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Effectiveness of teaching English introductory phrases with digital dialogue cards to students with intellectual disabilities

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Highlights

- Students with intellectual disability can learn English introductory phrases after training
- Students with intellectual disability can establish a mutual dialogue in English after using digital dialogue cards in training
- The use of technology assisted instruction is effective in teaching English introductory phrases and mutual dialogue behaviours to the students with intellectual disability
- Students with intellectual disability can maintain and generalize the target behaviours across conditions

Article Info: Research Article

Keywords: *intellectual disability, teaching English phrases, teaching English dialogue skills, digital technology, teaching English as a foreign language*

Abstract

The current study was carried out to examine the effectiveness of the use of direct instruction together with the digital dialogue cards in teaching English introductory phrases and mutual dialogue to students with intellectual disabilities was studied. The study started with four students with mild intellectual disability, however, one student dropped out due to absenteeism and the study was concluded with three students. Multiple probe model with probe phase of the single-subject research model was used in teaching English introductory phrases and the ability to establish mutual dialogue. The research findings showed that the use of the direct instruction method together with the digital dialogue cards was effective in teaching the target behaviours to the three participants. It is also seen that after the end of the instruction the participants provide generalization between people, environments and tools regarding the target behaviours and they maintain the target behaviours at a high rate after 2, 4 and 6 weeks intervals. The social validity findings of the study show that the parents of the participants were satisfied with the study and expressed positive opinions about the research. At the end of the research, suggestions were made for the future.

1. Introduction

Individuals with intellectual disabilities, have significant limitations in both their mental functions and adaptive skills (APA, 2013; Ross, 2021). Although there is no clear data on the frequency of intellectual disability in Turkey, this rate varies between 1-3% worldwide according to the data of the World Health Organization (WHO, 2011). Intellectual disability is addressed in its dimensions of mental function and adaptive behaviour. In the mental function dimension, the intelligence test score of the individual is checked through intelligence tests. In the adaptive behaviour dimension, the conceptual, social and practical skills of the individual are examined, including the independent individual behaviours exhibited by their normally developing peers (Patel et al., 2020). When the characteristics of individuals with intellectual disability are examined, the most basic feature is the slowness of their developmental rate. In addition, slowness in learning, distraction, speech disorder and delayed speech, sensory-motor problems, inadequacy in daily life

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skills and inadequacy in social skills can be observed. These features are seen in all individuals with intellectual disability, but the level of performance of these skills varies according to the degree of intellectual disability. (Yıldırım Doğru, 2018).

The attention span of students with intellectual disabilities may be quite short, they may learn academic concepts late and difficult, and they may forget what they have learned in a short time. They may have problems in generalizing the learned knowledge and skills, they may experience limitations in their receptive and expressive language skills, and they may have difficulty in learning abstract concepts. When the language characteristics of students with intellectual disabilities are examined, it is seen that they experience significant limitations in their working memory skills and therefore cannot use repetition strategies independently. The limitations experienced in mental organization skills cause them to lag behind cognitive skills in language development in terms of creating word categories and associating grammatical rules with each other. The limitations experienced in generalization skills cause students not to be able to use the words and grammar rules they have learned in a creative manner. Moreover, joint attention has an important place in learning the social aspect of language, and the limitation of joint attention may negatively affect the social interaction of students with intellectual disabilities. Compared to their normally developing peers, students with intellectual disabilities have longer language acquisition periods and continue to learn vocabulary and grammatical structures in their later years. For these reasons, it is of great importance to use the limited learning capacities of individuals with intellectual disabilities to teach functional knowledge, skills and concepts that they can use in their daily lives, and to include functional skills that will facilitate their participation in society in curricula, such as communication skills. (Florian & Rouse, 2001; Matson et al., 2012; Moore & Calvert, 2000).

When the studies on the acquisition of English as a foreign language by students with intellectual disabilities are examined, it is seen that these students cannot acquire English as a foreign language with the methods commonly used in their classrooms. Due to their inadequacies, the foreign language teaching offered to these students can be differentiated by making adaptations. While English is taught as a foreign language to students with intellectual disabilities, education and instruction can be organized using scientifically proven teaching methods according to the characteristics of the student (McLean et al., 2003; Rodriguez et al., 2017). There are many studies showing that teaching English words and phrases that support communication and participation in society is beneficial in terms of recalling words and sentences, phonological awareness, fluency and reading comprehension (Joshi, 2006; McColl, 2005; Parette et al., 2009; Riviera et al., 2002). A study revealed that systematic teaching including hinting and fading strategies is very effective in teaching reading and reading comprehension skills and English vocabulary to students with intellectual disabilities; also, that even students with significant intellectual disabilities can learn to read visual reminder words with systematic practices such as errorless teaching methods (Browder et al., 2006). Today, where the ability to speak a second language is thought to be one of the requirements of the era, word and phrase teaching is not only done in the mother tongue and second language teaching is widely carried out at all levels of education. Besides, in parallel with the widespread use of integration practices, more and more students with special needs attend English classes and they are expected to go abroad through the projects carried out in their schools and communicate with the citizens of that country using the universal language that is English.

With the development of technology, it is inevitable to integrate the learning environments brought by this era into education in today's conditions. The use of technological tools and auxiliary materials such as computers, smart boards, smart phones, tablets as teaching materials have changed education in schools and institutions. (Haleem et al, 2022). Digital technologies are seen as a powerful tool that can aid development in a variety of ways, such as making it easier for teachers to create teaching materials and providing new ways to pave the way for learning. It is seen that being in a new era with the worldwide access of the Internet and many smart devices connected to it provides the opportunity for effective and efficient education to be accessible to everyone and everywhere (Lockyer & Patterson, 2008; Varea et al,

2020). The inclusion of technology and computers in training supports the service providers and service recipients. In addition, service providers and experts in the field often emphasize the shortcomings of the technology (Demir et al., 2022; Sani-Bozkurt, 2021). It is considered that the use of technology for individuals with special needs in education, which is thought to have benefits such as diversifying teaching materials, organizing these materials according to the individual characteristics of each student, and easy access, can guide student groups, encourage these individuals to express their ideas, motivate physical activity and develop social interaction skills (Roberts-Yates & Silvera-Tawil, 2019). When the foreign literature is examined, it is emphasized that auxiliary technologies should be appropriately designed, implemented and be accessible to meet the specific needs of students with special needs; and that today, digital wealth of the society and various forms of technology are potential beneficial factors in learning applied activities for students with special needs. (Collins & Halverson, 2010; Macias Mosquera & Villafuerte Holguin, 2020; Yin & Moore, 1987). For example, in a study conducted by Seok et al. (2015) it is stated that the use of computer-based technology for the instruction of students with intellectual disability, developmental disability and autism spectrum disorder in general helps these students to learn spelling or writing skills. Similarly, it is known that students with developmental disabilities generally have significant limitations in the acquisition of written expression and reading skills, processes such as learning, reasoning and problem solving (Joseph & Konrad, 2009), therefore it is emphasized that using appropriate assistive technologies in the development of communication skills and in the acquisition of spelling is important (Kagohara et al, 2013). Due to all these benefits of technology, the use visualized digital dialogue cards in the instruction of English introductory phrases and dialogue skills in the current study is planned.

2. Literature

In the literature, it is emphasized that a second language can be learned independently from the first language (Oda, 2010) and that learning a foreign language will positively affect the participation of students with special needs in the social environment (Wire, 2005). Nevertheless, it is stated that even students with intellectual disabilities have the ability to learn foreign languages, but for this, their teaching and learning processes should be professionally planned (Krapez, 2010). Despite it is stated in the literature that the proficiency in the mother tongue of students with intellectual disability positively affects their potential to learn a second language, there are positive studies that show that they can learn a foreign language (Mohammadian & Mohammadian-Dolatabadi, 2016; Yahya et al., 2013). However, despite the existence of studies on second language teaching in the international literature (Sparks & Ganschow, 1993; Yahya et al., 2013), it is also stated that there are not enough studies yet (Mohammadian & Mohammadian-Dolatabadi, 2016). Furthermore, in parallel with the requirements in the international literature, while there are only two studies on teaching English vocabulary and a study in which Turkish is taught as a foreign language in the literature of our country, there are no studies yet on teaching English phrases and the ability to establish mutual dialogue.

In Turkey, as in many countries, education of the students with special needs in common-public education schools is legally protected like their normally developing peers. Students with special needs continue their education through inclusive classrooms of schools affiliated to the Ministry of National Education and practice schools. It is thought that teaching English skills that they will use in the education and instruction processes will be beneficial for students, whether because it is included in their curriculum or if they participate in international projects and exchange programs. English concepts and speaking skills should be presented by taking into account the competencies and readiness of students with special needs. In this study, it is planned to teach English introductory phrases to students with intellectual disabilities, to improve their pronunciation and to provide them with the ability to establish mutual dialogue. It is thought that these concepts and skills that students would acquire will increase their self-confidence and communication skills, ensure them to be more willing and successful in English lessons, and encourage them to participate in international studies. In addition, it is thought that the findings of this study will guide experts and teachers.

3. Methodology

3.1. Research Model/Design

The research was designed as quantitative research in order to determine whether the direct teaching method used in English phrase teaching was effective, and one of the single-subject research models, the interparticipant probe-stage multiple probe model, was used. Interparticipant probe-stage multiple probe model is a research model in which the effectiveness of an independent variable on a dependent variable is examined on at least three participants (Ledford & Gast, 2018).

3.2. Data Collection

The research was conducted in the sports room of a Special Education Vocational School affiliated with the Ministry of National Education. The sports room consists of a table, a bench for three people, gymnastic mats, and an area with three glassed facades and sliding windows with sports equipment such as balls, ropes, and cones. A camera, data recording forms and pen were used to record the data. As teaching materials 8 digital phrase cards and a digital visualized dialogue card were used. Digital phrase cards had white background, a thin black frame and vertically placed as A4 size, phrases were written in black, 72 font size, bold and in Times New Roman character. Each phrase was placed on a different page and shown on the computer to the student one by one accordingly the teaching plan. Phrases were "Hi!, Hello!, What is your name?, My name is…., How are you?, I am fine., Nice to meet you., and Nice to meet your, too!" The phrase "My name is...", in which the students said their names, was prepared in writing on the computer according to each student's own name before the study started. The digital visualized dialogue card had all the targeted 8 phrases in speaking bubbles with a cartoon picture of two people talking to each other at the bottom of the card. Phrases were written in the speaking bubbles in the order of turns at talking. While collecting generalization data, materials differed from the digital phrase cards used for teaching, daily attendance, mass attendance and monitoring data. Phrase cards were prepared from printed A4 papers white background, a thin black frame and vertically placed as in 72 font size, bold and italic, Amasis MT Pro Black character, and green colour. The English phrases to be taught in the study were decided by considering the English curriculum of the public schools affiliated with the Ministry of National Education, and a "Phonetic Respelling" table was created by taking the opinions of an expert working as a faculty member at a state university with a PhD degree in English Teaching for the correct pronunciation of English phrases.

The pilot study of the research was conducted with a student with mild intellectual disability who was studying at the same Special Education Vocational School affiliated with the Ministry of National Education, where the research was conducted, with the permission of student's teacher and parents.

3.3. Sampling or Study Group

The study started with four students attending the 10th and 11th grades of a Special Education Vocational School affiliated to the Ministry of National Education, who were diagnosed with intellectual disability, yet one participant could not continue the study due to absenteeism and left the study. Therefore, the study was conducted with a total of three participants. In order for the participants to be included in the study, the prerequisites were that a) they are literate, b) they are able to direct their attention to visual and auditory stimuli for at least ten minutes, c) they participate in the study regularly, and d) they do not fluently know the English phrases to be studied beforehand. Information on whether the participants fulfil the specified prerequisite skills was obtained by interviewing the school principal and classroom teachers, then one-on-one sessions were held with the students and an evaluation was made, also their families were interviewed. All participants were included in the study because they fulfilled the specified prerequisite skills.

3.4. Data Analysis

The findings obtained at the end of the research were analysed through graphical analysis. The data obtained regarding the skills of reading by pronouncing correctly in English, saying the meaning in Turkish and maintaining and initiating mutual dialogue were analysed by using the line graph. Descriptive analysis technique was used in the analysis of the social validity findings of the research.

3.5. Validity and Reliability

Three types of data were collected in the study: efficacy data (monitoring and generalization), social validity data and reliability data. All of the data were collected by the implementor. In the study, reliability data were collected in 30% of all sessions by the researcher and a second observer with a Ph.D. degree in special education. Correct reactions were recorded as "+"; correct reactions; correct reactions after the clue, incorrect reactions and non-reaction were recorded as "-".

3.5.1. Collection of efficacy data

Correct and incorrect reactions of the participant during the collection of efficacy data were recorded in the instruction sessions data collection form, daily probe and probe, monitoring and generalization sessions data collection form and the percentage of correct reactions was calculated.

3.5.2. Collection of social validity data

In order to determine the opinions of the parents of the participants about the instruction of English introductory phrases and dialogue skills, semi-structured interview questions were developed by taking the opinions of two experts with Ph.D. degrees in the field of Special Education and the questions were presented in writing and collected.

3.5.3. Collection of reliability data

Inter-observer reliability and implementation reliability data were collected in at least 30% of the sessions held during the research. The reliability data of the study were collected by an independent observer and all sessions with each participant were monitored by the same person with the help of video camera recordings.

3.5.4. Collection of inter-observer reliability data

Inter-observer reliability data were collected in probe, instruction, monitoring and generalization sessions. These data were recorded in the probe, instruction, monitoring and generalization data collection form. The formula "[Consensus/(Consensus + Disagreement)] × 100" (Erbaş, 2012) was used for the analysis of inter-observer reliability data. After the reliability sessions conducted by a second observer with a Ph.D. degree in the field of Special Education, the inter-observer reliability for probe, instruction, monitoring, and generalization sessions was calculated as 100% (range, 90-100).

3.5.5. Collection of implementation reliability data

In the study, implementation reliability was collected to determine whether the independent variable was implemented as planned. Like the inter-observer reliability data, the implementation reliability data were collected in the probe, instruction, monitoring and generalization sessions and recorded in the data collection forms. Implementation reliability is the reliability calculation that evaluates the extent to which the instruction is implemented as planned. While analysing the implementation reliability data in the research, the formula "[Number of Observed Implementor Behaviors/Number of Planned Implementor Behaviors] × 100" (Erbaş, 2012) was utilized. According to the results of the evaluation carried out by an expert with a Ph.D. degree in the field of Special Education, it was determined that the implementor carried out the study on the behaviour taken into account when collecting implementation reliability data in all participants as planned and carried out all sessions at 100% reliability level.

3.6. Research Procedures

3.6.1. Researchers

The researcher who conducted the study has previously worked as an English Teacher for 15 years at all levels affiliated with the Ministry of National Education and works as a Doctor Lecturer in the Department of Special Education Teaching of a state university. The researcher conducting the implementation is a graduate of English Language and Literature with a pedagogical formation, a student of the Special Education Doctorate program who has worked as an English Teacher for five years in a private foreign language school affiliated with the Ministry of National Education, and also works as a Research Assistant in the Special Education Teaching Department of a state university.

3.6.2. Dependent Variable

The study has three dependent variables. The first dependent variable of the study is that the participants read the eight English phrases determined for the introductory dialogue by pronouncing them correctly. The second dependent variable is that they say the Turkish meanings of these phrases, and the third dependent variable is that the participants initiate and maintain a meaningful dialogue with the person they meet. In the measurement of reading skills by pronouncing English phrases correctly, each phrase card was shown to the student from the computer and the "Read the English phrase on the card" instruction was given. In the measurement of the skill to say the Turkish meanings of English phrases, the "Tell the Turkish meaning of the phrase on the card" instruction was given. In measuring the skill to initiate and maintain a mutual acquaintance dialogue, the instructions "Let's say foreign students came to your school with a project from abroad and you want to meet them. How do you initiate the conversation in English by saying "Hello!" and “How do you continue?” were presented and the participant was given 4 seconds to react, and the answers given by the participant were recorded in the data recording form. The correct reactions given by the student within the response range were recorded as "+"; incorrect reactions and non-response were recorded as "-". The scales used to measure the skill levels of the students in the research are given in Table 1, Table 2 and Table 3 below.

Table 1.

Reading English phrases by pronouncing them correctly.

1. Read the English phrase on the computer.

English Word/Phrase	**English Pronunciation (Phonetic Respelling)**	**Response Correct/Incorrect (+/-)**
Hi!	[haɪ!]	
Hello!	[hɛˈləʊ!]	
What is your name?	[wɒt s jə neɪm?]	
My name is … .	[maɪ neɪm ɪz … .]	
How are you?	[haʊ ə juː?]	
I am fine.	[aɪ əm faɪn.]	
Nice to meet you.	[naɪs tə miːt juː.]	
Nice to meet you, too!	[naɪs tə miːt juː, tuː!]	

Table 2.

Saying the Turkish meanings of English phrases correctly.

2. Say the Turkish meaning of the phrase.

English Word/Phrase	**Turkish Meaning**	**Response Correct/Incorrect (+/-)**
Hi!	Selam!	
Hello!	Merhaba!	
What is your name?	Senin adın ne?	
My name is … .	Benim adım … .	

How are you?	Nasılsın?
I am fine.	İyiyim.
Nice to meet you.	Tanıştığımıza memnun oldum.
Nice to meet you, too!	Ben de tanıştığımıza memnun oldum!

Table 3.

Initiating and maintaining a meaningful English introductory conversation with the other person.

3. Let's say that foreign students came to your school for a project from abroad and you want to meet them. Initiate the conversation by saying "Hello!" in English and continue the conversation.

Student Speech	**Teacher's Speech**	**Response Correct/Incorrect (+/-)**
S: Hi!	T: Hello!	
S: What is your name?	T: My name is … .	
S: How are you?	T: I am fine.	
S: Nice to meet you.	T: Nice to meet you, too!	

3.6.3. Independent Variable

The independent variable of the research is the direct instruction method in which digital dialogue cards are used in teaching the English phrases and mutual dialogue skills. The direct instruction method is a skill-centred and teacher-driven method. Cognitive skills are divided into small units, the units are sorted and given to the students. The teacher makes the student independent by the gradual withdrawal of cues in the content being taught. With continuous evaluations, the teacher performs the teaching by reducing or multiplying the tips or presenting the subject again. While teaching, the responsibility is initially with the teacher, but as the teaching progresses, the responsibility passes to the student. The purpose of the direct instruction method is to make the student independent in the behaviours he/she will acquire by gradually withdrawing the cues (Carnine, 1989).

3.6.4. Experimental Process

Experimental process of the research consists of the pilot implementation, collective probe, instruction, daily probe, generalization, and monitoring sessions. The sessions were held on weekdays and weekends between 11:00-12:00 in the sports room of the participants' Special Education Vocational School affiliated with the Ministry of National Education. All sessions were held with a one-to-one instruction arrangement. Social reinforcement (very good, superb, excellent) was used in all subjects to reinforce the correct reactions of the subjects in the collective probe, instruction, daily probe, generalization, and monitoring sessions, and when the study was completed, the participants were given a T-shirt or ball of the local football team. These reinforcers used in the study were decided according to the information received from the teachers, families of the participants and the participants themselves.

3.6.5. Pilot Implementation

The pilot study of the research was conducted with a student with mild intellectual disability studying at the same Special Education Vocational School with the participants of this study, in order to determine possible problems that may occur before proceeding to the main implementation phase and to make the necessary changes. Two instruction sessions were held on the same day with the student using eight English phrases. As a result of the pilot study, a total of eight English phrases aimed to be taught and steps of the teaching sessions were decided by simplifying the teaching content, and the main implementation was started.

3.6.6. Collective Probe Sessions

The first of the collective probe sessions was carried out in order to collect baseline data in all behaviours and participants simultaneously in a one-to-one instruction session. Collective probe sessions were held just before a participant started instruction sessions and when the criterion was met during the instruction.

In all collective probe phases, three attempts for each target stimulus (for the tool set of eight English phrases) was presented with 24 attempts for the "Read the English phrase on the computer." target stimulus, 24 attempts for the "Say the meaning of the phrase in Turkish." target stimulus, and 24 attempts for the "Let's say that foreign students came to your school from abroad for a project and you want to meet them. Initiate the conversation by saying "Hello!" and continue the conversation." target stimulus, with a total of 72 target stimuli.

While conducting the collective probe sessions of the research, the implementor, before starting each probe session, presented the attention providing clue to the student without showing the 8 digital vocabulary cards in the behaviours set from the computer (Tarık, we will now study English phrases which I can use for introduction. Are you ready?). Then she presented the skill instructions (Firstly, she presented the instruction "Read the English phrase on the computer." and waited for the student to react within 4 seconds; then secondly she presented the instruction "Say the meaning of the phrase in Turkish." and waited for the student to react within 4 seconds, after conducting 3 attempts for these first two skills, thirdly and finally she presented the instruction "Let's say that foreign students came to your school from abroad for a project and you want to meet them. Initiate the conversation by saying "Hello!" and continue the conversation." and conducted 3 attempts by waiting for the student to react within 4 seconds. The appropriate behaviours of the student, such as focusing on the work and directing his/her attention has been reinforced by saying, “You worked very successfully with me today, thank you. You're the best!" The implementor accepted the student reading the English phrase by pronouncing it completely and correctly within 4 seconds (response interval), correctly pronouncing the Turkish meaning of the English phrase, and initiating the English dialogue with the correct phrases and continuing the dialogue in the correct order according to the reactions from the other person, as the correct reaction. She accepted reading the English phrase by pronouncing it incorrectly or incompletely within the response range, mispronouncing the Turkish meaning of the English phrase, initiating the English dialogue with the wrong phrase or not being able to continue the dialogue, and not reacting in any way within the response range as an incorrect reaction.

3.6.7. Instruction Sessions

In the instruction sessions, first of all, the implementor became a model by showing the English phrases aimed to be taught to the participant using the direct instruction method from the computer and presenting each of them verbally twice, then as a guide, asked the participant to repeat the English phrases twice by reading them after the implementor and made pronunciation corrections when necessary. Finally, the participant was enabled to apply the skill instructions twice independently without the need for guided practices. Using the direct instruction method, immediately after the instruction of reading the English phrases and saying their Turkish meanings, the implementor opened the digital dialogue card showing the order in which the 8 English introductory dialogues should be taught to the participant from the computer and presented them to the student. The 8 phrases in the speech bubbles of two people are numbered in the order of dialogue. The implementor read the dialogue twice as a model, in order, and asked the participant to read the phrases twice in order and then to say their Turkish meanings. Then, the participant was asked to think that it was him/her who initiated the conversation by looking at the digital dialogue card and that the implementor was the responder. The implementor and participant read and enacted the dialogue twice by role play. Finally, the participant was asked to look at the digital dialogue card one last time, and the card was covered, and the participant was asked to role play by initiating the conversation and continuing it according to the feedback from the implementor without the clues. In cases where the participant was stuck or could not remember, a 4 second waiting time was given, when he/she did not react, the digital dialogue card was shown to the participant again and the role play was repeated. This process was implemented twice for each instruction session. Correct reactions in instruction sessions were defined as the participant reading the English phrases by pronouncing them completely and correctly after the skill instruction was presented, saying the Turkish meaning of the English phrase correctly, and initiating the English dialogue with the correct phrases and continuing the dialogue in the correct order according to the

reactions from the other person. The instruction sessions were continued until the participants met the criterion by reacting 100% accurately to all 24 target stimuli directed at them in the daily probe sessions.

3.6.8. Daily Probe Sessions

The daily probe sessions of the research were carried out similarly to the collective probe sessions. The difference of daily probe sessions from collective probe sessions is that data on all behaviours are collected in all participants in collective probe sessions. In the daily probe sessions, only the data related to the behaviour of the subject for whom the teaching study is carried out are collected. In the daily probe sessions, the same process as specified in the baseline probe sessions was followed. Daily probe sessions were held before the instruction sessions until the participants responded correctly at least 100% in three consecutive sessions, and the data were recorded. The correct reactions of the participants in the daily probe sessions were verbally reinforced only when the probe session was completed, and the incorrect reactions were ignored by the implementor, and the next attempt was made. In order to determine the participant performance related to the skill, the correct reactions of the participant in the daily probe sessions were taken into consideration.

3.6.9. Generalization Sessions

The generalization sessions of the research were carried out in the form of tools, environments and interpersonal generalization. Generalization sessions were held immediately after the first collective probe phase and immediately after the instruction activities of each participant were completed. In generalization sessions, differently from digital vocabulary cards in which the English phrases used in the teaching sessions are written, word cards made of paper with different font, font size, character and colour were used by a different Special Education Specialist by presenting skill instructions in the school garden. In the generalization sessions, as in other sessions, the response interval and the time between trials were arranged as 4 seconds. A total of three generalization sessions were held with presenting 24 skill guidelines in each session. Incorrect reactions of the participants were ignored, and their correct reactions were verbally reinforced at the end of the session (e.g., superb, very good, wonderful, etc.).

3.6.10. Monitoring Sessions

The follow-up sessions of the research were carried out to see if each participant could retain the behaviour gained 2, 4 and 6 weeks after the completion of instruction. Monitoring sessions are organized just like probe sessions. During the monitoring phase, reinforcement tools were faded. When the participant performed all the attempts correctly, reinforcement was presented at the end of the session. Participant's participation in the study was reinforced with verbal reinforcements in the follow-up sessions held 2 and 6 weeks later by directing their attention, and at the end of the follow-up session held 4 weeks later, it was reinforced by gifting a t-shirt to ensure the persistence of the participants.

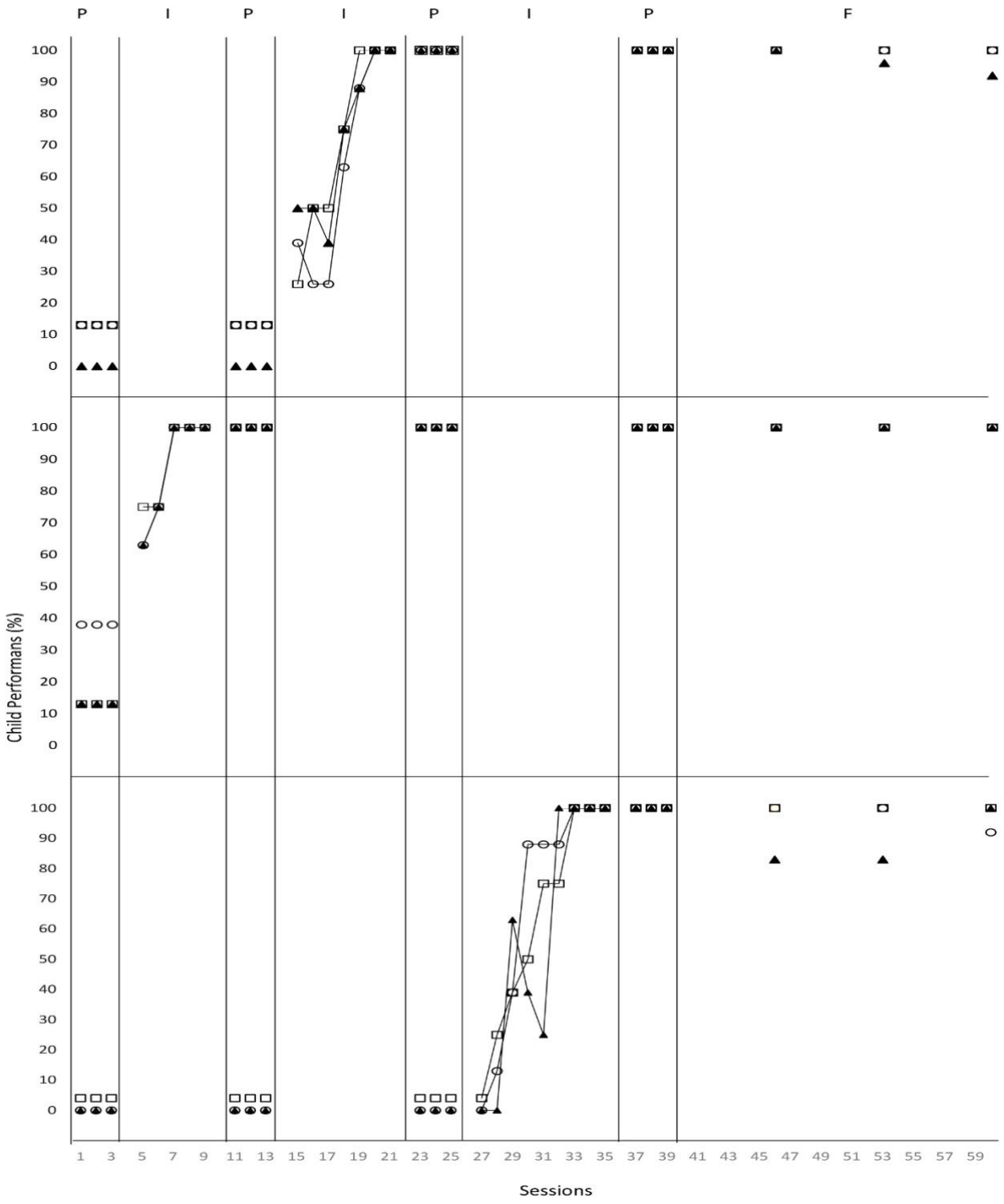
4. Findings

The pre-study and post-study skill levels of the participants in the study were examined for reading English, saying the meaning in Turkish, and speaking by establishing a meaningful dialogue. The performances of the participants regarding their ability to read “Hi!, Hello!, What is your name?, My name is …, How are you?, I am fine., Nice to meet you., Nice to meet you too!” phrases in English, taught by using the direct teaching method together with digital word cards and visualized dialogue card, their ability to say the Turkish meaning of English phrases as "Selam!, Merhaba!, Senin adın ne?, Benim adım…, Nasılsın?, İyiyim., Tanıştığımıza memnun oldum., Ben de tanıştığımıza memnun oldum." and to maintain a meaningful introductory dialogue with these English phrases were analysed and shown in Graphic 1. for Tarık, Hakan and İlhan. Graphic 1 demonstrates that all the participants’ probe sessions indicate they don’t meet the criterion, providing the teaching sessions graphic indicated an increase at the curve. Participants’ processes of meeting the criterion are given in the Graphic 1. When graphic 1 was examined, it was seen

that in the collective probe sessions held at the beginning stage Tarık performed at the level of 37.5% for English reading skills, 12.5% for the ability to say the meaning of English phrases in Turkish, and 12.5% for the ability to initiate and maintain a meaningful dialogue therefore he could not maintain the dialogue. In the implementation phase, it was observed that there was progress in the tendency and level of all three target behaviours, and Tarık met the criterion by performing at 100% for all skills in the third instruction session. In addition, Tarık performed at the level of 100% for the behaviours of reading English, saying the meaning in Turkish, initiating and maintaining dialogue in a meaningful way in the second, third and fourth collective probe sessions. Following that, Tarık maintained these skills at the 100% level in the monitoring sessions held 2, 4 and 6 weeks after the end of the instruction.

When the data related to Hakan were examined, it was seen that in the collective probe sessions held at the beginning stage, he performed at the level of 12.5% for English reading skills, 12.5% for the ability to say the meaning of English phrases in Turkish, and 0% in the introductory dialogue skill by initiating and maintaining a meaningful dialogue therefore he could not maintain the dialogue. In the implementation phase, it was observed that there was progress in the tendency and level of all three target behaviours, and Hakan met the criterion by performing at 100% for all skills in the fifth instruction session. In addition, Hakan performed at the level of 100% for the behaviours of reading English, saying the meaning in Turkish, and initiating and maintaining dialogue in a meaningful way in the third and fourth collective probe sessions. Besides, it was observed that Hakan maintained these skills at the 100% level in the monitoring sessions held 2 weeks after the end of the instruction. However, out of the three attempts of the second monitoring session conducted 4 weeks later, it was observed that he performed at the level of 95.83% in the ability to initiate and maintain a meaningful introductory dialogue in only the second attempt. Of the three attempts of the third monitoring session, which was held 6 weeks later, only on the third trial was there a significant improvement in the ability to initiate the introductory dialogue. At the same monitoring session Hakan could not say the phrase “How are you?” for the skill of maintaining the meaningful dialogue and therefore could not continue with the phrase “Nice to meet you.” So, it was observed that for the skill of initiating and maintaining a meaningful dialogue he performed at the level of 91.66%.

When the data related to İlhan were examined, it was seen in the collective probe sessions held at the beginning stage, he performed at the level of 4.16% for English reading skill because he pronounced one of the eight phrases correctly, 0% for the ability to say the meaning of English phrases in Turkish by not saying the meaning of any of the eight phrases correctly, and 0% by not being able to initiate or maintain a meaningful dialogue. In the implementation phase, it was observed that there was progress in the tendency and level of all three target behaviours, and İlhan met the criterion by performing at 100% for all skills in the sixth instruction session.



Graphic 1. Findings on participants' ability to read in English, to say the Turkish meanings of sentences, to initiate and continue the dialogue and to speak

Ilhan's behaviours of reading English, saying the meaning in Turkish, and initiating and maintaining dialogue in a meaningful way were also at 100% in the fourth collective probe session. When the

performance levels of İlhan regarding the skills he acquired were examined in the monitoring sessions held 2, 4 and 6 weeks after the end of the instruction, it was seen that he performed at the level of 83.33% in the ability to initiate and maintain a meaningful mutual dialogue in the monitoring session held 2 and 4 weeks later, and in the third monitoring session held 6 weeks later, he performed at the level of 95.33% in the ability to correctly say the meaning of the phrase in one of the three trials.

Table 4 shows the pre-test and post-test findings of the teaching sessions, as well as the follow up sessions' findings within the generalization findings of the participants for tools, environments and interpersonal.

Table 4.

Generalization findings of participants between environments, people, and tools

Subject	Pre-test			Post-test			1st Follow up			2nd Follow up			3rd Follow up		
	Rea	Mea	Spe	Rea	Mea	Spe	Rea	Mea	Spe	Rea	Mea	Spe	Rea	Mea	Spe
Across Settings															
Tarık	37,5	12,5	12,5	100	100	100	100	100	100	100	100	100	100	100	100
Hakan	12,5	12,5	0	100	100	100	100	100	100	100	100	95,83	100	100	91,66
İlhan	12,5	0	0	100	100	100	100	100	83,33	100	100	83,33	100	95,33	100
Across Participants															
Tarık	37,5	12,5	12,5	100	100	100	100	100	100	100	100	100	100	100	100
Hakan	12,5	12,5	0	100	100	100	100	100	100	100	100	95,83	100	100	91,66
İlhan	12,5	0	0	100	100	100	100	100	83,33	100	100	83,33	100	95,33	100
Across Materials															
Tarık	37,5	12,5	12,5	100	100	100	100	100	100	100	100	100	100	100	100
Hakan	12,5	12,5	0	100	100	100	100	100	100	100	100	95,83	100	100	91,66
İlhan	12,5	0	0	100	100	100	100	100	83,33	100	100	83,33	100	95,33	100

When Table 4 is examined, it is noteworthy that the generalization findings of the participants between tools, people and environments are similar to the efficacy findings. It is seen that the pre-training performance of the 1st participant Tarik regarding the English reading skill is at the level of 37.5%, the performance of saying the Turkish meaning is at the level of 12.5%, and the performance of initiating and maintaining the dialogue is at the level of 12.5%. It is seen that Tarık's performance in generalization sessions between tools, people and environments after the teaching was at the level of 100%. It is seen that Hakan, who is the 2nd participant, performs at the level of 12.5% before the instruction with his English reading skill and his ability to say the meaning in Turkish, and he performs at the level of 0% since he does not have any correct reaction in his ability to initiate and maintain a meaningful mutual dialogue. Nonetheless, it is seen that Hakan's performance in generalization sessions between tools, people and environments after the instruction is at the level of 100%. Finally, it is seen that İlhan's pre-instruction performance on English reading skills is at 12.5%, and that he performs at 0% on saying the Turkish meaning and initiating a and maintaining a meaningful mutual dialogue because he did not have any correct reaction. Similarly, it is seen that İlhan's performance in the generalization sessions between tools, people and environments post-instruction is at the level of 100%. Therefore, the participants generalized all the

skills aimed to be taught to different tools, environments, and people and learned these skills in a permanent way.

Social Validity Findings

According to the social validity data collected from the parents of the participants, the parents were satisfied with the education provided, they believed that the participants could use the skills they acquired in touristic areas or if they went abroad for a project. They have also stated that the participants quickly forgot the information they had acquired under normal conditions, however, they realized that they did not forget the skills they learned at the end of this education, and therefore they were very happy, that the English performance of the participants increased, and that they successfully completed the education. In addition, the parents pointed out that they wished for new English education sessions to be provided in terms of expressing themselves, expressing their wishes, and explaining the problems they experienced. Parents were also pleased with the fact that their children enjoyed the education, they had a very productive process, and that if an English education study is carried out again, they would like their children to take part in this education.

5. Discussion and Conclusion

In this study, the skills of (i) reading English by correctly pronouncing eight phrases consisting of "Hi!, Hello!, What is your name?, My name is…, How are you?, I am fine, Nice to meet you, Nice to meet you, too!", (ii) saying the meaning of these eight phrases in Turkish when asked and (iii) initiating an introductory dialogue with these eight phrases and maintaining this dialogue according to the feedback from the other person were taught to three students with mild intellectual disability by the use of the direct instruction method with digital phrase cards and visualized dialogue card. Moreover, the permanence of these skills after 2, 4, 6 weeks at the end of the instruction, and generalizability data with differentiated tools, in a different environment than the instruction environment and with a different expert were examined. At the same time, social validity data were collected from the parents of the participants, and it was seen that the parents of the participants were satisfied with the study and expressed positive opinions about the research.

The research findings show that computer support for the digital phrase cards and the visualized digital dialogue card used in the study have a positive effect on the learning speed of the participants, proving their effectiveness in gaining the skills to (i) read the eight targeted English phrases with the correct pronunciation in maximum six instruction sessions, (ii) to say their Turkish meanings, and (iii) to initiate and maintain a mutual dialogue in an appropriate and meaningful way. This finding is consistent with other studies in the literature showing that technology-assisted implementations and implementing computer-based technology to help students learn vocabulary/phrases, spelling or writing skills in a foreign language are beneficial. (Flores et al., 2012; Kurniati et al., 2019; Rodrigues Carreon & Serrato Salavar, 2017; Seok et al, 2015; Van der Meer et al., 2012; Vedora & Stromer, 2007). In addition, the opinions of the participants of this study have a similarity to other studies in the literature on liking the activities which are done on the computer and not being bored which is beneficial for reflecting positively on their learning processes. It is stated in the literature that the use of prepared digital materials in schools has a high effect on learning and that technological instruction tools accelerate the learning process (Snyder & Huber, 2019; Deveci Topal et al., 2023; Başar & Şahin, 2022).

Furthermore, Individualized Education Programs (IEP) are planned to ensure the students with special needs to be successful at school by identifying appropriate goals for their education plan. IEP's follow steps of assessment for student's present performance level, goals and objectives, specially planned instruction and services for these goals (Musyoka & Clark, 2015). While IEPs are executed in education institutions and rehabilitation centres within the law for students with special needs on inclusive education, the area of IEP that has been applied for a foreign language teaching is seen insufficient as the literature in Turkey

shows. Foreign language teaching IEP's awareness must be expanded in order to assist the teachers on this matter, prepare IEP's according to the special need type and level and most importantly for inclusive practices to expand their borders for a more universal point of view. This study is conducted with three students with mild intellectual disability yet, the instruction followed the steps of planning a lesson of an IEP lesson plan. Therefore, this study could prove that foreign language teaching can be added in IEP as well as curriculum development (Artiles & Ortiz, 2002; Nyugen, 2012; Miranda et al., 2017; Upa & Mbato, 2020).

The fact that for the targeted skills, participant Tarık performed at 100% level in the third instruction session, Hakan in the fifth instruction session and İlhan in the sixth instruction session shows the direct instruction method, technology-supported tools and the daily intensive instruction sessions are extremely effective and efficient in acquiring targeted skills in a short time. Furthermore, even though a non-targeted skill, all participants were able to continue an introductory dialogue initiated by someone else by saying "Hello!" based on the feedback and questions given to them. It shows that the target skills that are planned to be taught can be generalized to other skills that are not planned to be taught. However, as stated in the literature, the limitations experienced by individuals with intellectual disability in remembering and maintaining the concepts and skills they learned by forgetting quickly were similarly observed in this study. Participants Hakan and İlhan were unable to perform at 100% level and experienced a decline as they confused the order of the phrases and responded later than the specified response interval time in the monitoring sessions of the dialogue skills they acquired. Hence, in the light of these findings, in order for students with intellectual disabilities not to forget the skills and concepts taught, it also recommended in the literature to conduct reminder instruction sessions at regular intervals after the instruction sessions are completed, and to provide all kinds of materials and technological tools that students can access on their own. (Bawa & Osei, 2018).

There is no comprehensive study in our country on English education of individuals with intellectual disabilities and other special needs, and an environment where they can use the skills they have learned in daily life. The social validity data obtained from this study reveal that the participants can have the opportunity if the environments is provided to use their introductory English phrases in student exchange programs, international projects and English activities that can be done at schools. Thus, it is thought that extending the inclusive features of international projects where students with special needs can participate in and increasing the awareness of existing projects will enable both individuals with intellectual disabilities and all individuals with special needs to benefit from an integrated design. Therefore, it is recommended to increase the studies to be conducted in this field. (McLean et al, 2010).

6. Limitations

Single subject studies conducted with children or students with special needs require the same special need and the same scale of the special need of the participants, or enough number of the participants in the same scale to group a subject group or a control group. Therefore, this study is limited with three students with mild intellectual disability studying at a Special Education Vocational School in Izmir province of Turkey. In addition, the fact that monitoring sessions were completed after 6 weeks, performance levels of the participants were not checked in the following weeks and reminder sessions were not held as the school term was finished and the parents of the students' reported that they would be out of the city. Different technological teaching materials other than digital flashcards and visualized dialogue cards were not used in the study because materials used for the study were thought to be easy to prepare, accessible and applicable for teachers and families, and the participants were not provided with the opportunity to practice the skills they learned with native English speakers, constitute other limitations of the research. Therefore, a similar study can be implemented with larger sample groups at various school and education levels.

7. Recommendations

English introduction sentences and dialogue skills can be taught to students with intellectual disability or different types of disabilities by using different teaching methods and techniques such as video modelling, role play and virtual reality, as well as different technological tools, designing group trainings. Finally, a similar study can be conducted in different foreign languages such as German, French, or Italian, and the results of the research can be compared.

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