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Enhancing Attention in Girls with Behavioral Disabilities Through Self-Instruction in Rafha, KSA

Daniel Morales¹, Andres Vega^{1*}, Sofia Jimenez²

1. Department of Organizational Behavior, Faculty of Social Sciences, University of Costa Rica, San José, Costa Rica Iraq.
2. Department of Human Resource Development, Faculty of Management, University of Panama, Panama City, Panama.

Abstract

This study aimed to evaluate the impact of a self-instruction program on enhancing attention among female primary school students with emotional and behavioral disorders in Rafha Province, Saudi Arabia. The research employed a quasi-experimental design featuring pretest, posttest, and follow-up assessments. The sample consisted of 20 students aged 6 to 8 years, divided equally into an experimental group and a control group, each with 10 students. A 22-session intervention was conducted, with evaluations carried out before, immediately after, and one month following the program. Results indicated that the self-instruction program significantly improved attention levels in students with emotional and behavioral disorders. Statistically significant differences were found between the experimental and control groups' attention impairment scores following the intervention. Additionally, no significant differences were observed between the posttest and one-month follow-up scores within the experimental group, suggesting sustained improvement.

Keywords: Self-instruction, Emotional and behavioral disorders, Attention impairment, Girls

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Corresponding author: Andres Vega

E-mail ✉ andres.vega@gmail.com

Introduction

Attention problems are recognized as a common and serious disorder among primary school children, significantly impacting their educational experience [1]. Early intervention is essential to mitigate the long-term consequences of these difficulties, which often include challenges in maintaining concentration, completing tasks, following instructions, and generally exhibiting weak behavioral responses [2, 3]. A considerable number of school-aged children experience attention deficits, placing additional demands on educators and highlighting the need for effective treatments. Various therapeutic approaches exist, reflecting the diverse causes of attention disorders and differing research perspectives [4, 5]. Research indicates that attention difficulties often stem from poor self-control and self-regulation skills. Children with attention deficits may possess adequate knowledge and abilities but struggle to regulate and organize their behavior, limiting their ability to appropriately inhibit incorrect responses [6].

Emerging theoretical perspectives link attention disorders to deficits in self-regulation and the inability to inhibit behaviors, thereby opening new avenues for psychological interventions [7]. This study focuses on the use of self-instruction strategies to address attention problems, based on the premise that children who learn to control their behavior in specific situations can transfer these skills to other contexts without ongoing intervention. The self-instruction technique, developed by Meichenbaum and Goodman (1971), involves teaching children with hyperactivity to use verbal self-guidance or self-talk to



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improve self-control [8, 9]. Cognitive behavioral theorists support the idea that such self-directed speech can positively influence individuals' performance and emotional regulation.

Self-instruction refers to the internal speech that guides a person in carrying out certain behaviors. Also known as self-talk, it involves the use of internal dialogue or verbal cues that individuals employ to regulate their actions [10]. The significance of the self-instruction strategy arises from this internal conversation—a silent mental discourse. This internal dialogue occurs when a person reflects on a recent experience, listens attentively, writes quietly, or engages in other learning methods. Such dialogue is not limited to mere silent communication with oneself; rather, it extends to influencing cognitive processes. It often takes the form of commands or instructions directed inward, as well as verbal patterns that help interpret emotions and perceptions [11, 12].

The study problem

This study focuses on enhancing attention through the use of self-instruction techniques. Self-instruction has been widely applied to modify a broad range of social and academic behaviors, aligning with findings from various research on self-help interventions [10]. Therefore, the primary question guiding this study is: How effective is the self-instruction strategy in improving attention among primary school students with behavioral disorders?

Objectives of the study

The study aims to:

1. Evaluate the effectiveness of a self-instruction training program in improving attention among girls in Rafha primary schools.
2. Identify differences in attention impairment scores between the experimental and control groups after applying the self-instruction intervention.
3. Examine changes in attention impairment within the experimental group across pre-test, post-test, and follow-up assessments.

Hypotheses

1. Statistically significant differences will exist between the experimental and control groups on attention impairment scores following the self-instruction program.
2. No significant differences will be found between the post-test and one-month follow-up attention impairment scores within the experimental group, indicating lasting effects.

Importance of the study

The study is significant due to its focus on young children aged 6 to 8 years experiencing attention difficulties. It serves as a valuable resource for teachers and educators by offering a self-instruction-based training program that can be implemented in classrooms. Additionally, it provides practical tools and guidance for identifying children with attention challenges and training teachers on how to support them effectively.

Terminology of the study

Self-instruction

Self-instruction refers to a structured set of modeling and exercises involving the following steps: (1) cognitive modeling, (2) overt external guidance, (3) overt self-guidance, (4) gradual reduction of self-guidance, and (5) covert or latent self-instruction [13]. According to Al-Khatib (1995), it is a form of cognitive organization aimed at training individuals to alter their patterns of self-talk, with the goal of promoting behavior change [14].

Attention disorder

Attention disorder is characterized by an individual's difficulty in maintaining focus and a tendency to become easily distracted. It involves struggles with concentrating on tasks, careless mistakes in activities like schoolwork, trouble sustaining attention, listening issues, incomplete tasks, poor organizational skills, frequently losing or forgetting items, and avoiding tasks requiring sustained effort [15].

Emotional disability

Emotional disability describes long-term conditions that significantly interfere with a child's educational performance and experience. These may include unexplained academic challenges, social anxiety, difficulty managing emotions or behaviors, mood instability, and/or anxiety related to school or personal matters. The precise cause of these emotional disturbances is often unclear (IDEA).

Theoretical framework

Attention disorder

Attention is defined as the mental focus on a specific stimulus and the individual's response to it. It is a key cognitive function that directs sensory input toward relevant behavioral situations. Attention operates selectively, concentrating the mind on a single element of experience, making that element stand out more prominently than others. This selective focus facilitates adaptation in the nervous system, allowing the individual to respond efficiently to certain stimuli while ignoring others [16]. Kirk and Chalfant (1984) described attention as a selective process that captures stimuli related to a task and centers them within one's emotional awareness.

Attention disorder

Attention disorder, also known as attention deficit syndrome, is characterized by an individual's difficulty in maintaining focus and a high tendency to become distracted. Specifically, it refers to the challenges a child faces when trying to concentrate on an activity or follow instructions [17]. It is further described as a developmental disorder involving deficits in attention, impulsivity, and self-control that appear early in life and are not attributable to intellectual disabilities, severe psychotic conditions, or sensory impairments like deafness. Symptoms include a shortened attention span, difficulty sustaining focus on required stimuli, frequent distraction, incomplete tasks, and a tendency to shift from one activity to another without finishing the first.

Attention deficit disorder affects about 5% of children and 2.5% of adults across most cultures [18, 19].

The underlying causes of attention disorders are often linked to neurological factors such as brain dysfunction, delayed neurological maturation, or biochemical imbalances. Researchers including Flick (1998), Barkley (2001), and Carney (2002) have emphasized the genetic basis of attention deficit [20–22]. Meanwhile, Beiderman *et al.* (1995) highlighted the significant impact of cultural and social factors in exacerbating symptoms [23]. Barkley suggested that a core problem in attention deficit lies in the impaired ability to inhibit behavior, which leads to deficits in key executive functions—working memory, self-regulation, motivation, internalized speech, and behavioral reconstruction. Children with attention disorder often experience dysfunction in the brain's behavioral inhibition system, which normally controls goal-directed and self-regulatory behaviors [7]. This neurological challenge is central to the present study.

Self-instruction

Cognitive-behavioral modification emerged as an integrative approach combining behavioral and cognitive perspectives, often referred to as the cognitive-behavioral approach. This framework is based on the theory that cognitive restructuring can alter behavior [24]. It focuses on how perceptions shape behavior and how distorted or irrational thoughts can lead to improper responses.

Cognitive-behavioral therapy posits that emotional and behavioral disorders stem from faulty thoughts and misperceptions. In other words, dysfunctional thinking is at the root of these issues [25].

Of particular interest are the insights from Meichenbaum, Ellis, and Beck, who argued that behavioral disorders result from distorted perceptions and illogical thinking patterns. What an individual thinks, experiences, and internalizes—including their values and motivations—directly influences their behavior. There is a clear connection and interaction between cognitive processes and emotional, social, and behavioral functioning [26].

Meichenbaum's theory is grounded in the idea that the statements a person makes to themselves—self-talk—play a critical role in shaping their behavior. According to him, human behavior is influenced by various factors beyond just actions, including physiological responses, emotional reactions, cognitive knowledge, and social interactions. Self-talk is one of these influential factors [27]. Meichenbaum's behavior modification approach involves three stages:

1. **Self-observation:** Before treatment, individuals often experience negative internal dialogues, imaginations, and self-perceptions. The aim here is to help them develop a new cognitive framework that changes their outlook.
2. **Use of internal dialogue:** In this stage, the therapist guides the individual to replace negative self-talk with positive internal conversations. The mentor monitors this process to ensure the new self-directed talk contrasts with the prior negative patterns [28].

Meichenbaum developed his self-instruction training approach between 1977 and 1985. He observed that some patients repeated similar phrases during therapy sessions, which reflected spontaneous self-talk. His method was initially applied to patients with schizophrenia, helping them engage in healthy self-dialogue [29]. He proposed the hypothesis of “verbalizations,” emphasizing that what people say to themselves influences their behaviors. Behavior, he argued, is shaped through various cognitive structures influenced by these internal verbalizations.

Self-instruction or self-talk is a vital component of cognitive-behavioral modification. Theories by Vygotsky and Luria have influenced this approach. Vygotsky suggested that self-talk serves to guide behavior, while Luria noted that self-talk could help individuals control or change their behavior [10].

Self-instruction training is a technique where individuals learn to manage challenging situations by directing themselves through specific instructions. This process involves modeling, imitation, and self-reinforcement: the therapist demonstrates appropriate behavior, and the individual practices by repeating self-directed commands aloud, such as “Do it yourself.” This method can be applied across various mental health issues including anxiety, anger, and stress [29].

Furthermore, self-instruction techniques offer valuable strategies for educators working with students who have learning difficulties or emotional and behavioral challenges. It can improve students’ academic performance, attention, social behavior, and their ability to generalize skills and maintain self-control across different contexts [10].

Self-instruction training steps

According to Meichenbaum (1977), the individual cognitive self-instruction training procedure consists of the following stages [11]:

1. An adult models the task while verbally expressing their thought process aloud (cognitive modeling).
2. The trainee repeats the task while following the adult’s spoken instructions (external self-guidance).
3. The trainee performs the task while verbally instructing themselves aloud (overt self-guidance).
4. The trainee whispers instructions to themselves while carrying out the task (whispered self-instruction).
5. The trainee completes the task while guiding themselves through silent internal speech (covert self-instruction).

Throughout these stages, four types of instructions are emphasized:

- Defining the problem (focus of the training)
- Directing attention and responses
- Self-reinforcement
- Self-assessment [12]

Emotional and behavioral disorders

There is no universally accepted definition of behavioral and emotional disorders, leading to multiple interpretations by psychologists and educators. Hallahan (1982) highlights several reasons for this lack of consensus, including [30]:

1. The absence of a precise definition for mental health.
2. Challenges in objectively measuring behavior and emotions.
3. The wide variety of behaviors and emotional expressions.
4. Diverse theoretical and philosophical frameworks applied in the field.
5. Varied socio-cultural norms regarding acceptable behavior.
6. Differences in classification systems used by various institutions [31].

Researchers have used a range of terms interchangeably with behavioral disorders, such as emotional disability, social maladjustment, non-adaptive behavior, and personality disorders [26].

Characteristics of emotional and behavioral disorders

- **Intelligence:** Children with emotional and behavioral disorders typically have an average IQ below 90, with some falling into the slow-learning category. IQ tests may be difficult to administer accurately to these children, often producing biased results that fail to reflect their true intelligence.
- **Attention:** These children often exhibit difficulties in sustaining attention on academic tasks, struggle to follow teacher instructions, and are prone to distraction and daydreaming.

Previous studies

Sattiha (1997) conducted a study focused on modifying behavioral and cognitive traits in children with attention deficit through cognitive-behavioral therapy [32]. The intervention involved observational learning and practical strategies designed to help affected children better adapt at home and school, while also providing easily trainable therapeutic methods for specialists. The sample consisted of 20 children from three primary schools in Tanta. Results demonstrated that the cognitive-behavioral therapy program effectively improved impulsive behavior, visual and auditory attention, recall ability, and memory in children with attention deficit [16].

In another study, Ammer (1980) investigated the impact of cognitive behavior modification strategies on improving attention during task performance among hyperactive students [33]. The sample included 69 students aged 11 to 16, distributed across grades six to eight, divided equally into three groups of 23 each. The first group received training using an educational strategy that modeled attentive behavior, the second group was trained in self-instruction techniques, and the third group received combined training involving both modeling and self-instruction. The study employed several assessment tools, including the Corners Scale for teacher evaluations, the Cogan test for shape recognition homogenization, the Porteus labyrinth test, and a sequential instruction booklet for qualitative skills. Findings revealed significant improvements across all groups in pre- and post-test measures, with the third group showing notably superior performance compared to the first and second groups.

Previous studies

The study by Qur'an (2006) aimed to examine the impact of a cognitive-behavioral training program—specifically self-education and self-monitoring—on treating core symptoms of attention deficit disorder with hyperactivity among primary school students in Jordan [34]. The sample included 100 students diagnosed with attention deficit disorder accompanied by hyperactivity. Results revealed statistically significant improvements in the experimental group compared to the control group, indicating the program's effectiveness in alleviating symptoms in affected students.

In a 2017 study, Zhenzi sought to evaluate the effectiveness of a verbal self-instruction program and identify which component most contributed to reducing ADHD symptoms [35]. This randomized controlled clinical trial involved 33 children with ADHD from three medical counseling centers in Hefei, China. The findings showed a significant reduction in ADHD symptoms within the experimental group after the intervention.

Glady (2015) investigated whether self-instruction training could reduce impulsive cognitive styles in children diagnosed with ADHD [19]. The quasi-experimental study involved 10 children aged 6 to 8, using a pretest-posttest design. The results demonstrated a significant decrease in impulsivity scores and errors, alongside a significant increase in response latency following the training.

Materials and Methods

The study's methodology was structured to achieve its research objectives through specific procedures. These included selecting the research sample and applying appropriate assessment tools. Additionally, the methodology outlined the key statistical techniques employed by the researcher to analyze the collected data.

Methodology

The researcher employed a quasi-experimental design, which involved purposeful sampling and handling the study variables based on hypotheses to be tested. Since it was not feasible to tightly control all experimental variables, the quasi-experimental approach was deemed appropriate for this study.

Sample

The sample consisted of 20 students diagnosed with behavioral and emotional disorders. These students were divided equally into two groups: 10 in the experimental group and 10 in the control group. The participants were selected from five different schools, with ages ranging from 6 to 8 years old, spanning grades one through three. Identification of the students was conducted using the Burks Behavioral Rating Scale and an attention deficit disorder assessment completed by teachers during the 2019/2020 academic year (1440/1441 Hijri).

The Burks scale for behavioral disorders was used to identify children exhibiting behavioral difficulties, as described in the following figure:

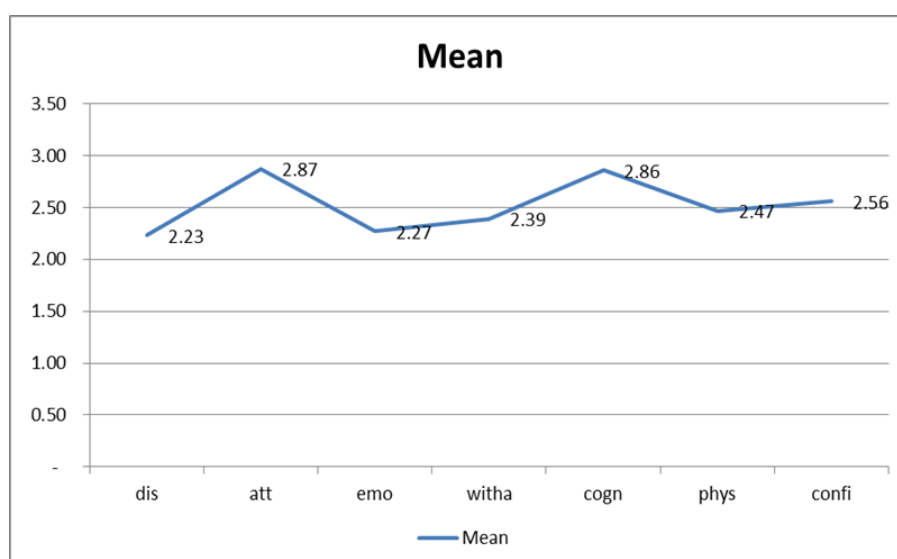


Figure 1. Burkes scale of behavioral disorders to identify children with behavioral disorders.

The diagram reveals that attention problems and ability deficits were the most common behavioral disorders among the individuals studied, while emotional disorders appeared least frequently.

To achieve the aims of the research, several instruments were utilized: the Attention Disorder Scale, the Behavioral Disorders Scale, and a Training Program. The Attention Disorder Scale was specially developed for this study, drawing inspiration from well-known tools such as Conner’s Behavior Scale. Its purpose was to identify the participants and it was employed throughout all study phases, including pre-test, post-test, and follow-up stages. The scale consists of twenty-three items designed to measure attention disorder symptoms and assist teachers in recognizing students with attention difficulties.

The researcher constructed the scale by first reviewing relevant theoretical literature and prior studies. An initial version was drafted, containing twenty-five items. This preliminary version was then presented to several specialists in education and psychology for evaluation and feedback. Based on the experts’ suggestions, the scale was modified, which involved merging certain items and eliminating others that were inappropriate, resulting in a final total of twenty-three items. Subsequently, the finalized scale was administered to a pilot sample of thirty female students drawn from the study population to assess its validity and reliability. Statistical analysis confirmed the internal consistency of the scale, with all items proving statistically significant, thereby affirming the scale’s validity as demonstrated in **Table 1**.

Table 1. validity of internal consistency.

| Correlation | No. | Correlation | No. | Correlation | NO. | Correlation | NO. | Correlation | NO. |
|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|-----|
| 0,400* | 21 | 0,503** | 16 | 0,548** | 11 | 0,561** | 6 | 0,728** | 1 |
| 0,573** | 22 | 0,536** | 17 | 0,764** | 12 | 0,484** | 7 | 0,559** | 2 |
| 0,631** | 23 | 0,601** | 18 | 0,509** | 13 | 0,803** | 8 | 0,328* | 3 |
| | | 0,810** | 19 | 0,600** | 14 | 0,395* | 9 | 0,554** | 4 |
| | | 0,513** | 20 | 0,585** | 15 | 0,623** | 10 | 0,612** | 5 |

The data presented in the previous table demonstrate that all statements within the scale have correlation coefficients that correspond significantly with the overall score, indicating that the scale consistently measures a single construct, namely attention deficit. Regarding the reliability of the scale, its stability was evaluated using a pilot sample of thirty female students from the study population through the Cronbach’s alpha method, which yielded a correlation coefficient of 0.90. Additionally, the Spearman method produced a coefficient of 0.87. These results collectively suggest that the scale possesses a high degree of reliability, as detailed in **Table 2**.

Table 2. Reliability in Alpha Cronbach and the Spearman method.

| Number | Scale type | Number of items | Number of individuals | Reliability coefficient |
|--------|-----------------|-----------------|-----------------------|-------------------------|
| 1 | Alpha- Cronbach | 23 | 30 | 0.904 |
| 2 | Spearman-Brawn | 23 | 30 | 0.875 |

The second instrument used in the study was the Burks Behavior Rating Scale, Saudi version, prepared by Radari in 2012, which is designed to measure and diagnose behavioral and emotional disorders [36]. This scale comprises 100 items divided into seven primary domains: disruptive behavior, which includes 27 items; attention and impulse control problems, consisting of 16 items; emotional problems, with 17 items; social withdrawal, covering 9 items; ability deficits, which has 10 items; physical deficits, including 10 items; and weak self-confidence, also with 10 items.

Regarding the validity of the scale within the Saudi context, several indicators confirmed its appropriateness. The content validity factor was found to be 75%, demonstrating substantial agreement on the relevance and comprehensiveness of the scale’s content. Furthermore, factor analysis was conducted to explain the percentage of cumulative variance, supporting the construct validity of the scale. The correlation coefficients between individual item scores, their respective domain scores, and the total scale score were calculated, confirming strong relationships. Additionally, the discriminative validity of the scale was assessed to ensure it effectively differentiates between different levels of behavioral and emotional disorders.

In terms of reliability, the Alpha Cronbach’s values for the different domains ranged from 0.84 to 0.91, while the overall scale achieved a reliability coefficient of 0.92, indicating high internal consistency. In the current study, the internal consistency of the scale was further confirmed by applying it to an exploratory sample of twenty female students from the study population. The correlation coefficients for the scale’s items were statistically significant and ranged between 0.898 and 0.317, reinforcing the scale’s validity in measuring a consistent construct.

The stability of the Burks Behavior Rating Scale was also assessed on the exploratory sample through the Cronbach’s alpha method, which yielded a correlation coefficient of 0.912. The Spearman method also confirmed stability with a coefficient of 0.935. These high values indicate that the scale is highly reliable and consistent when used within this population.

The third instrument in the study was the training program based on self-instruction, designed primarily to enhance attention by developing attention skills in students with behavioral disorders. The cognitive-behavioral program utilized in this study was structured around the principles of self-instruction originally proposed by Meichenbaum and Goodman (1971), which the

researchers expanded and adapted to fit the needs of students with attention disorders [8]. Drawing on previous literature and relevant studies, the program incorporated various activities specifically aimed at improving attention.

The program consisted of twenty-two organized sessions, each lasting between thirty-five and forty minutes. The sessions were conducted sequentially according to the steps of self-instruction, which also formed the specific objectives of the program. These steps included: first, the students observed the teacher performing the targeted behavior while speaking aloud, known as the cognitive modeling stage; second, the students performed the same targeted behavior while following the teacher's external verbal instructions; third, the students executed the targeted behavior accompanied by their own self-directed verbal instructions; fourth, the students whispered instructions to themselves while performing the behavior, gradually reducing the volume; and finally, the students performed the targeted behavior guided by covert or silent self-instruction.

To ensure the program's validity, the researcher presented it to a panel of ten arbitrators specializing in the fields of special education and psychology for review and feedback. Their evaluations confirmed the content and procedural validity of the program, indicating its appropriateness and suitability for the intended population. The details of the sessions were outlined comprehensively in a table, which systematically described the goals and activities of each session in alignment with the self-instruction framework.

Table 3. Distribution of the training plan for the program.

| Session | Topic | Strategies | No. of Sessions |
|-------------------------|--|--------------------------------------|-----------------|
| First | Initial Awareness | Modeling, Self-Guidance, Self-Reward | 1 |
| Second | Recognizing Conflicting Thoughts and Encouraging Positive Self-Dialogue | | 1 |
| Third | Focusing on Sensory Inputs | | 1 |
| Fourth | Practicing Active Listening and Concentrating on Audio Cues | | 1 |
| Fifth | Enhancing Audio Attention by Identifying Sound Direction | | 1 |
| Sixth | Developing Auditory Focus by Differentiating Sounds | | 1 |
| Seventh & Eighth | Training in Visual Focus | | 2 |
| Ninth & Tenth | Visual Focus Training: Completing Missing Elements, Associating Animal Images with Sentences | | 2 |
| Eleventh | Building Listening Abilities | | 1 |
| Twelfth to Fourteenth | Engaging Children in Mindfulness-Based Activities | | 3 |
| Fifteenth & Sixteenth | Emphasizing Attention to Fine Details | | 2 |
| Seventeenth | Following Instructions Effectively | | 1 |
| Eighteenth to Twentieth | Completing Tasks, Organizing Personal and School Materials, Avoiding Forgetfulness | | 3 |
| Twenty-First | Wrap-Up and Post-Program Assessment | | 1 |
| Total | | | 21 |

The self-instruction training in this study follows a structured progression that gradually shifts the student from overt guidance to internalized self-regulation. The first step involves the trainer performing the targeted behavior while speaking aloud, modeling the task clearly for the student. In the second step, the student performs the task under the coach's audible verbal direction, providing external guidance to support the student's focus and actions. The third step requires the student to perform the task while speaking aloud to herself, simultaneously receiving low-voiced verbal cues from the trainer, encouraging the student's growing independence in verbalizing instructions. In the fourth step, the student whispers instructions to herself while completing the task, and the instructor silently moves her lips without voicing words, further reducing external input. The fifth step consists of the student performing the task by silently moving her lips to verbalize instructions internally, transitioning to covert self-talk. Finally, in the sixth step, the student completes the task by engaging in hidden, silent self-instruction without any lip movement, indicating full internalization of self-guidance.

Modeling during the training is divided into four key types. The first type involves the student asking questions about the task, such as "What does the teacher want from me?" This encourages awareness and clarification of the task demands. The second type consists of providing answers to these questions in the form of cognitive practice, for example, "I understand that she wants me to pay attention to the lesson," which helps the student frame the task cognitively. The third type is self-training during the task, such as focusing attention specifically on the teacher's speech, reinforcing task engagement and concentration.

The fourth type is self-reinforcement, where the student internally praises their accomplishment, for instance, “As we did, I understood the lesson,” promoting positive self-evaluation and motivation. These modeling types work together to support the cognitive and behavioral development of students with attention difficulties through structured self-instruction.

The study focused on assessing how effective a self-instruction training program is in improving attention among girls with behavioral disorders in primary schools in Rafha Province, Saudi Arabia. The main objective was to determine if there were significant differences in attention impairment scores between the experimental group, who received the training, and the control group, who did not. These differences, if present, were attributed to the effects of the self-instruction program.

Moreover, the study examined whether the experimental group showed significant changes in attention impairment between the post-test and follow-up stages, to evaluate if the improvements were maintained over time.

To test these assumptions, the researcher applied repeated measures analysis of variance (ANOVA) to compare the attention scores across three stages—pre-test, post-test, and follow-up—between both groups. The results of this analysis are presented in **Table 4**, highlighting the statistical differences that emerged due to the training intervention.

This approach enabled the researcher to measure the program’s impact on attention and to verify the durability of its effects among the students who participated in the training.

Table 4. Two way Analysis Variance for repeated measurement.

| Source | Sum of squares | Degrees of freedom | Average Squares | F | Probability value | Conclusion |
|-----------------|----------------|--------------------|-----------------|--------|-------------------|------------------|
| Periods | 3187.600 | 2 | 1593.800 | 74.490 | .000 | There Defference |
| Groups *Periods | 2796.133 | 2 | 1398.067 | 65.342 | .000 | Interaction |
| Error | 770.267 | 36 | 21.396 | | | |

The data presented in the table shows that the interaction between the measurement periods and the groups was statistically significant. To further explore this interaction, the means and the accompanying diagram were analyzed.

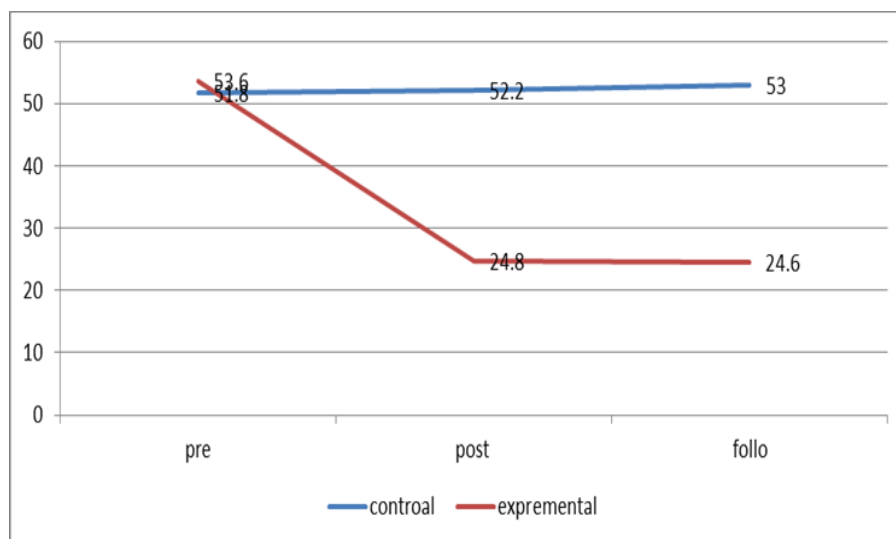


Figure 2. The scores of exeperment and control group: pre-post-follow-up tests.

Figure 2 illustrates that the experimental group’s average attention impairment score before the intervention was 53.6. This score dropped substantially to 22.1 at the post-test stage and was maintained at a similarly low level of 24.6 during the follow-up measurement. In contrast, the control group’s scores remained relatively stable, with averages of 53, 52.2, and 51.8 for the pre-test, post-test, and follow-up stages, respectively.

These results suggest that the self-instruction training program had a clear and lasting effect in reducing attention impairment among students in the experimental group, while no significant change was observed in the control group. This demonstrates the program’s effectiveness in improving attention over time.

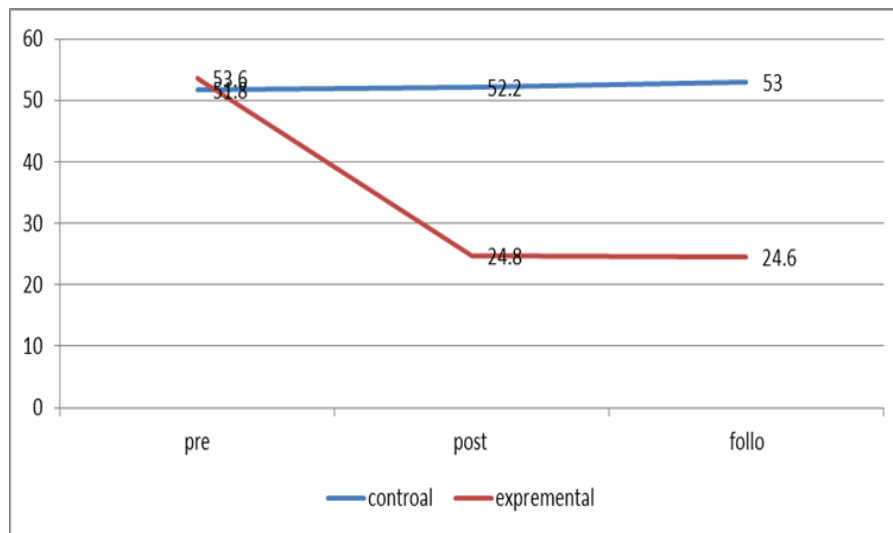


Figure 3. The, scores of exeperment and control group: pre-post-follow-up tests.

The findings clearly highlight the positive impact of the self-instruction program on female students, showing that the techniques used effectively helped reduce attention deficits and boost their focus. These results are in line with earlier studies, such as Sattiha's 2011 research, which demonstrated how cognitive-behavioral therapy and observational learning could improve attention and behavior in children. Likewise, Ammer's 1980 study showed that behavior modification strategies, especially self-instruction training, play a crucial role in enhancing attention. The 2006 Qur'an study also supports these outcomes, reporting noticeable improvement in students with attention deficit disorder and hyperactivity after a cognitive-behavioral intervention.

One explanation for the success is the active involvement and steady participation of the students in the experimental group during the program sessions. The practical and engaging nature of the techniques seemed to motivate the students, making them more enthusiastic, attentive, and willing to apply what they learned. The core strategies of self-instruction, modeling, and self-reinforcement, initially introduced by Meichenbaum and Goodman in 1971, encouraged students to regulate their behavior through guided self-talk, which enhanced their ability to focus and maintain attention.

The trainer's role was also a key factor, as her expertise in the self-instruction cognitive-behavioral model helped her manage the group effectively and foster an environment conducive to positive change in attention skills.

Regarding the second hypothesis, which expected no significant differences between post-test and follow-up scores for the experimental group, the data supports this. As shown in **Table 4 and Figure 1**, the experimental group's attention deficit scores dropped significantly from 53.6 before the program to 22.1 immediately after, and remained relatively stable at 24.6 during the follow-up period. Meanwhile, the control group's scores stayed almost the same across all measurements, confirming that the improvements in the experimental group were both meaningful and sustained over time.

The researcher interprets this outcome as evidence that the program and its applied techniques continued to enhance attention levels during the follow-up phase. The positive behaviors students acquired throughout the program, combined with the realistic and supportive learning environment provided, helped them maintain the benefits of the training. Additionally, the genuine motivation and eagerness of the participants to learn strategies that aid their attention played a crucial role in sustaining these improvements.

Overall, the findings of this study align with numerous previous investigations that have demonstrated the effectiveness of cognitive-behavioral-based programs in improving attention. This consistency holds true whether the target groups are individuals with behavioral disorders or other special education populations.

Based on these results, the study recommends several educational applications: First, teachers should be encouraged to adopt self-instruction techniques as a teaching strategy to enhance students' attention and academic performance. Second, teachers are advised to incorporate classroom activities that specifically promote attention skills. Finally, it is recommended that further research be conducted on self-instruction methods to continue validating their effectiveness in diverse educational settings.

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