

# The Impact of Implementing a Work-Based System on the Concentration of Children Diagnosed with Autism

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## Abstract

The purpose of this research is to investigate whether or not the implementation of a work system may have an effect on the concentration levels of children who have autism. How does the act of using the labor system influence the attention of youngsters who have autism? How to assess the effectiveness of different work systems in directing the focus of youngsters diagnosed with autism. The approach that was used in this investigation was to conduct an experiment with only one participant. The observation method of documenting the occurrence of the goal behavior (concentration) which was noticed via behavior was used in the collection of the data. The A-B-A design was employed for the study that was conducted. The findings indicated that there was potential for an increase in the level of concentration shown by the behavior of standing and departing from the chair while engaging in activities at the table. It is possible to draw the conclusion that the implementation of the work system has the potential to have an effect on the tendency of children with autism to get out of their chairs and move about the room while they are engaged in activity at their desk. It is believed that the implementation of the work system was successful in affecting the concentration of children diagnosed with autism.

**Keywords:** Work system • Concentration • Children with ASD • Autism

## Introduction

These certain children who are deemed to have special needs are those who have significant difficulties or abnormalities in their growth and development [1]. This relates to a person's intellectual capacity, physical health, social and emotional wellbeing, as well as their behavior as they go through the process of maturing and becoming an adult. It also encompasses the ability to see and hear clearly, among other senses. Children who have autism spectrum disorder need particular education and services that are catered to their specific needs in order to realize their full potential [2]. This is because of the unique traits that these children have.

The term "children who have special needs" encompasses a wide range of subgroupings, one of which is comprised of individuals who have been diagnosed with autism [3]. Autism is a complex developmental disorder that may afflict children at any point in their lives, from the moment they are born until they are in their early childhood years. Autism is characterized by anomalies in behavior, speech, and social interaction, as well as delays in the development of these skills. Autism may manifest itself as early as birth or as late as early childhood in certain cases [4].

Both hyperactivity, which refers to performing in a way that is too active or overly energetic, and deficiency, which refers to a lack of activity, are characteristics that are frequent in children who have been diagnosed with autism (hypoactivity) [5]. There are certain instances of autism in which the afflicted children struggle to concentrate, in addition to the characteristics that are shared by a subset of the children who are diagnosed with the condition.

The researchers were able to compile a large number of instances from the field that had almost identical patterns of behavior. Children who have autism often struggle to pay attention in class to the material that is being presented to them [6]. They don't pay attention to what the teacher is saying because they are too busy fidgeting and moving about the classroom, putting their feet up on chairs, or fiddling with their fingers as if they were playing with a pencil. When they are reading or writing, it is difficult for them to stay sitting for long periods of time. As a consequence of this, children's

scholastic development is hampered, and they continue to fall farther and further behind in their classrooms [7].

Students are expected to keep a high degree of focus throughout the whole of the learning process in order to completely acquire the abilities that they have acquired. This is the only way that they will be able to properly benefit from the education that they are receiving. The significance of this cannot be overstated. In order for students to be able to study and be successful in achieving their learning objectives, it is necessary for them to have an understanding of the relevance of attention in the overall process of learning [8].

A responsive learning approach was developed as a result of the development of work systems for children with autism that incorporate structured learning. These work systems have led to the construction of the method. Students who take advantage of this learning report lower levels of anxiety, increased levels of self-confidence, and an increased capacity to work well independently for longer periods of time [9].

## Methodology

The purpose of this sort of scientific research is to discover the effect that using a work system has on the amount of attention that is held by children who have been diagnosed with autism [10]. Quantitative methods and the kind of research that zeroes down on one topic are both used in the same way over the course of this study. This kind of research is designed to establish how much of an impact a treatment has on a single person by repeatedly giving that treatment to that person over the course of a certain length of time [11].

The use of experimental approaches allowed for the acquisition of these results over the course of this inquiry. To be more exact, the research was carried out with the help of two variables, which were referred to as the independent variable and the dependent variable, respectively. Because of this, the researchers were able to investigate the effect of the independent variable on the variable that was being studied [12].

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It is usual practice, while doing experimental research with a single subject, to test the dependent variable or the behavior that is being targeted numerous times over the course of a particular period of time, such as over the course of a week, a day, or an hour [13]. For example, this might be done. This suggests that comparisons are made on the same subject while thinking about it in a range of contexts or settings. Specifically, this shows that In the context of this study, the term "conditions" refers to situations in which the evaluation of a target behavior is carried out in natural settings without the subject being subjected to any kind of intervention [14]. This is in contrast to other conditions, which involve the subject being subjected to some form of intervention.

It is predicted that the result of the intervention will have an effect on the proportion of children who have been identified as having autism [15]. This will imply that the subject is able to produce the good conduct that was expected in place of the bad behavior that the subject had previously shown. In this experimental study, the term "Success" refers to the occurrence of a decrease in the number of changes in data acquisition or a decline in the final stages of the intervention that was given in accordance with the purpose of giving the intervention in this study [16]. Alternatively, success can be defined as the occurrence of both of these events. To put it another way, if the amount of adjustments made during data gathering decreases, then the research may be considered a success.

In this investigation, an A-B-A design is combined with a method of event recording to create a recording technique [17]. As a consequence of this, the researcher pays attention to the changes in level and the number of sessions of measurement conditions given in the baseline-1 (A-1) condition, the intervention (B) condition, and the baseline-2 condition in order to evaluate the impact of the independent variable on the dependent variable. This is done in order to determine how the independent variable affects the dependent variable. The investigation begins with these three criteria as its foundation. (A-2) until the data shows a clear trend in the direction the graph is headed and a consistent degree of change in the value being shown by the graph. The data for this study were examined using a method called visual inspection analysis [18]. This indicates that the analysis was carried out by visually inspecting the data in the graph in the same manner in which it was given.

## Results and Discussion

### Description of initial assessment data (Baseline 1)

First, the researcher will engage in observational work (also known as data collecting) prior to carrying out any kind of intervention or therapy. The first thing that was done during data collection was to gather information on the subject's level of concentration while they were seated before the

intervention was administered. Subjects before they were administered the intervention while using the A-1 designation (Baseline-1). At the end of July, there was a collection of data that took place over the course of five sessions lasting ten minutes each. On the observation sheet, the researcher noted the students' skills before they were provided an intervention by calculating the frequency and writing a tally sign next to each calculation [19].

Before the intervention, the outcomes of the children's sitting focus were found to be rather challenging. One of the students often got up from his seat to stroll about the classroom, played with his fingers, and had trouble getting back to his seat. The following are examples of variables that operate as restraints on children and their development: (a) the capacity to sit for short periods of time; for instance, while the kid is studying, the adult must provide both verbal and physical aid to help the child sits back down in his chair.

It is necessary to intervene or get therapy as a consequence of the findings of the preliminary examination regarding seated concentration. The researchers who were studying the impact of employing work systems on sitting focus in children with autism produced an intervention plan that consisted of 8 meeting sessions. This intervention plan was designed based on the requirements of the students who were participating in the study.

The table that follows contains data on the impact of raising the concentration of participants in baseline-1 (A-1) circumstances or before the intervention or therapy is delivered in Table 1.

The statistics shown in column Baseline-1 (A-1) of Table 2 are derived from the findings of the researchers' observations of an increase in the amount of time that children with autism spent sitting in concentration. This observation was conducted out over the course of five different meeting sessions, each of which lasted longer than ten minutes. The findings from the data that were gathered at the baseline A1 indicate that it is essential to implement an intervention utilizing a work system on the concentration of children who have autism. At the intervention stage, the researchers prepared a strategy, which included a total of 8 sessions.

### Intervention data

The information that is shown in Table 2, which can be found up above, demonstrates how crucial it is to improve sitting attention in order to complete each task that has been delegated by making use of the work system in a manner that is congruent with the guidelines. Subjects during the length of the intervention, which included a total of eight sessions, each of which included an observation period that lasted for 10 minutes.

### Data baseline-2

Subject data at baseline-2 (A-2) or data after the intervention or treatment was given in Table 3.

Table 1. Frequency gain at baseline-1 stage (A-1) students A.

| Observed concentration behavior                                   | Session 1 | Session 2 | Session 3 | Session 4 | Session 5 |
|---|-----------|-----------|-----------|-----------|-----------|
| Standing behavior leaving the chair                               | 8         | 8         | 7         | 8         | 7         |
| Not focusing on doing the given task by sitting still on a chair. | 4         | 3         | 3         | 4         | 3         |

Table 2. Frequency gain at the Intervention stage (B).

| Observed concentration behavior                                   | Session 1 | Session 2 | Session 3 | Session 4 | Session 5 | Session 6 | Session 7 | Session 8 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Standing behavior leaving the chair                               | 7         | 6         | 5         | 4         | 4         | 4         | 3         | 4         |
| Not focusing on doing the given task by sitting still on a chair. | 3         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |

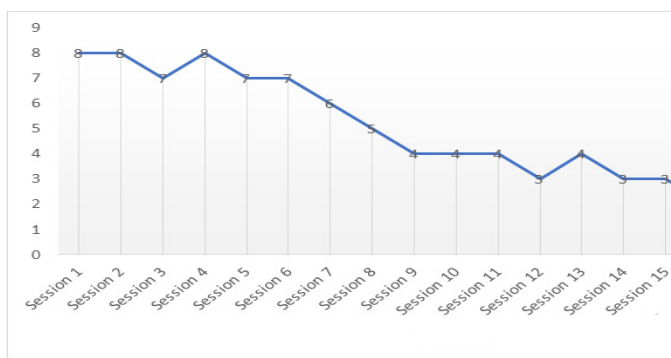
Table 3. Frequency gain at baseline-2 stage.

| Observed concentration behavior                                   | Session 1 | Session 2 | Session 3 | Session 4 | Session 5 |
|---|-----------|-----------|-----------|-----------|-----------|
| Standing behavior leaving the chair                               | 3         | 3         | 2         | 3         | 3         |
| Not focusing on doing the given task by sitting still on a chair. | 2         | 1         | 1         | 2         | 1         |

The findings shown in the table make it abundantly evident that receiving treatment or intervention via the employment system does, in fact, have an effect on the levels of seated concentration exhibited by students.

**Behavioural data: Analysis of standing up leaving the chair**

During the stage known as the baseline, the activity designated A1 was carried out for a total of five sessions. It was established fact that the direction trend was descending, and it was recognized that this was the circumstance pertaining to the baseline-1 condition. A variable equal to sixty percent was shown to be associated with the learned propensity of stability by the goal behavior. It can be seen from the trace data on the target behavior that relates the information obtained at the A1 baseline stage that it is going in a downward direction. In spite of the fact that the statistics on the target behavior have a propensity to reflect a downward trend, this means that assistance may be supplied immediately in order to establish whether or not the target behavior may be changed (Figure 1).



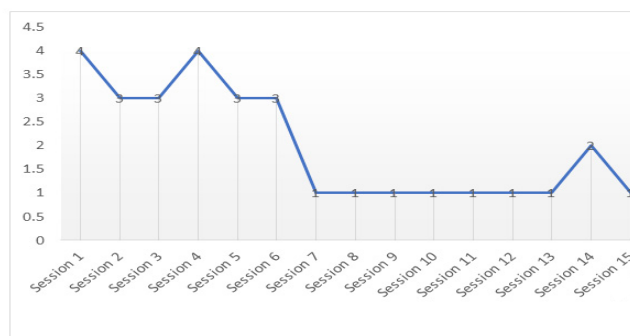
**Figure 1.** Trends in the direction of behavior standing leaving the chair. Note: (—) Frequency.

The direction trend that was known in this study and that was gained at the intervention stage suggested a negative trend; nevertheless, improvements were made during the course of the eight sessions that were carried out at stage B of the intervention procedure. The person in question was given a propensity of stability score of fifty percent, which suggests that there was a variety of data collected when the target behavior intervention stage was being carried out. Based on the trace data on the target behavior that connects the information that was acquired during the intervention stage, it seems as if it will continue to go in a bad way. The degree of stability as well as the range of stability in the goal behavior demonstrates that the data is not stable, and it also demonstrates that the level variations that take place are having an influence on concentration even though it is decreasing. Both of these things demonstrate that the data is not stable.

In addition, there were a total of five sessions conducted during the A2 stage. The direction trend that was created at the baseline stage A2 shows some indication of moving in a horizontal manner. After receiving an intervention that was intended to induce a greater degree of stability in the behavior that was being targeted, the data supplied by the variable shows that the percentage of stable behavior increased to 80%. Trace data on the behavior of standing and leaving the chair show that there was a decrease in the amount of time spent doing so. This was the case despite the fact that the behavior itself did not change. Researchers were able to draw the conclusion as a result of this that the use of work systems may have an influence on the concentration of youngsters who have autism.

**Data analysis: Not focusing on doing the given task by sitting still on a chair**

The evaluation of the trend toward data gathering does not place a primary emphasis, in light of the data that were provided, on the subject doing the designated activity while seated on a chair, as was the case during phases A1, B, and A2 when the middle split approach was used (Figure 2).



**Figure 2.** Directional tendency not focusing on the given task by sitting still on a chair. Note: (—) Frequency.

It is possible to notice a decline in behavior by looking at the graph that is located above this one. As a result, it is common knowledge that the trend in the baseline-1 condition (A-1) is unchanging, that it declines throughout the intervention period, and that it also lowers in the baseline-2 condition.

Because there has been no intervention up to this point in the baseline stage of A1, the condition of A1 often begins in a level baseline. The frequency of the conduct of students who did not concentrate on completing the assigned work by remaining still on a chair was counted with frequency from the beginning of the session until the very end.

In the intervention condition (B), the orientation of the graph is steady and tends to go in the opposite direction. This occurs as a result of the fact that during the early part of the session, the students' behavioral capacity was not focused on doing the assigned job by sitting motionless on a chair. As a result, they experienced a little frequency until it ultimately diminished.

Although the baseline state of A2 is becoming worse as the graph moves in that direction, the outcomes are getting better. The conduct of students who did not concentrate on completing the assigned work by sitting quietly on a chair became a bit more frequent beginning with the first session and continuing until the final session.

At the first stage, A1, which lasted for five sessions, the trend was horizontal, and the goal behavior showed a propensity for stability by displaying a variable of 60%. This was determined after the baseline stage was completed. According to the traces of data on the goal behavior that link the data gathered at the baseline stage, A1 indicates a horizontal orientation. (Case in point) Even if the statistics on the target behavior are very consistent, this fact suggests that an intervention may be implemented right away to determine whether or not the usage of the work system can have an effect on the target behavior.

Then, when the intervention stage (B) was carried out for a total of eight sessions, the results revealed that the direction trend was pointing in a decreasing direction. The individual received a tendency of stability of 87% while the target behavior intervention stage was being performed, which indicated that the data were stable. According to the trace data on the target behavior that links the data gathered during the intervention stage, it seems to be going in the right direction, which is a downward trend. The level of stability in the target behavior, as well as the range of stability in the target behavior, demonstrates that the data is stable. The level change that takes place is that there is a decrease in the behavior of students who are not focusing on doing the given task by sitting still on a chair. This demonstrates that the intervention that was provided to the subject in the form of the utilization of the work system may influence a child's ability to concentrate when they have autism [20].

In addition, there were a total of five sessions conducted during the A2 stage. The direction trend that was recorded at the baseline stage A2 shows a downward tendency, which is visible if one looks closely enough. The information gathered after receiving an intervention with a tendency for stability in the behavior of pupils without focused on the given job by

sitting still on a chair discloses a variable that is sixty percent of the time. The intervention was carried out in order to bring about the aforementioned pattern of consistent conduct among the children. The quantity of changeable data and fluctuations in level that occur have decreased, as shown by the data trail on the behavior of pupils who are not focused on the job that has been given to them by sitting motionlessly on a chair. Researchers were able to draw the conclusion as a result of this that the use of work systems may have an influence on the concentration of youngsters who have autism [21].

It has been shown that this research was successful, and the conclusions drawn from it led to a change (decrease). The observed and measured data suggests that there is a fall in the frequency of occurrence data if there is a reduction in the frequency of the behavior of standing up, leaving the chair, and participating in learning activities at the table (work system). It is possible to assess this by contrasting the frequency of the events that took place in the early stages with the frequency of the occurrences that took place after the intervention was carried out.

The data that were collected at the time of the intervention revealed that there was a drop (a reduction) in the frequency of the behavior of standing and leaving the chair as measured by behavior, when compared to the frequency of behavior that occurred before the intervention. This was discovered when the data were compared to the frequency of behavior that occurred before the intervention. This is evident from the presentation of the data in the table of the results of the analysis of the behavior of standing and leaving the chair, both of which can be seen and measured. This shows that the behavior of standing and leaving the chair can be observed and measured. The results of the research are shown in the table below.

It is possible to draw the conclusion that the experimental study that was carried out using a work system as a part of the Single Subject Research may help minimize the standing behavior of children with autism, which in turn may have an effect on the sitting concentration of children with autism. This conclusion is reachable because it is possible to draw the conclusion that it was carried out as part of the Single Subject Research.

The results of the research that was conducted make it abundantly evident that the use of a work system is capable of inducing an increase in the number of autistic children who are present in a given population. As a result of this study's findings, one possible implication is that the use of a work system may have a bigger impact on the seated attention of children with autism when these children are engaged in educational endeavours. Additionally, the utilization of the work system may serve as a reference for teachers who are attempting to boost the attention levels of autistic children while they are engaged in the process of learning [22]. This is possible because of the work system's ability to provide children with a sense of purpose and accomplishment.

## Conclusion

The data on concentration measurement that was noticed by the behavior of remaining seated throughout the experiment. In children with autism, carrying out tasks on the table showed a lowering or decreasing frequency of events in the last sessions of the intervention stage (B), which was facilitated by the use of the work system. The data analysis of the measurement outcomes at the baseline (A1), intervention (B), and baseline (A-2) phases reveals this to be the case.

According to the data that was collected, the frequency of the behavior of standing up and leaving the chair while carrying out tasks on the table might decrease with the usage of the work system, which indicates that it can impact the concentration of children who have autism. The researcher is thus able to draw the conclusion that the implementation of the work system is stated to have an influence on the concentration of children who have autism.

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