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## Examining Leisure Activity Engagement of Students with Intellectual Disability

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**Abstract:** In this research, leisure activity engagement of students with intellectual disabilities was examined. This study aims to compare the engagement of students with intellectual disability in leisure time activities that they chose with the ones that were selected by their teachers. Four students diagnosed with intellectual disability at the age of fifteen participated in this study. While the dependent variable of the study is the students' engagement in the leisure time activities, the independent variables are the students' and their teachers' leisure time activity selections. The study was designed according to the alternating treatments model, which is one of the single subject research models. The study has revealed that enabling students to choose the leisure activities is more effective in increasing the engagement of three out of four participants in those activities.

**Keywords:** *Intellectual disability, individual with intellectual disability, leisure time, leisure activity.*

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### Introduction

Leisure time concept has been a commonly used term lately. Cohen-Gewerc and Stebbins (2007) defined leisure time as a period of time in which individuals choose the activities that will make them happy by their own free will. Obinna, Owei, Ayodele, and Okwakpam (2009) categorized leisure activities as; (a) indoor activities (listening to music, reading, watching TV), (b) social activities (eating out, having fun with friends, going to a bar, etc.), (c) cultural and artistic activities (visiting an art gallery, museum, theater, exhibition or any type of activity that will raise cultural awareness), (d) sporting activities (walking, tennis, badminton, etc.), and (e) outdoor activities (having a picnic, walking, etc.).

Leisure activities which include art and game activities are a part of programs at schools where general and special education curricula are followed. While art activities may take place during leisure activities, they can also be covered within the scope of different courses and hours. Places called as interest corners at schools consist of science, nature, reading, puppetry, music, playing house, educational toys and temporary interest corners, whereas art activities include kneading, folding and/or cutting paper and painting as well as waste material utilization. It is believed that these kinds of activities contribute a lot to students.

Leisure activities facilitate students' transition to other activities by preparing them for the day (Megep, 2008, 2012). In addition, these activities are said to have a positive impact on participants' life quality, enable them to improve their social skills and foster their integration into the society (Felce & Perry, 1995; Garzia-Villamizar & Dattilo, 2011). Participation in age-appropriate leisure activities has also a beneficial effect on the social, emotional, physical and cognitive health of individuals (Caldwell, 2005). Furthermore, participation in such activities has an important place in improving the life quality of individuals with disabilities (Iwasaki, 2007; Schleien, Meyer, Heyne & Brandt, 1995). These individuals may face difficulties in access and transition process to leisure activities besides insufficient educational opportunities to learn them. Therefore, teaching leisure activities to individuals with disabilities must be a priority (Badia, Orgaz, Verdugo, Ulla & Martinez, 2011; Zijlstra & Vlaskamp, 2005).

According to Torkildsen (2005), leisure skills and activities should be included in education, and it is essential to teach such activities to individuals with disabilities so that they can be physically and psychologically healthy; thus, their life standards can be improved (Eldeniz Cetin & Cay, 2016; Kurt & Tekin Iftar, 2008; Leyser & Cole, 2004). Teaching how to get involved in leisure activities to individuals with disabilities in educational settings enables them to socialize with

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more ease by facilitating their interaction with their peers (Carter, Asmus, & Moss, 2013). Furthermore, Jerome, Frantino, and Sturmey (2007) assert that learning such activities helps these individuals to develop their levels of social interaction and activity engagement.

When all these characteristics of leisure activities are taken into consideration, it can be concluded that class teachers should regard their students' individual differences, interests and skills while implementing those activities. They should guide students during leisure activities chosen by students themselves. Teachers who work with children with disabilities should provide them with opportunities to make choices to increase their engagement in these activities. Besides, they should provide tools necessary for such activities as well as guiding students on how to use these tools. In addition, rather than engaging students with single type of activities all the time, different options should be provided. As Megep (2012) also suggests, these activities can be ordered from easy to difficult by considering students' competences.

There are various studies on teaching leisure skills and activities to individuals with intellectual disabilities in the literature (Cannella-Malone, Miller, Schaefer, Jimenez, Page, & Sabielny, 2016; Chan, Lambdin, Graham, Fragale, & Davis, 2014; Chan, Lambdin, Laarhoven, & Johnson, 2013; Cay, 2017; Dolar, Fredrick, Alberto, & Luke, 2012; Edrisinha, O'Reilly, Choi, Sigafos, & Lancioni, 2011; Eldeniz Cetin & Cay, 2016; Hammond, Whatley, Ayres & Gast, 2010; Seward, Schuster, Ault, Collins, & Hall, 2014)

In the light of the studies mentioned above, it can be said that individuals with intellectual disability often learn target leisure activities. In some of these studies, the way in which target leisure activities were determined was discussed in details. For example, in their study which aimed at teaching leisure skills to individuals with severe and profound intellectual disabilities, Wall, Gast and Royston (1999) determined target skills by directly observing the participants' choices, reviewing their individualized education plans (IEPs) and consulting the participants, their parents/ guardians, class teachers and class assistants. In another study that aimed to examine the effectiveness of video prompting in teaching leisure skills to individuals with serious disabilities, Miller (2014) sent a questionnaire to the participants' parents, guardians and teachers and asked them to mark the activities done by the participants in the past and at that moment as well as five activities they would be interested in.

However, when the related literature was reviewed, no research findings on the comparison of leisure activities chosen by the participants themselves with the ones determined by their teachers in terms of participant engagement were obtained. For this reason, this study aims to examine the engagement of students with intellectual disability in leisure activities that they have chosen and their engagement in the ones chosen by their teachers comparatively. It is believed that this research will contribute to the literature in determining leisure time activities in the education of students with special needs.

### *Purpose*

This study aims to compare the engagement of students with intellectual disability in leisure activities that they choose with the ones chosen by their teachers. In line with this purpose, the following questions were addressed:

1. What is the effect of leisure time activities determined by the selection of the students with intellectual disabilities on students' engagement in the activities?
2. What is the effect of leisure time activities determined by the teachers' selection on the engagement of the students with intellectual disabilities in the activities?
3. Do the effects of leisure time activities determined by the selection of the teachers and the students with intellectual disabilities on the status of the students' engagement in the activities differ?

## **Methodology**

### *Participants*

The study was carried out with participants selected among students studying at a Special Education Vocational School in Serdivan District of Sakarya. Four students, two male and two female, were participated in the study and code names were used instead of the participants' real names.

The first participant Mert is a 15-year-old student with the diagnosis of intellectual disability. He does not suffer from attention deficit. He is a student who possesses self-care skills as well as social and communication skills. Besides, he is able to fulfill a duty or responsibility he is assigned to, and has independent life skills. Although he is able to solve problems that require four facts, he has difficulty in making up math problems that require these facts. In addition, he can read a text and answer related questions. His physical development is consistent with his chronological age. His bone and muscle development shows the same characteristics as his peers.

The second participant Ali is a 15-year-old student diagnosed with intellectual disability. He has the basic math skills and is able to comprehend and explain a text he reads. He has self-care skills and is able to do shopping, and use public

places. He can follow the instructions given to him. His physical development is consistent with his chronological age. His bone and muscle development shows the same characteristics as his peers.

The third participant Sena is a 15-year-old student with the diagnosis of intellectual disability. She has social life and self-care skills. Besides, she has no difficulty in receptive and expressive language. She willingly follows instructions and fulfills any duty or responsibility she is assigned to. She possesses the skills of literacy and math. She can also explain an event she is involved in by establishing a cause – effect relationship.

The last participant Ozlem is a 15-year-old student with the diagnosis of intellectual disability. She possesses social life and self-care skills. She has no problem with receptive and expressive language. She willingly follows instructions and fulfills any duty or responsibility she is assigned to. She is able to create and solve problems that require four math facts. She gets along well with her peers in class.

The participants of this study were selected among individuals with intellectual disabilities who a) could use hand and eye coordination, b) could follow instructions given by the implementer, c) could follow verbal instructions given, d) could direct his/her attention to an activity, e) could participate in an activity for at least 10 minutes, and f) volunteered to take part in the research.

### *Setting and Duration*

The baseline and intervention sessions of the study were held in the implementers' classroom. The students' engagement in the activities (e.g. speed cups, super doctor, pinball) chosen by themselves and the ones chosen by their teachers were observed in their natural classroom setting. An implementer, the participants and classroom teachers were present in the classroom during the observations. The classroom is about 5x4meters big. There were two cabinets, a board, a notice board, two chairs for the teachers, five desks and chairs for the students in the classroom. All sessions of the research were conducted within the students' leisure time activity lessons (40 minutes).

### *Equipment*

The data collection forms to record the data during baseline and intervention sessions, a tablet computer to record the sessions and necessary toys for the leisure activities selected were the items used within the scope of the study. The games played in the scope of the study were given below.

1. Clifton magnetic dart game
2. Hasbro super doctor
3. Toy wooden jenga
4. Pal toy look look
5. Redka practical cups
6. Redka Corridor Strategy game
7. Speed cups
8. Foosball on wooden table top
9. King sport basketball game set
10. Pal tangram geometric shapes
11. 4M loom
12. Guess the cards- Animals

### *Research Design*

This study used alternating treatments design, one of the single subject research models. In this design, two independent variables were compared in terms of their effectiveness and efficiency on a single dependent variable. Although it is not compulsory to arrange baseline sessions in this model, it is recommended in order to provide experimental control in a study. For this reason, baseline sessions were held in this study. In the alternating treatments design, rotation is planned in a swift manner and the order of the independent variables is unbiased. While the independent variables may be presented at different hours of the day, they can be given in the same session. However, it is essential that the same number of sessions be held for both variables in order that their effectiveness and efficiencies can be determined (Gast, 2010; Tekin-Iftar, 2012). In the study, the order of the intervention of the independent variables was determined impartially. The independent variables were implemented in an unpredictable order. This prevented participants from predicting which intervention to be used in which session. The independent variables were implemented with one class-hour intervals.

### *Dependent and Independent Variables*

The independent variables are leisure activities chosen by the students themselves and the ones that their teachers selected. The dependent variable of this study is the students' level of engagement in leisure activities.

### *Behavior Definitions*

*Activity engagement:* In this study, students' sitting on their desks, looking at their teacher, listening to the teacher, following the instructions, and being engaged in a leisure activity were considered as activity engagement.

*Activity disengagement:* Students' standing up, talking to their friends, playing with an out-of-activity object and looking around were regarded as activity disengagement in this study.

### *Intervention Process*

In this study, leisure activities chosen by the students were compared with the ones chosen by their teachers in terms of their effectiveness in increasing student engagement. In order to compare the effectiveness of both independent variables, the participants' involvement in the leisure activities was observed in their classroom setting. For this purpose, baseline, intervention and final phase sessions were arranged. During the baseline sessions, a tablet computer was used to record the observations. The data obtained as a result of the observations were transferred to the observation record form and analyzed visually. During the intervention sessions, alternating treatment design was used to compare the effectiveness of the two independent variables (activity selection by the teachers and activity selection by the students) and the sessions were held with a-class-hour intervals. Then the student engagement in the activities was observed and recorded on a tablet computer. The data that was collected during each 10-second interval was recorded through whole interval recording technique and then visually analyzed. In the final phase, the independent variable whose effectiveness had been proved at the end of the intervention session was further observed in three sessions.

### *Baseline Probe Sessions*

Before the intervention, 12 age-appropriate leisure activities that could help the development of multiple areas and be played with at least two people were determined by consulting three teachers who had worked with students with intellectual disabilities for at least five years. Those leisure time activities were provided thanks to the project support numbered 2017.02.07.1250. A catalogue demonstrating the visuals of the chosen activities was prepared. Then, the catalogue and the rules of the activities given in the catalogue were explained to all students.

The baseline sessions were held before the intervention sessions and continued until stable data was obtained during four sessions. In order to provide experimental control, the baseline sessions were held. The baseline was designed to determine the performance level of the participants with respect to the dependent variable. At this stage, the dependent variable was continuously observed and recorded. During these sessions, the implementer visited the classrooms in which the participants were educated for observations. First, the class teacher presented the leisure time activity to the students. Without giving any instructions or clues, the implementer sat in a suitable place to be able to see the participants clearly, and then recorded the complete 10-minute interval observation in the data form in accordance with the whole interval recording technique.

### *Intervention Sessions*

The order of the intervention sessions which were held to identify the effectiveness of the leisure time activity selection of the students compared with the selection of their teachers in terms of student engagement were randomly arranged. During the intervention of each independent variable, the engagement and disengagement of the participants in an activity were regarded as a criterion and marked as '+' or '-' on the data record form.

During the sessions in which the student selected the activities, the catalogue was given to the students and they were asked to choose any activity they wished. Then, necessary arrangements were made for that particular activity. Later, the implementer sat in a suitable place in the classroom to observe the students. The implementer recorded the participants' involvement in the activities for 10 minutes considering the aforementioned behaviors to record the data. When a participant exhibited the determined behaviors for 10 seconds, it was marked as '+' while in case of the opposite was marked as '-'. If a participant exhibited the activity engagement behaviors until the tenth second but failed in the last second by exhibiting any of the disengagement behaviors, it was marked as '-' on the form. This is seen as a limitation of the whole interval recording technique.

During the sessions in which the teachers decided on the activities, they were free to choose and give any activity to their students. In those sessions, the students' engagement in the activities was also observed. The same procedures for the ones in which students chose the leisure activities were followed during the sessions. Since a rapid alternation of the variables is essential in alternating treatments model (Tekin-Iftar, 2012), two independent variables of the study were implemented with one-hour intervals. When one independent variable was found to be more effective than the other one, the education was carried out with the effective independent variable in the stage which was named as the last stage and data was collected continuously.

### Reliability

In the study, inter-rater reliability was calculated using the formula "Agreement/[Agreement+ Disagreement] x 100" (Alberto & Troutman, 2009; Tekin-iftar, 2012). The inter-rater reliability calculation was calculated as 97.5%.

The test-retest reliability of the study was calculated through "Observed behaviour/ Target behaviour X100" (Tekin & Kircaali-Iftar, 2001). The test-retest reliability calculation obtained from the study was calculated as 100%.

### Data Collection and Analysis

In this study, which aims to compare the effectiveness of the students' activity selection with the teachers' activity selection with regard to students' engagement in leisure time activities, data on two independent variables were collected. Holistic time interval recording was used to record the performances (activity engagement behaviors) of the participants regarding the dependent variable. In addition, the interobserver reliability and intervention reliability data were collected. Then, the participants' reactions (engagement/ disengagement) during those activities were analyzed graphically.

### Findings / Results

In this section, the findings on the comparison between the students and the teachers' activity selection in terms of their effectiveness in increasing the engagement of the students with intellectual disability in leisure time activities were presented.

*Findings on the comparison between the students and the teachers' activity selection in terms of their effectiveness in increasing the engagement of students with intellectual disability in leisure time activities*

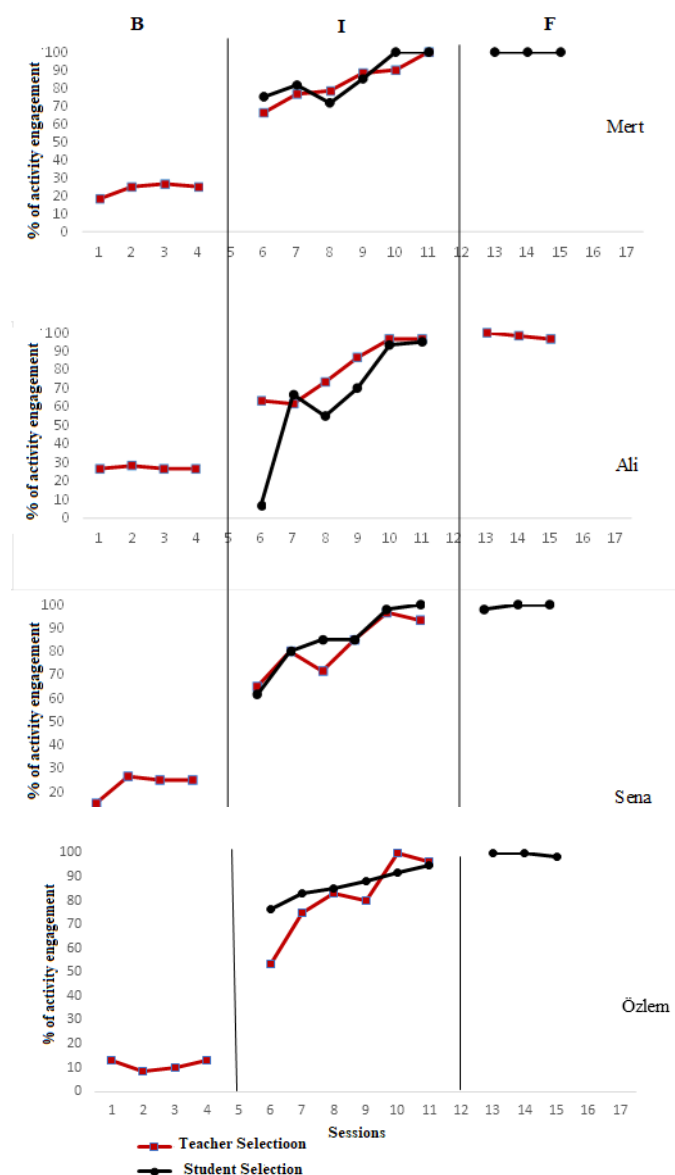


Figure.1. Participants' engagement in leisure time activities during baseline (B), intervention (I), and final phase (F) sessions

*Findings on the comparison of the effectiveness of Mert's activity selection and his teacher's activity selection in terms of increasing Mert's engagement in leisure time activities*

Figure 1 shows the percentages of Mert's engagement in leisure time activities during baseline, intervention and final phase sessions. During the baseline sessions, the percentages expressing Mert's engagement in leisure time activities chosen by his teacher were %18.3, %25, %26.6 and %25. After stable data were obtained in four sessions, intervention sessions were initiated.

During the intervention phase, a total of 12 sessions were conducted. During 6 of these, Mert selected the activities to be done while his teacher decided on the activities in the remaining sessions. During the sessions in which leisure time activities chosen by the teacher were done, the percentages showing Mert's engagement in the activities were %66.3, %76.6, %78.3, %88.3, %90 and %100. However, his engagement was %75, %81.6, %71.6, %85, %100 and 100% in the leisure time activities that he chose himself. The percentages belonging to the student's selection were higher than those belonging to his teacher's selection.

In the final phase, Mert's performance was %100 in all three sessions in which leisure activities were chosen by himself.

*Findings on the comparison of the effectiveness of Ali's activity selection and his teacher's activity selection in terms of increasing Ali's engagement in leisure time activities*

Figure 1 shows the percentages of Ali's engagement in leisure activities during baseline, intervention and final phase sessions. His engagement in the activities chosen by his teacher was measured as %26.6, %28.3, %26.6 and %26.6. After stable data were obtained in four sessions, intervention sessions were initiated.

During the intervention phase, a total of 12 sessions were conducted. During 6 of these, Ali selected the activities to be done while his teacher decided on the activities in the remaining sessions. During the sessions in which the activities chosen by the teacher were done, Ali's performance was calculated as %63.3, %61.6, %73.3, %86.6, %96.6 and %96.6. On the other hand, his engagement in the activities he himself chose was %6.6, %66.6, %55, %70, %93.3 and %95. The percentages expressing his engagement in the activities that his teacher chose were higher than the ones expressing his engagement in the activities he himself chose.

In three sessions during the final phase, his engagement in the activities selected by his teacher was measured as %100, %98.3 and %96.6.

*Findings on the comparison of the effectiveness of Sena and her teacher's activity selection in terms of increasing Sena's engagement in leisure time activities*

Figure 1 shows the percentages of Sena's engagement in leisure time activities during baseline, intervention and final phase sessions. During the baseline sessions, the percentages expressing Sena's engagement in leisure time activities chosen by her teacher were %15, %26.6, %25 and %25. After stable data were obtained in four sessions, intervention sessions were initiated.

During the intervention phase, a total of 12 sessions were conducted. During 6 of these, Sena selected the activities to be done while her teacher decided on the activities in the remaining sessions. Her engagement in the leisure time activities chosen by her teacher was computed as %65, %80, %71.6, %85, %96.6 and %93.3. However, it was %61.6, %80, %85, %85, %98 and %100 during the activities she chose on her own. The percentages belonging to the student's selection were higher than those of her teacher's selection.

In the final phase, Sena's engagement in the leisure activities chosen by her was determined as %98, %100 and %100 in the three sessions.

*Findings on the comparison of the effectiveness of Ozlem and her teacher's activity selection in terms of increasing Ozlem's engagement in leisure time activities*

Figure 1 shows the percentages of Ozlem's engagement in leisure activities during the baseline, intervention and final phase sessions. During the baseline sessions, the percentages expressing Ozlem's engagement in leisure time activities chosen by her teacher were %13.3, %8.3, %10 and %13.3. After stable data were obtained in four sessions, intervention sessions were initiated.

During the intervention phase, a total of 12 sessions were conducted. During 6 of these, Ozlem selected the activities to be done while her teacher decided on the activities in the remaining sessions. Her engagement in the leisure activities chosen by her teacher was measured as %53.3, %75, %83.3, %80, %100 and %96.6. However, it was observed to be %76.6, %83.3, %85, %88.3, %91.6 and %95 during the activities that she selected. The percentages belonging to the student's selection were higher than those belonging to her teacher's selection. In the final phase, Ozlem's engagement in the leisure activities that she chose was %100, %100 and %98.3 in three sessions.

When the tendency, stability level and stability data of the sessions in which the effectiveness of the leisure time activities determined by Mert's selection were examined, they were found to present at a level of 66.6% stability and

33.3% variation. The tendency determination data of the sessions in which the effectiveness of the leisure time activity determined by the teacher selection on the engagement were examined are similar.

When the effectiveness of the tendency, level stability and stability data of the sessions where the leisure time activity was determined by Ali's selection on engagement were examined, it showed 50% stability and 50% variation. When the tendency and level stability data of the sessions in which the effectiveness of the leisure time activity determined by the teacher selection were examined on engagement in the activity were examined, it presented a determination at the level of 33.3% and showed variability at the level of 67.7%. When the stability data were examined, although it showed 50% stability and 50% variability in the sessions where the selection was done by the student, it suggests a stability at a level of 33.3% and 67.7% variability in the opposite case.

When the effectiveness of the tendency and level stability data of the sessions where the leisure time activity was determined by Sena's selection on engagement were examined, while it showed a stability of 83%, the variability was 17%. When the tendency and level stability data of the sessions in which the effectiveness of the leisure time activity was determined by the teacher were examined, it showed a stability of 66.6% and a variability of 33.4%. When the stability data were analyzed, it was determined that the data showed 50% stability and 50% variation in the sessions where the activities were selected by the student and 66.6% determination and 33.3% variation in the ones selected by the teacher.

When the tendency and level stability data of the sessions where the effectiveness of the leisure time activity determined by the student on the engagement in the activity were examined, they show 100% stability. When the tendency and level stability data of the sessions in which the effectiveness of the leisure time activity determined by the teacher on the engagement in the activity were examined, they suggested 66.6% stability and 33.3% variability. When the stability data was examined, it indicated 100% determination in student selected sessions, whereas it presents 66.6% determination and 33.3% variability in teacher selected sessions.

### Discussion

This study aims to compare students' activity selection with teachers' activity selection in terms of their effectiveness in improving students' engagement in leisure time activities. When the findings of the study were examined, it can be concluded that leisure time activities chosen by students are more effective than the ones selected by their teachers in terms of bettering student engagement. Three of the participants, Mert, Sena and Ozlem, were more engaged in the activities that they chose themselves; namely, their teachers' activity selection had less effect on their engagement in the activities. On the other hand, when the findings on Ali's engagement in the leisure time activities are considered, it can be said that the activities selected by his teacher seem to be more effective in improving his engagement.

The reason why student selection is more effective than teacher selection for the majority of the participants can be linked to the fact that those activities are more compatible with their levels and interests. It can also be said that students spend their time in a more effective and productive way while playing games related to leisure activities that they select. Another reason why such activities are more effective can be the students' being in full charge of the selection without being given any instructions, and thus embracing those activities fully.

In a study, Melboe and Ytterhus (2016) researched into the types of leisure activities that young individuals with intellectual disabilities chose and engaged in. They found out that those individuals had a higher quality time that they spent in a more fruitful and enjoyable way while doing leisure activities they decided on. The findings of our study also revealed that three out of four participants spent a better time and thus participated more in leisure time activities which they selected themselves. In this respect, the findings of the study carried out by Melboe and Ytterhus (2016) are similar to the findings of this study.

In addition to providing an enjoyable time, leisure time activities help encouraging peer acceptance (Fischer & Barkley, 2006; Jessup, Cornell, & Bundy, 2010; King, Law, Hurley, Petrenchik, & Schwellnus, 2010). It can be said that participants have a chance to develop their social skills like communicating with their peers and sharing things with them as well as enjoying themselves thanks to the activities they have chosen. Moreover, those activities can be said to increase peer acceptance and interaction. The study conducted by Eratay (2013) indicated that individuals with intellectual disability can develop their social skills, interact with their peers and bring their problem behaviors down thanks to leisure time activities. From this perspective, the findings of this study are supported by the findings of the study done by Eratay (2013).

Another study on the leisure activity preferences of individuals with developmental and communication disabilities done by Kreiner and Flexer (2009) revealed that those individuals are able to choose leisure time activities using a leisure activity preference instrument and make decisions on their own. Their study suggests that the participants engage in the activities that they can choose of their own free will. Therefore, it can be concluded that the findings of Kreiner and Flexer's study (2009) also support the findings of this research.

According to Yalon-Chamovitz, Mano, Jarus and Weinblatt (2006), there is no significant difference between male and female participants with learning disabilities in terms of their leisure time activity preferences and choices. In this

study, it was also observed that girls and boys may choose the same games and even spend time playing together. Therefore, it can be concluded that gender has no effect on leisure activity preferences. From this perspective, the findings of this study are consistent with the findings of the study conducted by Yalon-Chamovitz, Mano, Jarus and Weinblatt (2006).

When the research findings are examined, it is seen that teachers' activity selection was effective in increasing the engagement of only one participant in the activities. The student might be more dependent on getting and following instructions due to individual differences.

A review of the literature has yielded no study on the effectiveness of students' leisure time activity selection in comparison with the effectiveness of teachers' selection on the engagement of students with intellectual disability in such activities. Thus, this study is a unique single subject study. For this reason, it is expected to contribute to not only national but also international literature.

Furthermore, it can be said that both independent variables (students' selecting activities and teachers' selecting activities) were effective in increasing the engagement of the students with intellectual disability in leisure time activities, which is the dependent variable of this study. The study shows that the independent variables had different effects on different participants.

However, as suggested by Bigge, Stump, Spagna and Silberman (1999), individuals with disabilities need to learn how to control their behaviors in order to live with others in harmony and achieve success (as cited in Yucesoy Ozkan & Sonmez, 2011). This can be possible by learning self-management strategies. The findings of this study show that three out of four participants were more engaged in leisure time activities chosen by themselves. The fact that they have chosen an activity of their own free will is a sign of their ability to take responsibility in life and manage themselves. It can also be a sign of their ability to reinforce themselves by choosing an activity to get involved in.

To the best of our knowledge, there is no study available in the related literature on the comparison of the effectiveness of the two independent variables in terms of improving the engagement of individuals with disabilities in activities. However, teaching leisure time activities to individuals with intellectual disability, allowing them to choose such activities on their own and enabling them to engage in those activities are considered to be essential since they can learn how to take responsibility and make decisions in life this way. Therefore, it is believed that research on this subject should be touched on more often in the literature.

On the other hand, there are some limitations to this study, as well. First, this study is limited to the games involved in the activities chosen by either the students or the teachers participated in this study. In the literature, it has been suggested that social validity data be collected through subjective evaluations and social comparisons (Tekin Iftar, 2012). At the end of the study, no social validity data were collected, which is one of its limitations. The study is also limited to four participants, two males and two females. Furthermore, the data were collected through whole interval recording technique during the baseline and intervention sessions. In this technique, a 10-minute time interval is divided into 10-second time intervals. If a participant exhibits the behavior for a 10-second time interval, it is marked as '+'; whereas if s/he fails to do so, it is marked as '-'. According to this technique, if the participant fails to exhibit the behavior in the tenth second, it is marked as '-' even if s/he succeeds during the preceding nine seconds. This can be considered as a limitation of the whole interval recording technique from this perspective.

### Conclusion and Suggestions

This study has revealed that the students' leisure time activity selection is more effective in improving the engagement of three participants with intellectual disability, whereas the teachers' activity selection is more effective for one of the participants. Based on these findings, the following recommendations can be made:

1. Two male and two female participants with intellectual disability involved in this study. Similar studies may be carried out with participants with different disabilities.
2. As mentioned above, whole interval recording technique was adopted to collect the data. Different observation recording techniques can be used to observe and collect data.
3. In addition, various leisure skills and activities can be taught to participants with different types of disabilities.
4. Other games can be included in leisure time activities.
5. Finally, other single-subject research models can be used to study the engagement of students with disabilities in leisure time activities.

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