that the use of reinforcers is important. They also emphasized that their use also motivates students, helps them to gain positive behavior, and makes education effective and permanent. Most of the teachers expressed that they make observations while determining the reinforcement suitable for their students. It was found that the teachers used the observations to take the interests, needs, likes and wishes of their students into account. It was discovered that they mostly determined the effect of the reinforcer they used for students through observation and that teachers preferred food and beverage, activity, symbol, toy and game reinforcers in general. It was revealed that teachers working with students with multiple disabilities use observation method in determining the reinforcers for their students and evaluate their effects and that they do not use other methods. Moreover, they do not give much room to use and diminish reinforcement tariffs.

Key words: Multiple Disabilities, Students With Multiple Disabilities, Reinforcer, Reinforcement Schedule

INTRODUCTION

Based on the types of disability, multiple disability is defined by IDEA (Individuals with Disabilities Education Act) as a disability accompanied by another disability. Based on the services needed, the term is also defined as “the need for customized education or social, psychological and medical services for individuals with disabilities in order to provide meaningful participation in the society enabling them to use their full potential to meet their own needs” (Heward, 2009; Electronic Code of Federal Regulations, 2013) According to Mednick (2007), individuals with multiple disabilities are defined as individuals with more than one disability including physical, cognitive, communication, sensory and affective difficulties.

It is possible with the systematic education given to individuals with multiple disabilities to learn how to read and write, live in harmony with typically developing individuals and to live without needing others. It is very important to reward or reinforce the correct responses of students using the reinforcers that they prefer during systematic teaching (Greene, 2016).

Reinforcement is the name of the process and reinforcer is the stimulus utilized in this process. Reinforcement can be defined as the process of increasing the likelihood that the behavior will occur in the future by putting a pleasant stimulus into the setting after a behavior or removing an unpleasant stimulus from the setting (Alberto & Troutman, 2013; Cooper et al., 2009; Webber & Scheuermenn, 2008). Pleasant stimuli used for reinforcement are named as reinforcers and used as rewards (National Center on Intensive Intervention 2016; Hoque, 2013). The reinforcers used when planning the teaching vary according to the interest and needs of students. In addition, the teacher should plan the use system of reinforcers when teaching (Browder et al., 2014). Reinforcers can be examined under two headings as primary reinforcers and secondary reinforcers. Primary reinforcers are the ones that do not require education such as food and beverages etc. Secondary reinforcers are learned rewards such as stickers and tokens (Adibsereshki et al., 2014). Teachers can use the appropriate reinforcer type which are tangible reinforcers, activity reinforcers or social reinforcers according to the interest of their students in the educational setting (Downing et al., 2005).

Reinforcers have different functions depending on the person's characteristics. Due to individual differences, reinforcers may vary from person to person, and a stimulus that is used as a reinforcer for one person may not perform the same function for another person (Cooper et al., 2007). Therefore, teachers should consider individual differences when determining reinforcers, provide reinforcers immediately after appropriate behavior, and should pay necessary attention to employ reinforcement schedules appropriately.

When teaching students with multiple disabilities how to read and write, a new subject, skill and behavior, reinforcers should be presented within reinforcement schedules. Reinforcement curriculum is used as continuous reinforcement, ratio reinforcement schedules and interval reinforcement schedules. When working with students with multiple disabilities, the use of reinforcer should start with continuous reinforcement and it should fade out systematically varying from interval to rate reinforcement.

Since there are many individual differences among students with multiple disabilities, stimuli that function as reinforcers must be determined for each student. Interview, screening and preference assessment are used in determining reinforcers. Interviews can be implemented with the person to whom we will use the reinforcer or the people who know the person (teacher, parent or caretaker). Screening is the process through which the behavior of the person who will use reinforcements will be assessed. Preference assessments can be made directly and indirectly. Direct preference assessments are implemented by asking the person about the stimuli that they like and do not like or by screening their behavior. Indirect preference assessment is made by interviewing people who know the person (Eldeniz Çetin, 2017).

In preference assessment, single, paired and multiple-stimulus presentations are used according to the number of stimuli (Reed et al., 2009). Single Stimulus (SS) presentation: In the SS presentation method described by Pace et al. (1985), each stimulus is presented individually and an individual with special needs is provided with the opportunity to approach this stimulus or to consume / use the stimulus. In the Paired Stimulus (PS) preference assessment defined by Fisher et al. (1992), stimuli are presented in pairs. The target individual is given the opportunity to choose one of these stimuli (Higbee et al., 2000). Multiple-stimulus (MS) presentation: The target individual is to choose one of the three or more stimuli simultaneously presented (Waldvogel & Dixon 2008). DeLeon and Iwata (1996) implemented the MS presentation method without replacement (MSWO). In this method, a group of stimuli (MS presentation) is placed in front of the participant and when the participant chooses a stimulus, that stimulus is taken from the series and is not added the series again in other trials in that session. For this reason, this intervention is defined as MSWO (Roane et al., 1998; Rush et al., 2010; Waldvogel & Dixon, 2008). Teachers can use one or more than one of the interview, screening and preference assessment methods when determining reinforcements for their student with multiple disabilities.

When the literature is examined, it is seen that studies on reinforcement and the use of reinforcements were

carried out (Adibsereshki et al., 2014; Babayiğit & Erkuş, 2016; Can, 2005; Çelik & Eratay, 2007; Dad et al., 2010; Dönmez-Güngör, 2009; Eldeniz Çetin et al., 2017; Gürel, 2014; Kurtuldu, 2010; Mirzeoğlu et al., Palas et al., 2007; Ulay, 2004). Some of the studies on this topic are as follows: Adibsereshki et al., (2014) conducted a study on the ethics of tangible and social reinforcers in the academic achievement of students with intellectual disabilities. In their study, Babayiğit and Erkuş (2016) studied the effectiveness of the reinforcers and punishments used by the class teachers in the lessons. While Can (2005) examined the role of clues and reinforcers in teaching-learning, Çelik and Eratay (2007) introduced the reinforcement and punishment practices of the mainstreaming class and special education class teachers for students with mental disabilities in their study. Dad et al., (2010) investigated the teachers' use of negative and positive reinforcement in Pakistan. While Dönmez Güngör (2009) studied the attitudes of students with disabilities towards the reinforcers used by physical education teachers in physical education classes, Eldeniz Çetin et al. (2017) examined whether the general and special preference assessment data of students with different levels of mental disability change in the context of time. Gürel (2014) carried out a study on the effect of social reinforcers and model behaviors in shaping children's moral judgments. While Kurtuldu (2010) studied the effects of indirect and direct reinforcement on students' piano playing technique, Mirzeoğlu et al. (2007) investigated the effect of free gymnastics and folk dance units taught with reinforcement and feedback on the success levels in cognitive and psychomotor areas. Last but not least, Ulay (2004) examined the attitudes of classroom teachers towards using reinforcers in their teaching-learning processes.

When the literature is examined, it is seen that there are studies regarding the attitudes of teachers towards the use of reinforcers, the role of reinforcers in teaching and learning, intervention and punishment practices for students with intellectual disabilities in the classes of special education classes. However, it has been determined that there are no studies aiming to identify the strategies used by teachers working with students with multiple disabilities in determining reinforcers, the types of reinforcers they use the most and their reinforcement usage system. Therefore, conducting such a research that aims to contribute to the field and the intervention was thought to be necessary in order to draw attention to the fact that preferred reinforcers may differ to increase the frequency of the acquired behavior of the students with multiple disabilities.

Objective and Research Questions

The general objective of this study is to determine the reinforcement determination and usage strategies during literacy education of teachers working with students with multiple disabilities. In line with this general purpose, the sub-goals are;

1. What strategies do teachers working with students with multiple disabilities use to identify reinforcers?
2. Which reinforcers do teachers working with students with multiple disabilities use most?

3. How do teachers working with students with multiple disabilities use systematic reinforcement?

METHOD

Research Design

In this study, since it was aimed to determine the strategies of teachers working with students with multiple disabilities in determining the reinforcements they use during literacy education, the typical case study, one of the qualitative research types used to reveal a particular situation or an event, was employed.

Participants

In this section, demographic information about the participants is presented. Participants of the research are teachers working at special education schools. Criteria sampling method was employed in the research. The criteria determined for the identification of the participants are, first, being graduated from the department of education for the intellectually disabled and second, having at least three years of teaching experience at schools affiliated with the Ministry of National Education. These criteria were determined for them in order to get to know students with intellectual disabilities closely and to obtain healthy screening data. For this purpose, 20 special education teachers working in Ankara, Bolu and Sakarya provinces in Turkey were included in the working group of the research.

The professional experience of the teachers participating in the research varies from 3 to 25 years; five of them are male and 15 of them are female. While six of the teachers have special education classes at a general education school, five of them work at a vocational training and practice center and nine of the participants work at a practice school. As for the composition of the students, while nine of the teachers have students with intellectual disabilities in their classroom, four of them have students with intellectual disabilities and autism spectrum disorder. On the other hand, two of them have students with autism spectrum disorder and while three of them have students with intellectual disabilities, hearing and visual impairment, two of the participants have students with intellectual disabilities, autism spectrum disorder and physical disabilities.

Data Collection

In the research, the data were obtained using semi-structured interview technique. In order to collect the research data, the interview form prepared by the researchers by scanning the literature was finalized by taking the opinions of experts working in the field of special education and assessment and evaluation. The interview questions prepared in accordance with the semi-structured interview technique were asked to the teachers one to one and their opinions were recorded.

Prior to collecting the research data, an interview guide and a checklist of important items were prepared for all the

interviews to be systematic. This checklist remained in front of the researcher during the interviews. During the interviews, all the stages in this checklist were strictly followed and the data were obtained. The interviews lasted for approximately 9 to 13 minutes.

Before starting the interview, the researcher introduced herself and declared the purpose. She added that the interview would be recorded, and the names would not be included in the research. After the approval of the teachers who participated in the research, the voice recording was started, and the data were collected.

Validity and Reliability

Studies on validity and reliability were conducted in the research. Within the scope of the research on internal validity, the questions to be asked from the teachers, the data obtained and the interpretations of the data were presented to the expert opinion. In addition, the findings and comments obtained in the research were shown to 25% of the teachers participating in the research and the participants' approval was obtained. Regarding the external validity of the research, direct quotations were given in quotes by giving examples from the sentences by which the participants expressed their opinions.

In order to ensure the internal reliability of the research, the field expert was asked to conduct a consistency study between the research data and the results of the study. As a result of the consistency review conducted by the field expert, it was determined that there is a consistency between the analysis approaches, research data and research results. As for the external reliability, the field expert's approval regarding not only the raw data and the results related to the data but also the comments made on this data were obtained.

Data Analysis

The answers given by the teachers working with students with multiple disabilities to the questions prepared to detect their opinions about reinforcement determination and usage were first deciphered and then written down. The reliability of the deciphering process was applied to the 30% of the documents and calculated as 100%. Descriptive analysis (thematic analysis) method was used to analyze the data and the following steps were followed during the analysis process.

1. The interviews made by the researcher were transcribed.
2. A total of 25 word pages were obtained from the voice recordings during the interviews.
3. Codes such as T1, T2 were used to code the teachers.
4. Teachers' answers related to the same question were grouped.
5. Answers to each question were read several times.
6. Questions were accepted as themes and codes were created within the framework of these themes.
7. The frequency of teachers' saying the codes was calculated and reported as frequency.
8. Citations were made with the teachers' own expressions.

In studies, direct quotations are included to present the opinions of participants (Yıldırım & Şimşek, 2008). In the research carried out, what the teachers said was quoted exactly in quotation marks. Then, the data transferred to the computer were analyzed using the descriptive analysis method. Finally, the statements of the interviewees were quoted directly using codes like T1, T2.

RESULTS

Tables of the opinions regarding the reinforcement determination and use of the teachers who work with students with multiple disabilities were created by taking their frequency into account.

Opinions of the Teachers Working with Students with Multiple Disabilities Regarding the use of Reinforcers During Literacy Education

The opinions of teachers working with students with multiple disabilities regarding the use of reinforcers were given in Table 1.

When Table 1 is analyzed, most of the teachers working with students with multiple disabilities stated that reinforcement is necessary for their students. In addition, while most of the teachers stated that the use of reinforcers motivates students and it is necessary to teach positive behavior and ensure maintenance, very few of them argued that they are not necessary.

T1. Now, the resources are limited as the reinforcement intervention is completely a financial burden on the teacher. State contribution is essential in this regard. The use of reinforcers in special education is unconditional, indispensable.

T8. It is useful to motivate and stimulate students. Children become happy and ambitious.

Opinions of the Teachers Working with Students with Multiple Disabilities Regarding their Strategies to Determine Reinforcers During Literacy Education

The opinions of the teachers working with students with multiple disabilities regarding the strategies they employ to determine reinforcers were presented in Table 2.

When Table 2 is examined, while the majority of the teachers working with students with multiple disabilities suggested that they use screening students as a strategy, a few of them expressed that they use interviews when they determine the reinforcer. It was determined that none of the teachers utilized preference assessment. The participants stated that it took a lot of time as a reason for not employing it.

T14.... I screen the student; I determine the reinforcer according to the student's liking. I do not evaluate preferences. Preference evaluation takes a lot of time.

T16. By communicating with the family, I identify reinforcers such as the food that the child likes and dislikes, etc... At the same time, I screen the child in the educational setting in the classroom and determine social reinforcers.

Opinions of the Teachers Working with Students with Multiple Disabilities Regarding how they Determine Whether the Reinforcers have Reinforcing Effect or Not

The opinions of the teachers working with students with multiple disabilities regarding how they determine whether the reinforcers have reinforcing effect or not were presented in Table 3.

Table 1. Opinions of teachers working with students with multiple disabilities regarding the

| | f | | f |
|-------------------------------------|----|---|---|
| The use of reinforcers is necessary | 18 | Motivates the students | 6 |
| | | Necessary to teach positive behavior | 5 |
| | | Necessary for education to be effective | 3 |
| | | Necessary to ensure the maintenance | 1 |
| | | State contribution is necessary | 1 |
| No need for a reinforcer | 2 | | |

Table 2. The opinions of the teachers working with students with multiple disabilities regarding their strategy to determine reinforcers

| Theme | f | Sub-theme | f |
|-------------------------|----|---|---|
| By screening | 15 | By taking the child's interest into account | 8 |
| | | By taking the child's needs into account | 7 |
| | | By taking the child's likes/dislikes into account | 7 |
| | | By taking the child's requests into account | 2 |
| By interviewing parents | | | 3 |
| By asking the student | | | 1 |
| Preference assessment | | | 0 |

Table 3. The opinions regarding how the teachers determine whether the reinforcers have reinforcing effect or not

| Theme | f | Sub-theme | f |
|-------------------------------|----|---------------------------------|---|
| Screening | 19 | Students' responses | 5 |
| | | Learning pace | 4 |
| | | Ensuring learning | 3 |
| | | Having behavior change | 3 |
| | | Interest in the lesson | 2 |
| | | Requesting the reinforcer again | 2 |
| By means of parents' opinions | | | 6 |

Table 4. The opinions of the teachers working with students with multiple disabilities regarding the type of the reinforcer that they use the most

| Theme | f |
|----------------------------|----|
| Positive reinforcement | 20 |
| Kinds of reinforcer | |
| Food-beverage | 9 |
| Activity | 8 |
| Symbol | 8 |
| Game/toy | 5 |
| Realia | 4 |
| Leisure time activity | 4 |
| Social reinforce | 3 |
| School equipment | 2 |

When Table 3 is analyzed, most of the teachers stated that they use screening to determine whether the reinforcers have reinforcing effect or not. On the other hand, some of them expressed that they confirm the reinforcing effect of the reinforcers they use by means of the parents' opinions.

T19. If the reinforcer changes the students' behavior, it is effective.

T15. I look whether the student present positive behavior or not after the reinforcer was implemented.

Opinions of the Teachers Working with Students with Multiple Disabilities Regarding the type of the Reinforcer that they use the Most

The opinions of the teachers working with students with multiple disabilities regarding the type of the reinforcer that they use the most were presented in Table 4.

As far as Table 4 is concerned, it can be said that teachers working with students with multiple disabilities use positive reinforcement and often use food and beverage and activity reinforcers.

T8.... social reinforcer and symbol reinforcer more. It can be considered because the age group is high in different activities.

T7. Food, beverage, song, entertainment, leisure time activity

Table 5. The opinions of the teachers working with students with multiple disabilities regarding the systematic of the reinforcer that they use

| Theme | f |
|----------------------------|----|
| Fading out reinforcement | 7 |
| I do not do any changes | 13 |
| I always use reinforcement | 16 |

Opinions Of The Teachers Working With Students With Multiple Disabilities Regarding The Systematic Of The Reinforcer That They Use

The opinions of the teachers working with students with multiple disabilities regarding the systematic of the reinforcer that they use were given in Table 5.

When Table 5 is analyzed, as for the systematic of the reinforcer, while most of the teachers working with students with multiple disabilities said that they always use reinforcement, a few of the participants stated that they fade out reinforcement.

T7. I do not use any reinforcement constantly. I make changes to draw the student's attention to the reinforcer. So that they do not get used to the reinforcement, I fade out the reinforcer.

T11. I do not exaggerate it, but their favorite food and the food that they do not afford take place all the time.

T15. I don't use a regular reinforcer

T1. I use a reinforcer whenever I see it necessary. The gains are decisive in this regard. If there is no gain, the reinforcer has no meaning. In addition, the reinforcer must take into account the personal characteristics of each student. I never use reinforcers that are monotonous.

As a result, most of the teachers working with students with multiple disabilities stated that reinforcement is necessary for students with multiple disabilities and added that they determined the reinforcers they use and their effect by screening. In addition, they also suggested that they used positive reinforcement and food – beverage and activity as a type of reinforcer frequently. As a final remark, the participants expressed that while they prefer continuous reinforcement mostly, they partly employed fading out reinforcers.

DISCUSSION AND CONCLUSION

In the research, it is aimed to determine the opinions of teachers working with students with multiple disabilities about the use of reinforcement, the strategies they used to determine reinforcers, the types of reinforcers they used most, and their reinforcement usage systematic during literacy education. At the end of the research, most of the teachers working with students with multiple disabilities stated that reinforcement is necessary for students with multiple disabilities; the use of reinforcers not only motivates students and is necessary in order to teach them positive behavior but also is effective in teaching and important to ensure maintenance. These expressions of teachers support the study of Browder et al. (2014) that emphasizes the importance of the use of reinforcers in the education of individuals with severe and multiple disabilities.

Although most of the teachers working with students with multiple disabilities stated that they determined the reinforcers they used by screening their students, while a few of the participants stated that they determined them by parent interviews. It was determined that none of the teachers employed preference assessment expressing that it took a lot of time as a reason for not using it. Fisher et al. (1996) detected that the opinions of parents/caretakers are more effective in determining effective reinforcers than standard scales. Besides, they also found that direct intervention preference assessments are more effective than the opinions of parents/caretakers.

In order to determine the reinforcement preferences of students with multiple disabilities correctly, it is recommended that teachers use direct preference assessment. In addition, in this study, most of the teachers stated that they determined reinforcement preferences through screening. In the literature, Cote et al. (2007) emphasized that the use of teacher interview and direct preference assessment together in the reinforcer assessment is necessary to determine effective reinforcers. Moreover, the teachers participating in this research stated that they determined whether the reinforcers they utilize had a reinforcing effect mostly by screening. On the other hand, some of the other participants stated that they confirmed the reinforcing effect of the reinforcers with the view of parents. However, screening alone is not enough and recording techniques can be used to make data permanent.

As a result of the research, it can be said that all of the teachers use positive reinforcement and they mostly use food and beverage and activity reinforcers as the type of reinforcer. Kinyanjui et al. (2015) stated that in Kenya, teachers use social reinforcement in the form of praise most frequently which is followed by realias, activities and tokens, respectively. In this context, it can be argued that special education teachers use food and beverage and activities as reinforcers more intensely in Turkey and the use of reinforcers may vary from culture to culture and person to person. While most of the teachers stated that they used continuous reinforcement, it was found that a small number of teachers employed fading out reinforcement and implemented continuous reinforcement. It is recommended that they use fading out in order not to make the student addictive to reinforcers.

Most of the teachers participating in the study indicated that they used reinforcers. This finding is in line with the findings of the study in which Derevensky and Leckerman (1997) determined that the use of reinforcers in special education classes is more frequent than other classes. Therefore, it can be said that special education teachers in Turkey pay attention to using reinforcement in their classes.

This research was designed with the qualitative research design aiming to determine the opinions of teachers working with students with multiple disabilities about the use of reinforcers. In addition, it was also aimed to determine not only the strategies they use in determining the reinforcers they use but also the most used reinforcer types and their usage systematic. At the end of the research, most of the

teachers working with students with multiple disabilities stated that reinforcement is necessary for their students and the use of reinforcers motivates students. They also emphasized that reinforcement is necessary for teaching positive behavior and it is both effective in teaching and ensuring maintenance. However, very few of the participants stated that there is no need for reinforcement. While teachers working with students with multiple disabilities mostly stated that they determined the reinforcers by screening their students, a few stated that they determined them through interviews. It was found that none of the teachers utilized preference assessment stating that it took a lot of time as a reason for not using it. While most of the teachers pointed out that they use screening to determine whether the reinforcers have reinforcing effect or not, some of them expressed that they confirm the reinforcing effect by means of the parents' opinions. It can be said that all of the teachers use positive reinforcement and they often use food and beverage and activity reinforcers as the type of reinforcer. While most of the teachers stated that they use continuous reinforcement, a small number of participants expressed that they utilize fading out.

Because this research was designed with a qualitative research model, the results obtained cannot be generalized; therefore, they are limited to the opinions of 20 special education teachers working with students with multiple disabilities. In the light of the findings obtained, it is suggested that the reinforcement determination and use of teachers working with students with multiple disabilities be supported by screening data. A further suggestion that can be added is that supporting with qualitative and quantitative data, the reinforcement determination and use of more teachers working with students with different types of disabilities be determined.

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