



# The Effectiveness of a Behavioural Program in Improving the Executive Functions of Students with Intellectual Disabilities

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## ABSTRACT

This study aimed to identify the effectiveness of a behavioural program in improving the executive functions of students with intellectual disabilities. The study sample consisted of 38 students. There were 20 participants in the experimental group, 11 males and 9 females, and 18 in the control group. The students' ages ranged between 7 and 14 years. Teachers implemented the Institutes of Intellectual Education program in Al-Ahsa during the 2022/2023 academic year. An executive function scale and a training program based on behaviour modification strategies were used to reveal the program's effectiveness. The validity and reliability of the tools were calculated. A semi-experimental approach was used according to the simple design. A t-test was used to analyse the results. The study effectively identified the effectiveness of behaviour modification strategies in improving the executive functions of students with intellectual disabilities. It showed statistically significant differences in the executive functions scale between simple and severe disabilities and between moderate and severe disabilities. The study recommends more diverse behavioural measures to improve the executive functions of students with intellectual disabilities.

**Keywords:** Behaviour Modification, Behavioural Program, Executive Functions, Intellectual Disability, Saudi Arabia.

## INTRODUCTION

The teacher's reference guide for intellectual education curricula in the Kingdom of Saudi Arabia (Ministry of Education, 2018) defines intellectual disability as a deficiency or disability that is characterised by an evident and significant decline in mental functions and adaptive behaviour. This deficiency occurs before age 18 and manifests through a lack of conceptual, social, and adaptive practical performance skills. Executive function disruptions, which affect planning, organisation, control, and problem-solving, are common among students with intellectual disabilities and harm their ability to complete assignments and carry out daily tasks (Karten, 2018). Scholars have also demonstrated that intellectual disabilities involve cognitive processes and behaviour; therefore, strong control skills and behaviour control abilities are necessary to manage children with intellectual disabilities (Vijayalakshmi, 2019). To provide a structured environment for these individuals and manage their behaviour, the founders of experimental psychology emphasised the need for remedial education programs based on behavioural therapy (Storey, & Post, 2019). According to Al-Shammari (2019), the learning of students with disabilities has been dramatically improved using scientifically validated and efficient behavioural training methodologies such as direct teaching, functional behavioural analysis, formative assessment, evaluation, and feedback. Teachers who have received training in these methodologies are better informed and can instruct students with greater skill (Nigg, 2017). Roy, Allain, Roulin, Fournet and Le Gall (2015) demonstrated improved emotional control and a

lack of non-adaptive behaviour in individuals with minor intellectual disabilities. Their study concluded that executive function training could be used to combat non-adaptive behaviour. When teaching these children to perform tasks and skills, some of the most crucial factors that educators must consider include: 1) implementing training programs as often as possible in natural settings and using natural tools, 2) teaching the skills that intellectually disabled people frequently require, 3) using the task analysis method, and 4) actively participating in training activities (Al-Shammari, 2019).

## LITERATURE REVIEW

Researchers have developed numerous evidence-based strategies for creating favourable outcomes for disabled individuals (İşitan & Dayı, 2022). Successful practices and strategies for managing students with disabilities include positive reinforcement, discrete-trial training, cognitive behavioural intervention, functional assessment of behaviour, functional communication training, self-management, natural intervention, picture-sharing communication system, pivotal response training, response interruption and forwarding, and reinstatement. Social tales, stories, video templates, and models have also been used (Prater, 2018). According to Creedon et al. (2021), the executive system, which governs attention processes, is part of the executive function system that controls cognitive processes.

Educators use behaviour modification approaches to lessen the severity and frequency of unwanted behaviours and to promote the development of acceptable behaviours (Alderson, 2018). Some of the most frequent behaviours include harassing others, verbal abuse, stubbornness, refusing to complete assignments, interrupting teachers while they are teaching, vandalising property, and acting out stereotypes (Vijayalakshmi, 2019). To develop and train students with intellectual disabilities and provide them with various developmental skills, educators must intervene and use behaviour modification strategies; however, many behavioural intervention plans are thought not to consider the function of behaviour (Afzal, Siddique, Dogar, & Azeem, 2020).

Afzal et al. (2020) showed that behavioural treatments implemented to minimise behavioural difficulties among people with intellectual disabilities caused significant improvements. In addition, it is important to focus on a child's abilities and their family's social skills. This research highlighted the importance of good classroom management and student self-regulation in preventing the formation of behavioural issues.

Vijayalakshmi (2019) emphasised the significance of deciding on the best action to achieve more success. Positive behaviour must be consistently encouraged. Additionally, to develop adaptive behaviour, intellectually disabled people should receive training in intellectual, social, and practical skills to carry out functional performance in daily life (İşitan & Dayı, 2022). Behavioural programs can improve behaviour by strengthening positive behaviours, developing new ones, or diminishing negative ones.

### Executive Functions

Self-management involves actions intended to alter or maintain a person's behaviour. Students are instructed to examine aspects of their conduct and accurately record whether the behaviour has occurred (Nigg, 2017). A primary self-regulation problem is executive dysfunction, which necessitates self-monitoring behaviour, self-evaluation, and a sense of success (Tamm et al., 2021). According to Ghawami, Sadeghi, Raghibi and Rahimi-Movaghar (2017), executive functions are tightly controlled processes that direct behaviour in a setting that undergoes constant change. Chan, Wang and Ybarra (2021) claim that executive functions are essential for allowing actions to occur correctly. They do not simply gather and prepare external stimuli for activity.

According to Parola et al. (2020), executive functions move and manage ideas and activities, and their significance is evident in planning, directing, and proper mental performance. Tamm et al. (2021) concluded that individuals with developmental disorders exhibit executive function deficits to varying degrees. In self-regulation, behaviour control in social contexts develops from a general response to a private response (Tamm et al., 2021).

Senses and emotions overlap in executive functions, which are also cognitive processes. This overlap facilitates the application of mental strategies that promote functional interaction and permits specialised action simulation in a particular environment (Busch, Schmidt, & Hilbert, 2022). According to Richard et al. (2019), this can result in memory and attention problems, poor behaviour control, and the inability to create cognitive strategies. Executive functions also play a significant part in the processes of selective attention, control, and the construction of cognitive strategies. Busch et al. (2022) used executive functions to characterise the various cognitive processes used to manage disabled people's behaviour and elicit reactions in multiple settings. Nigg (2017) examined how executive processes, which control an individual's behaviour and educational activities, are a higher-order cognitive process.

According to Chan et al. (2021), executive functions are cognitive skills that govern and regulate behaviour. This emphasises the role of behaviour in initiating or terminating its emergence, monitoring and changing behaviour as necessary, and generalising behaviour in novel contexts. The prediction and visualisation of outcomes are made possible by executive processes in dynamic contexts (Chan et al., 2021).

According to Mehsen, Morag, Chesta, Cleaton and Burgos, (2022), executive functions contribute to behavioural control. In addition to their emotional stress, people with impairments sometimes struggle to switch topics, exhibit inflexibility and intransigence, and have difficulties in executive functioning. Alderson (2018) illustrated the importance of enhancing skills and promoting rights among individuals with disabilities. He also suggested including training to improve skills in school curriculum and activities. Roy et al. 2015 examined how executive functions and their link to daily activities affected the behaviour of children with intellectual disabilities. The study compared their effects based on the child's gender, the degree of the handicap, and the parents' educational attainment. The study revealed a significant gender difference in behavioural control, favouring girls, a higher level of emotional control, and a reduction in maladaptive behaviour in those with simple intellectual disabilities. The study also revealed that the more severe the disability, the harder it was to maintain control. It concluded that maladaptive behaviour might be decreased through training on executive functions.

Alderson's (2018) study aimed to define the services and rights of people with disabilities. The author found that their level of independence and the services they received were related to the extent of their rights. Storey, and Post (2019) investigated the association between executive processes and spotting adaptive behaviour in children with autism spectrum disorder and low IQ. The researchers created a test of executive function and another of adaptive behaviour. The study found that executive functions significantly impact verbal communication and adaptive conduct. Furthermore, cognitive processes that control thoughts, emotions, and behaviour impact adaptive social skills. Abdolmohamadi, Ashouri, Sourman Abadi and Mohammadzadeh's (2020) study aimed to predict the level of executive functions in people with disabilities by investigating their cognitive processes, ways of thinking, and emotional regulation, as well as how these relate to their motor and language capabilities. According to the study, executive functioning disorders are caused mainly by poor motor coordination, limited language ability, and poor communication.

In addition, a study by Vijayalakshmi (2019) confirmed the efficacy of functional behaviour evaluation techniques in boosting the rate and degree of reaction to instructions. The study developed a comprehensive manual for behavioural intervention planning. The outcomes demonstrated a clear improvement in the students' behavioural performance level, a decline in obstinacy and refusal, and an improvement in following directions and completing activities. Mohammadi, Mehri and Jalaei's (2021) study aimed to categorise some executive function abilities and investigate their correlation with children's gender and parental involvement. Children in the study's sample were between 4 and 6 years old. The study showed that girls performed better than boys in planning abilities, problem-solving skills, behavioural inhibition, transformation, flexibility, and working memory. The results highlighted the variety of activities parents engage in with their kids, such as cubes, language-motor training, sorting cards and images, and number and sequencing assignments.

Chan et al. (2021) aimed to identify how executive functions affect managers, supervisors, and teachers' performance. It demonstrated the importance of executive functions to creativity, problem-solving, planning, and decision-making at work. Malak (2021) identified the degree of executive function deficiencies in children with intellectual disabilities. The sample included 30 people with intellectual disabilities, aged between 4 and 18. The study used the Behaviour Rating List for Executive Functions. According to the study's findings, individuals with intellectual disabilities experience a significant convergence of executive processes. Additionally, it demonstrated no gender differences among the executive functions' constituent parts. Alajmi (2021) aimed to determine the relationship between executive mental functions, socially acceptable behaviour, and behavioural issues in students with Down syndrome. There were 31 male and female students in the study sample. The Executive Mental Functions Scale was used to rate them. The study found a strong and positive correlation between the sample's behavioural issues and deficits in executive mental processes, such as repression, cognitive flexibility, emotional regulation, working memory, and planning.

Işıtan and Dayı (2022) demonstrated the importance of teachers in determining the severity of executive function deficiencies and their connection to behavioural issues in students with impairments. The authors aimed to make counselling more effective at treating problems in the classroom. The study's findings suggested that counselling can help students with disabilities to organise their executive function activities.

## METHODOLOGY

### Study Problem

Roy et al. (2015) highlighted a clear connection between executive function deficits and the development of non-adaptive behaviour in individuals with developmental and intellectual disabilities. The study concluded that only a few known executive function dimensions are associated with non-adaptive behaviour. Roy et al. (2015) and Busch et al.'s (2022) investigations emphasise the importance of clarifying the connection between people with intellectual impairments' acceptable or undesirable actions and executive functions. Undoubtedly, training individuals with intellectual disabilities enhances their capabilities. Busch et al. (2022) recommended that training supports the skills of people with intellectual disabilities and promotes independence. This improves their quality of life and gives them crucial life skills. This study is situated within this research area and attempts to answer the following questions:

1. How effectively does a behavioural program help children with intellectual disabilities develop their executive functions?
2. Does the severity of a condition or gender affect how well children with intellectual disabilities develop their executive functions?

Behavioural intervention positively affects the academic, social, and emotional behaviour of students with intellectual disabilities. This justifies the need for research on this topic. When educating these students, a schedule of activities and a structured environment are crucial (Storey, & Post, 2019). Teachers should focus on three primary areas when organising education for students with disabilities: 1) Identifying instructional forms, such as group instruction, individual instruction, and peer instruction, related to fundamental organisational patterns. 2) Effective classroom management and sequential skill instruction to ensure that no crucial skill is overlooked and a supportive classroom environment is created 3) Managing the program so that the instructor communicates their expectations of students, outlines the skills they will learn in advance, and gives them the proper reinforcements and feedback based on the nature of their performance. These factors will:

1. Create scientific advancement in the skills development of individuals with intellectual disabilities.
2. Develop a training program that helps children with intellectual disabilities develop their executive functions.

### Significance of the Study

This study outlines how a behavioural program works and how it can improve people with intellectual disabilities' executive skills. It also helps to determine the differences in students' development of executive functions. The study also aids the development of a behavioural program to help teachers care for students with intellectual disabilities and a tool for assessing executive functioning skills.

### Study Concepts

-Behavioural Program: These are activities that adopt behaviour modification techniques. Parents and teachers use them with students who have intellectual disabilities to achieve adaptive behaviour. They are adopted in the form of a training program following this study's requirements (Vijayalakshmi, 2019).

-Students with Intellectual Disabilities: These students have been identified as having intellectual disabilities due to delays in both their cognitive and adaptive development. Their candidacy for behavioural therapy to enhance executive functions has been determined using a scale created for the study.

-Executive Functions: These are higher cognitive processes that include behavioural control, situational preparation, behavioural and mental flexibility, interdependence, and flexibility in individual responses (Brocki & Bohlin, 2004) (Inga, Arnela, & Haris, 2020). When operationalised, they are cognitive processes that provide self-regulation, behaviour control, and purposeful adaptive responses in situations requiring problem-solving.

### Study Methodology

This study was conducted after obtaining the approval of the Scientific Research Ethics Committee at King Faisal University No. (Kfu-rec/2021- DEC -EA000321). A quasi-experimental approach was best suited to achieve the study's goals. The study focuses on determining the efficacy of a behavioural program in developing executive functions. It also aims to reveal the level of executive functions as a dependent variable and measure the effect of variables. It does this by using experimental and control groups with two pre- and post-tests (gender, level of severity of intellectual disability). The study sample consists of 38 students with intellectual disabilities who have difficulties with executive functions. This was divided into 20 students in the experimental group, 11 males and 9

females, and 18 students in the control group. The ages of the students ranged between 7 and 14 years. Teachers implemented the program in the Institutes of Intellectual Education in Al-Ahsa during the academic year 2022/2023.

### Research Instrument

**Executive Functions Scale (EFS):** The researcher reviewed many scales that assess executive functions, including those developed by Busch et al. (2022), Alajmi (2021), and Işitan and Dayı (2022). The researcher subsequently created the original version of the EFS. The first dimension is planning, including 9 items. The second dimension, which has 9 items, is cognitive flexibility and initiative. The third dimension is working memory and information processing, which includes 8 items. The fourth dimension has 9 items: response control and emotional control. The fifth dimension, productivity, has 10 items. For all items in the scale's positive direction, each axis corresponds to a list of things with the qualifiers very applicable, somewhat applicable, and not very applicable. Degrees were assigned to each of the prior expressions, which were then statistically processed as follows: (3), (2), and (1) degrees, respectively. Additionally, the researcher considered the negative trend scale items when adjusting the scale.

The correlation coefficient between the degree of each item on the scale and the overall score of the dimension to which it belongs was extracted to determine the internal validity of the executive functions scale and its dimensions. This was done for 12 people outside the study sample. To demonstrate the internal consistency of the axes, the correlation coefficients were calculated between the phrases and the sum of the executive functions skills scale's domain scores. The total score ranged from 0.761 to 0.952, with statistically significant correlation coefficients at the level of 0.05. Additionally, the correlation coefficients between the sum of the scores for each domain and the scale's overall score ranged from 0.873 to 0.927. These statistically significant correlation coefficients at 0.05 demonstrate the scale's overall internal consistency. The executive functions skills total, and the sum of each domain's Cronbach's Alpha stability coefficients ranged between 0.794 and 0.813, indicating high internal consistency.

### Executive Functions Development Program

Researchers have developed behavioural training techniques, exercises, and skills to help students with intellectual disabilities develop executive job skills. These techniques target pupils who have intellectual disabilities and help them to develop executive job skills. Teachers must strengthen their skills to work with these students. The program's significance is tied to the students' executive function deficiencies. It offers processes focused on planning and arranging learning and helps students by empowering them to manage their behaviour. Students are given assignments that aid in emotional regulation, transitioning between tasks, working memory use, organisation, and planning. They use behaviour modification approaches that organise classroom duties like setting up and organising learning resources, requesting permission to participate in an activity, saying thank you for using the resources, waiting for one's turn, and completing assignments. They encourage students with intellectual disabilities to focus on their work and participate in class. They further promote knowledge, parental involvement, the monitoring of children at home, and homework assignments. They help students to actively engage in school events and activities and obey instructions. Vijayalakshmi (2019) demonstrated that behavioural training programs for individuals with disabilities include diverse tasks, direct reinforcement, and natural learning. These well-organised behavioural techniques, which include activities, games, training techniques, reward systems, and behavioural punishment, are designed to help students with intellectual disabilities improve their executive function. They also boost collaboration and promote genuine chances of success.

The students received instructions on replicating good behaviour at home and school and stopping bad behaviour. The teachers selected the students they felt would benefit most from the activities. The students' ages ranged from seven to 14. The Education Department approved the program. The students received support calculated and agreed upon by the family, teachers, and other stakeholders. The program was presented and implemented in a daily training regime that lasted three months in a classroom setting. It took place through an educational platform and fit students' regular schedules. 45 sessions were delivered over twelve weeks, each lasting between 35 and 45 minutes. The researchers organised the program, set training dates, outlined a vision for skills development, and clarified the procedures. They also monitored the program's implementation. The program's activities and goals varied depending on the student's abilities. Table 1 describes the program's steps, goals, and methods.

**Table 1.** Program stages, number of sessions, objective, and techniques

Program stage	Program objectives	Techniques used
Stage 1 (Sessions 1–2)	Welcoming the teachers and students and describing the program to the	Taking roles in the discussion, answering questions, determining the appropriate reinforcers, and



Program stage	Program objectives	Techniques used
	teachers. Defining the program's goal and the procedures to implement it. Preparing sessions, ensuring adherence to instructions, enhancing understanding of the program, and achieving mutual respect.	presenting the instructions for daily training activities.
Stage 2 Procedural training Objectives of the program (Sessions 3–20)	Improving self-initiation skills. Working individually and completing tasks independently. Enabling self-monitoring. Receiving a positive response.	Modelling, roleplaying, task analysis, waiting, feedback, and continuous reinforcement. Stopping bad behaviour, presenting instructions, and motivation.
Stage 3, Evaluation (Sessions 21–35)	Learning how to communicate ideas to others. Learning what a distractor is and what promotes task completion. Showing interest in the teacher's schedule and summer activities.	Encouraging students with intellectual disabilities to participate in individual and group activities, and responsiveness upon request, and regulating emotional response and emotional control. Task analysis and gradual completion.
Stage 4, Evaluation (Sessions 36–45)	Providing feedback. Achieving a level of independent performance through student-teacher interaction.	Functional situations, homework tracking, and following structured learning and activities.

## RESULTS

The data were analysed to determine the differences in students' executive function skills pre-test and post-test, as shown in Table 2.

**Table 2.** Differences in the experimental group's pre- and post-test executive function's skills scores

Variables	Pre-test		Po-test		Rate of change	T	Sig.
	M	SD	M	SD			
Planning	14.95	4.21	18.80	4.74	25.75	7.89	0.00
Cognitive flexibility and initiative	17.35	3.72	19.75	3.48	13.83	6.21	0.00
Working memory and information processing	13.80	3.40	16.55	3.50	19.93	6.42	0.00
Inhibit responding and emotional control	16.05	3.59	18.45	2.96	14.95	6.21	0.00
Productivity	18.25	4.62	22.15	4.36	21.37	5.70	0.00
Total scores	80.40	17.99	95.70	17.41	19.03	7.35	0.00

Table 2 shows statistically significant differences between the average post-measurement scores for the experimental sample and the mean scores of the two measurements, tribal and remote, on the executive function skills scale. The calculated "t" value ranged between 5.70 and 7.89, higher than the tabular "t" value, which ranged from 13.83% to 25.75%.

**Table 3.** Differences between the experimental and control groups' post-test scores

Variables	Pre-test		Po-test		T	Sig.
	M	SD	M	SD		
Planning	18.80	4.74	15.28	5.62	2.09	0.04
Cognitive flexibility and initiative	19.75	3.48	17.78	4.17	1.59	0.12
Working memory and information processing	16.55	3.50	14.28	4.60	1.72	0.09
Inhibit responding and emotional control	18.45	2.96	15.67	3.22	2.78	0.01
Productivity	22.15	4.36	18.06	4.35	2.90	0.01
Total scores	95.70	17.41	81.06	20.50	2.38	0.02

Table 3 shows statistically significant differences between the means of the two-dimensional assessments of the control and experimental groups in planning, non-response and emotional control, productivity, and attention. This favours the average dimension measurement of the experimental group. The "t" value of the whole scale varied between 2.09 and 2.90. This is more than its tabular value at the level of 0.05. In the areas of cognitive flexibility, initiative, working memory, and information processing, there are non-statistically significant differences between the means of the two post-measurements of the control group and the experimental dimension, where the calculated "t" values ranged between 1.59 and 1.72, which is less than its tabular value when using a level of 0.05.

**Table 4.** Effectiveness of the behavioural program in developing executive function skills according to Black's formula

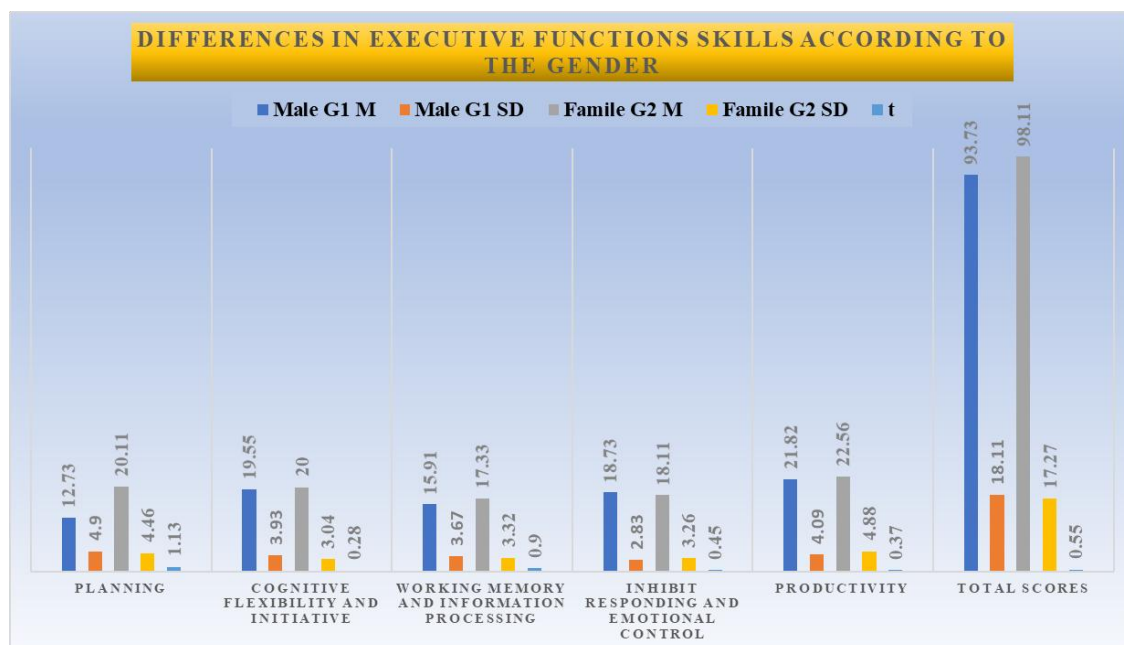
Variables	Mean of pre-test	Mean of post-test	The effect	Black's rate
Total	80.40	95.70	2.32	2.49

Table 4 demonstrates that the behavioural program increased the efficacy of students' executive function skills by 2.49.

Researchers have questioned whether the severity of the condition or the student's gender affects how well students with intellectual disabilities develop their executive functions. Indeed, students' genders are often thought to cause variations in how well a behavioural program develops executive function skills.

**Table 5.** Differences in executive function skills according to gender

Variables	Male (11)		Female (9)		T	Sig.
	M	SD	M	SD		
Planning	17.73	4.90	20.11	4.46	1.13	0.27
Cognitive flexibility and initiative	19.55	3.93	20.00	3.04	0.28	0.78
Working memory and information processing	15.91	3.67	17.33	3.32	0.90	0.38
Inhibit responding and emotional control	18.73	2.83	18.11	3.26	0.45	0.66
Productivity	21.82	4.09	22.56	4.88	0.37	0.72
Total scores	93.73	18.11	98.11	17.27	0.55	0.59



**Figure 1.** Difference differences in executive functions skills according to gender

Table 5 (Figure 1) shows no statistically significant differences between the averages of the two student gender categories in the executive function skills scale, where the calculated "t" value ranged between 0.28 and 1.13. This is less than its tabular value at the level of 0.05. Instead, the severity of students' impairment caused variations in the responses of the study sample participants.

**Table 6.** One-way ANOVA on the differences in the executive functions' skills according to disability severity

Variables	Source	df	Sum squares	Mean square	F	Sig.
Planning	Between groups	2	333.071	166.536	30.08	0.000
	Within group	17	94.129	5.537		
Cognitive flexibility and initiation	Between groups	2	127.961	63.980	10.69	0.001
	Within group	17	101.789	5.988		
Working memory and information processing	Between groups	2	106.321	53.161	7.14	0.006
	Within group	17	126.629	7.449		
Inhibit responding and emotional control	Between groups	2	74.150	37.075	6.79	0.007
	Within group	17	92.800	5.459		
Productivity	Between groups	2	207.761	103.880	11.56	0.001
	Within group	17	152.789	8.988		
Total scores	Between groups	2	3745.786	1872.893	15.81	0.000
	Within group	17	2014.414	118.495		

Given that the calculated "F" value ranged between 6.79 and 30.08, Table 6 shows statistically significant differences between the responses of the research sample on the executive functions skills scale based on the severity of the disability. The LSD test helps identify the most statistically significant difference between the averages of these groups.

Table 7. Differences in executive function skills according to disability severity (LSD)

Variables	Level	Mild	Moderate	Severe
Total Score	Mean	106.57	100.75	72.40
	Mild		5.82	34.17*
	Moderate			28.35*
	Severe			

Table 7 shows statistically significant differences between mild and severe disabilities and moderate and severe disabilities. The discrepancies between the arithmetic averages vary between 28.35 and 34.17.

## DISCUSSION

This study has revealed statistically significant differences between the control group's mean two-dimensional measurements and those of the experimental group in planning, non-response and emotional control, productivity, and the measure of executive functions overall. This favoured the experimental group's average dimensional measurement. There are non-statistically significant variations between the means of the experimental and control groups' two-dimensional measures in working memory, information processing, cognitive flexibility, and initiative. The behavioural program influenced the effectiveness of executive function skills, causing an increase of 2.49. The program aided the experimental study group's executive functions. As teachers pay close attention to students with intellectual disabilities, this highlights that behaviour modification techniques can effectively improve executive function skills and mitigate behavioural issues. This is important because behavioural issues often obstruct the regular educational process. This is in line with the findings of the studies of Roy et al. (2015), Alajmi (2021), and Storey, and Post (2019), who corroborate the efficacy of behavioural programs and their potential to reduce non-adaptive behaviour through executive function training.

The results also showed statistically significant differences between the research sample and the executive function abilities scale according to the severity of the disability. There is a sizable convergence of executive processes among individuals with intellectual disabilities. Additionally, there are no gender differences among the executive function's constituent parts. This contrasts Mohammadi et al.'s (2021) study, which showed that girls performed better than boys in their working memory, problem-solving ability, behaviour control, transformation, and adaptability. In summary, training in motor tasks successfully enhanced some executive functions in the experimental sample participants, including planning, organising, responding, and cognitive flexibility.

Malak (2021) highlighted a lack of gender differences in executive functions. Roy et al. (2015) highlighted a significant difference between the sexes in behavioural control in favour of girls, an exception to this rule. However, they concurred with this study's findings about the importance of disability severity. The authors demonstrated that individuals with mild intellectual disabilities exhibit better emotional regulation and abstinence from non-adaptive behaviour and that the severity of the level of disability increases with the difficulty of controlling it.



## **CONCLUSION AND RECOMMENDATIONS**

This study has revealed that behavioural interventions can enhance students with intellectual disabilities' executive function abilities. When teachers want to help children with intellectual disabilities improve their skills, behavioural training programs must be planned, reviewed, and audited. Additionally, these programs should be dynamic and open to revision and improvement. A program was provided to a group of individuals with intellectual disabilities. Its degree of significance varied according to the severity of the child's condition. This is expected, given the individual variations and the range of intellectual disorders. Furthermore, behavioural interventions can enhance students with intellectual disabilities' executive function abilities. The current study generally concurs with special education literature on the value of behavioural interventions for improving children with intellectual disabilities' talents and minimising their problems. This study recommends that further research should be conducted on providing training programs to girls with disabilities. Furthermore, there should be an ongoing evaluation of training programs to reduce barriers that prevent their use. The variety of behavioural interventions should be increased to help students with intellectual disabilities develop their executive function skills.

## **CLOSING REMARK**

Intellectual disabilities are one of the most critical problems in society. They are multi-faceted and multi-dimensional problems. Institutions in this field should address deficiencies in life skills and educate wider society about people with special needs and their requirements. As intellectually disabled people cannot adapt to surrounding environments, they permanently need care and attention from others.

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