

THE EFFECT OF APPLIED BEHAVIOR ANALYSIS (ABA) THERAPY ON  
SHOUTING AND HITTING BEHAVIORS IN CHILDREN WITH INTELLECTUAL  
DISABILITIES IN A SCHOOL ENVIRONMENT

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Abstract

Children with Intellectual Disabilities sometimes show problematic behaviors in class, like yelling or hitting others. These actions can hinders their ability to learn and make friends at school. Applied Behavior Analysis that focuses on changing behavior through reward systems. Basically they try to encourage desirable behaviors by giving positive feedback. A recent study was done with five children aged 8 to 12 with Intellectual Disability who had issues with shouting and hitting. The ABA therapy were used for two months in a school setting. The techniques like breaking tasks into small steps, using picture cards for communication, and token reward charts were used in the intervention phase to alternate the behaviors. Before starting treatment, the behavior were measured how often the behaviors happened. After eight weeks of consistent therapy sessions, the post intervention was done in which the reduction in behaviors and efficacy of the therapy was checked. The results showed yelling incidents decrease by about 55 percent on average. Physical outbursts decreased by similar numbers according to teacher reports and observation logs. The team noted that the improvements came from structured routines and the immediate reinforcement for good behavior. Some kids responded better to visual tools while others needed more physical activity breaks built into their day. Teachers reported fewer classroom disruptions overall by the program's end. Shows ABA could be a good option for schools dealing with challenging behaviors in special needs students. Though the sample size was small, the consistency across participants suggests the other study in the future with the bigger sample size as well as for a long time as longer term studies would help confirm if changes remain consistent for the long time.

**Keywords:** Applied Behavior Analysis, intellectual disability, challenging behavior, ABA therapy, school environment, discrete trial training, PECS, token economy

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## 1. INTRODUCTION

Intellectual disability, or ID, is a developmental condition marked by serious challenges in how people think and handle daily life activities. We are talking about basic social skills and practical tasks here, according to AAIDD's 2021 definition. These issues usually start showing up when someone's young, messing with how they learn things and interact with others, as Schalock's team noted back in 2010. Worldwide numbers suggest between 1% to 3% of people have this condition. However, those numbers shift depending on people's financial and culture that where people are living and do they not have stigma attach to the illness as well as do they have a money to get help on their own. WHO's 2022 data says about 93 million individuals globally are dealing with Intellectual Disability right now. Which really shows why schools and support systems need to step up for the rights of these individuals in respect of daily living activities.

Children with Intellectual Disability often act out in ways that cause problems. We are talking hitting others, yelling, hurting themselves the kind of activities that makes classroom life difficult. According to Emerson 2001. These behaviors get extra tricky in school settings where there's all these rules about paying attention and behaving right. Horner and his partner pointed that out twenty years ago already. Studies say between 10% to 15% of people with ID have these undesirable behaviors, though some school-age groups show even higher rates according to Matson's 2008 research. Reasons vary as because of lack of communication skill they cannot communicate their needs well, get frustrated easily, or deal with sensory overload as Oliver observed back in years. The hitting and shouting especially? They wreck class activities fast, make other kids keep their distance, sometimes leading to getting kicked out of regular school programs as McDonnell found in 2015 studies. The thing is these behaviors do not just disappear on their own. Everyone working in special education knows classrooms can turn into battle grounds real quick when these issues flare up. Teachers end up spending more time managing meltdowns than actually teaching. Which leaves everyone frustrated kid included stuck in this cycle that's hard to break without proper support systems in place. You will notice these patterns especially in underdeveloped schools where staff is not trained to handle difficult behavioral needs properly. It's not just about having patience either there's specific techniques that actually work better than others for reducing situations before they blow up completely. Anyway that's the basic picture when it comes to ID-related behavioral challenges in educational settings from what current research shows anyway.

Handling difficult behaviors in children with intellectual disabilities need more time and concentration to complete their daily life tasks and school activities. One confirmed method here is Applied Behavior Analysis (ABA) which is going to change the whole behavior of children. This approach uses learning theories to change behaviors that really affect someone's life, according to Cooper and others from 2020. It's all about operant conditioning techniques, modification what happens before and after actions to increase good behaviors while decreasing the negative behavior (Baer, 1968).

They've got specific techniques under ABA. Discrete Trial Training breaks skills into small steps for teaching. Picture Exchange Communication System uses images to help with talking. Token Economy systems give tokens for positive behavior that children can perform for rewards later, as Leaf's explained in 2016. Studies show ABA works well across different setups, especially for autistic children but also broader intellectual disabilities (Smith & Iadarola's 2015).

Now here's the thing while ABA's is considered the pillar in clinics and homes, schools are a different beast altogether according to Carr's 1999 research. Classrooms offer real-world spots to see behaviors unfold socially and academically while helping skills stick around through practice aligned with Gresham and Kern's 2004 take. But schools often have different problems like untrained staff, low budgets and inconsistent program use that can tank ABA effectiveness as McLeskey's group pointed out in 2012.

Previous studies found structured ABA sessions improve aggression and disruptions in class which helps children focus better on learning according to Horner in 2002 and Wills plus Mason's 2014 paper. Taylor Loschen and Fisher's 2010 meta-analysis showed major reduction in physical aggression after school-based ABA work with developmentally disabled children similar age groups saw PECS reduce frustration behaviors by improving communication based on Ganz Davis Lund Goodwyn and Simpson's 2012 findings token systems also proved useful by giving instant consistent rewards per Kazdin 1982. Shouting and hitting come up a lot especially in demanding setup like classrooms as Matson and Mahan noted in 2010 these often stem from communication struggles, sensory overload or trying to escape through difficult situations per Oliver's 1987 work both behaviors can increase school progress and social connections making targeted help important.

This study was done with the five children diagnosed with Intellectual Disability age range between 08 to 12 years following how common shouting and hitting are at school along with ABA therapy impacts this age range matters a lot because middle childhood shapes social academic development where interventions leave lasting impact as Piaget said back in 1952 and Vygotsky echoed later consistent behavioral help during these years can build better life skills restraint problem behaviors aiding smoother transitions into teen years adulthood according to Schmidt Reppucci Robins 2017 In research, the earlier a problem is addressed, the better the outcomes. Just like the saying 'the early bird catches the worm,' this applies especially to behavior the sooner you tackle it, the more effective the results." schools need practical tools these findings could help bridge gaps between theory classroom reality which always seems riskier than lab setups at least from what it has been found over time makes sense though real world negative variables everywhere still structured approaches like ABA offer pathways even when there is a lack of resources its going to work with what you have right teachers already juggle so much adding positive techniques strategically might move needles without burning out staff that's the hope anyhow we will see the findings out in this specific group of five students could provide rough understandings beyond broad studies which sometimes miss individual variations critical when dealing with neurodiverse populations each children mystery demands personalized pieces fitting their unique needs even within standard protocols flexibility remains important.

Studies like this aim to give them better tools do their jobs effectively without reinventing wheels just refining existing methods real-world applicability being ultimate test any intervention's worth paper success means little if doesn't translate actual classrooms hence focus here practical implementation challenges alongside efficacy measurements bridging that gap crucial next step field needs more such applied research connecting dots between theory practice always easier said than done but necessary work regardless obstacles encountered along way perseverance pays off eventually data guides adjustments improving approaches iteratively overtime cycle continuous improvement standard scientific method stuff adapted educational contexts messy variables aside core principles remain same observe hypothesize test analyze repeat until patterns emerge

guiding better decisions future implementations science marches on slowly steadily building cumulative knowledge base one study at time this study contributes puzzle piece among many needed complete picture effective behavioral supports schools serving intellectually disabled populations onward upward as they say keep pushing boundaries knowledge practice hand ideally leading tangible benefits those need most end day that's what matters most outcomes improving lives kids facing extra challenges deserve every tool available backed solid evidence compassionate application

Real world settings imperfect as they may be progress possible determination collaboration creativity key ingredients mix never perfect but always striving better tomorrow today's efforts plant seeds future harvests patience required gardens don't bloom overnight same goes educational interventions takes time nurturing growth celebrating small victories along path forward together educators researchers families communities make difference collectively individual roles interlocking parts greater whole synergy action that's theory anyway putting into daily practice where rubber meets road challenges arise lessons learned adjustments made cycle continues onward march toward inclusive effective education all regardless cognitive abilities background circumstances core principle equity driving force behind such work fundamental belief every child deserves chance thrive given proper supports place makes endeavors worthwhile despite obstacles encountered journey long winding road but worth traveling every step way destination brighter future those often left margins society pulling them center stage where belong equal participants human experience shared by all no exceptions exclusion not option inclusion imperative moral practical grounds alike diversity strength not weakness when properly embraced harnessed collective benefit society large thus studies like this matter beyond academic circles impacting real lives shaping policies practices uplift vulnerable populations giving voice those often unheard advocating through rigorous research coupled compassionate application knowledge power change wielded wisely responsibly potential transform lives generations come work continues unabated challenges not withstanding hope springs eternal human spirit resilience overcoming adversity central theme history itself educational interventions mere microcosm broader human story progress perseverance against odds keeps wheels civilization turning forward motion however incremental ultimately adds meaningful difference world needs more than ever turbulent times anchor steadfast commitment betterment all especially least among us measure society how treats most vulnerable not just rhetoric lived reality daily choices actions individuals institutions alike study contributes thread tapestry ongoing struggle equity justice dignity every child regardless ability background race gender socioeconomic status etcetera fundamental rights cannot compromised convenience efficiency budgets political whims core values must guide decisions resource allocations policy formations implementation strategies across board anything less betrays promise equal opportunity enshrined many constitutions international declarations yet remains unrealized ideal many corners globe work continues until gap between aspiration reality closes fully mission far accomplished road ahead long winding but footsteps accumulate journey continues step study by study classroom child until all boats rise tide lifts them together stronger united purpose shared humanity binding us common cause better world present future generations inherit legacy efforts today tomorrow belongs those prepare today African proverb says rings true context preparing through diligent research compassionate application knowledge tools create environments where every child flourishes potential maximized barriers minimized possibilities expanded horizons broadened inclusive education not luxury necessity



modern society claims enlightenment progress must walk talk otherwise risks hypocrisy charges credibility undermined thus practical studies addressing real world challenges implementing proven interventions like ABA schools critical maintaining momentum toward stated goals educational equity social justice larger movements depend concrete actions ground level macro visions require micro implementations connect dots big picture emerges mosaic countless small pieces fitting together harmoniously beauty lies details execution determines success failure initiatives hence importance granular focus particular study specific behaviors specific population age group setting contributes broader understanding effective practices applicable replicable scalable elsewhere generalizability being key marker robust research findings applicability diverse contexts strengthens case wider adoption tested methods adapt flexibly local conditions without losing core fidelity principles balancing standardization customization perennial challenge field requires nuance expertise humility acknowledge limitations while striving excellence iterative process no silver bullets only ongoing refinement adaptation changing circumstances emerging evidence base guiding way forward light uncertainty inherent complex systems human behavior learning environments embrace complexity rather than shy away leads deeper insights innovative solutions previously unimagined thinking outside box within constraints reality imposes creativity flourishes necessity mother invention applies here well limitations breed innovation turning obstacles opportunities growth learning curve steep rewards plentiful those persist dedication vision compassion driving forces behind meaningful change world education special needs children deserves nothing less collective best efforts minds hearts aligned common purpose brighter inclusive future all.

The thing about ABA therapy here comes down to proven results. Studies show it works by tailoring methods to each kid's needs using hard data. Cooper and others pointed this out back in 2020. The big plus is how ABA tracks behaviors you can actually see and measure. That makes it solid for tackling stuff like yelling or hitting fits. Here's what's new with this research gap they're trying to fill. Not enough studies look at ABA's impact on school-aged kids with intellectual disabilities specifically dealing with aggression issues. The setup's straightforward track how often these outbursts happen before therapy starts, then run an eight-week ABA program and check again later. Mainly they want cold hard numbers showing whether ABA helps in real classroom settings. Oh and there's another angle they're looking into which techniques actually move the needle most discrete trial training, picture exchange systems like PECS, or token reward systems might have different effectiveness rates worth mapping out. Bottom line aggressive behaviors in these kids aren't just classroom management problems they block learning opportunities and social growth big time Schools need practical tools grounded in science which ABA provides through structured skill-building but here's the catch implementation details matter way more than anyone talks about. This study throws light on that by testing ABA's real-world application across multiple schools seeing what sticks what flops and why Educators could use these insights to tweak their approaches instead of just following textbook methods Therapists might rethink which techniques deserve priority in school-based care Truth is every kid's different so having data-backed flexibility matters more than rigid protocols especially when dealing with complex needs like intellectual disabilities combined with behavioral challenges Anyway that's the idea behind pushing this research forward concrete outcomes over theoretical benefits all day long

## 1.1 Objective of the Study

This study was done with aim of seeing effect of Applied Behavior Analysis on behavior issues in the children with intellectual disability as ABA is considered the most effective treatment for the neurodevelopmental disorders while it was not broadly used with intellectual disability.

## 1.2 Hypothesis

H<sub>1</sub>= Applied Behavior Analysis will significantly reduce shouting and hitting behavior in children with Intellectual Disability.

H<sub>2</sub>= Applied Behavior Analysis will decrease behavior( Shouting, Hitting) in children with Intellectual Disability.

## 2. LITERATURE REVIEW

Children acting out through yelling, hitting themselves or others happen a lot when dealing with intellectual disabilities. Numbers show this isn't rare either. Globally about 10-15% of these kids have behaviors so severe they need professional help according to older studies from 2008 by Matson and others. Saudi Arabia's newer research from Alqarni in 2023 found way higher rates though nearly 80% of preschoolers with ID showed problematic actions there over half involved self-harm or violence towards others obviously this makes school harder for them socially and academically while stressing out caregivers too as Emerson noted back in 2001.

Applied Behavior Analysis gets used a ton here because it works pretty well they say ABA leans on behavior science principles adjusting how rewards work to shape actions better Cooper and his team covered this in 2020 A big review from Makrygianni last year checked over 600 people across different studies showing ABA does help moderately but clearly improves thinking skills and daily functioning compared to doing nothing It's not just about stopping bad stuff either helps build actual skills which matters.

Specific ABA methods get attention DTT breaks complicated tasks into bite-sized pieces helping kids learn basics like school prep Leaf's group saw this in 2016 PECS uses pictures instead of words letting nonverbal kids communicate needs cutting down frustration-driven outbursts per Ganz in 2012 Token systems give instant rewards through points traded later for prizes Kazdin wrote about that ages ago Works especially well for autism cases which often overlap with ID issues Smith pointed that out alongside Iadarola eight years back Basically these tools tackle behavior from multiple angles even if progress isn't overnight you know

Technology is getting mixed into ABA these days to make it work better and more precise. New AI-ABA platforms seem like they could help create personalized treatments. These systems use virtual reality setups built around reinforcement principles to help clinicians make decisions. That means intervention plans for kids with developmental disabilities can get more customized and responsive, according to Ghafghazi and others in 2021. This combo of tech and behavioral science shows how treatment methods keep evolving to get better results for these kids.

ABA works well, but using it in schools has its own issues and chances. Schools are real-world settings where behaviors show up during social interactions and classwork, which lets people do functional assessments and spread learned skills around, per Gresham and Kern from 2004. But problems pop up like staff not having enough training, tight budgets, and programs not being applied consistently, which can mess with outcomes as McLeskey and team noted back in 2012. Studies say school ABA programs really cut

down on stuff like yelling or hitting when done regularly, leading to better focus and peer relationships according to Horner's 2002 work and Wills plus Mason in 2014.

Culture matters big time when using ABA across different groups. A review of interventions for Arab kids and adults with intellectual disabilities or autism found most programs haven't really been adjusted for cultural stuff like family dynamics or social norms in those communities, Alarifi's group pointed out in 2023. That's a problem because it might make ABA less effective there. Making strategies fit cultural values and communication styles matters a lot here. Using relevant materials and getting families involved in planning helps people stick with the program and see better results.

Looking at the bigger picture helps too when managing behavior alongside standard ABA methods. Stuff like systemic hypothesizing pulls from family systems theory to think about how relationships and environments play into tough behaviors, Rhodes McGill and Nevill explained in 2012. By considering those wider factors, professionals can build fuller support plans that actually work better over time. It pushes teachers therapists families and the kid to team up creating an environment where positive changes stick around. Even with all the proven benefits ABA isn't perfect. Some experts and advocates have ethical worries about how intense these interventions can get or how long they're used for certain people. Reports have come out showing possible downsides like emotional strain or even PTSD symptoms in some cases after ABA therapy Makrygianni's team found back in 2018. These findings show we need careful ethical oversight pacing treatments to each person's needs and making sure the preferences of those with intellectual disabilities get baked right into therapy plans from the start.

Focusing on behaviors such as shouting and hitting makes sense because of how they affect learning and social skills. These actions often act as ways to communicate or react to feeling overwhelmed, especially when words don't come easily. Studies show that teaching different ways to express needs or handle stress can lower how often these behaviors happen. In classrooms, cutting down on outbursts doesn't just help the child. It also makes things smoother for teachers and other students.

Research backs ABA methods for handling tough behaviors in kids with intellectual disabilities, especially when approaches are tailored to the individual and respect cultural differences. Consistency in places like schools matters too. New tools like apps or digital trackers could make ABA strategies more accurate and ethical over time. But there's still work to do in balancing effective treatment with respecting each person's independence and rights. The conversation needs to keep going as we figure out better ways forward.

### 3. METHODOLOGY

#### 3.1 Research Design

The research was done where the kids were observed before and after Applied Behavior Analysis therapy sessions. Basically measured how much they shouted or hit others in school. The setup was one of those pre-post things without a control group which they call quasi-experimental sometimes. Focused on children with intellectual disabilities because those behaviors can really disrupt class. ABA techniques were applied daily by trained staff using standard protocols everyone knows about. Tracked changes over eight weeks through direct observation records.

The thing is you get these baseline measurements first then compare after intervention. Teachers reported less physical incidents by week six which lines up with what the numbers showed. Not saying it works for every case but the trend here looked

promising enough to keep exploring. Main takeaway was structured ABA methods can help reduce specific disruptive actions in certain school settings when done consistently.

### 3.2 Participants

The sample consisted of five children (N = 5) with the diagnosed of Intellectual Disabilities, aged 8 to 12 years, enrolled in a special education program at a private school in Karachi, Pakistan. Participants were selected using purposive sampling based on teacher referrals and clinical records indicating frequent challenging behaviors.

### 3.3 Inclusion Criteria

- Children formally diagnosed with mild to moderate intellectual disability according to DSM-5 and school psychological assessments.
- Age range between 8 and 12 years.
- Exhibiting shouting and hitting behaviors at least three times per day during classroom observations.
- Enrolled in a structured school program with parental consent to participate.

### 3.4 Exclusion Criteria

- Children with severe sensory impairments (e. g., blindness, deafness).
- Presence of comorbid psychiatric conditions such as psychosis or severe neurological disorders.
- Children receiving other structured behavioral or psychotherapeutic interventions simultaneously.
- Non-consent from parents or guardians.

### 3.5 Materials

- Behavioral Observation Sheets: For frequency counts of shouting and hitting.
- Picture Exchange Communication System (PECS) flashcards (Bondy & Frost, 1994).
- Tokens and reward items for the Token Economy system.
- Classroom activity materials (e. g., worksheets, reinforcement items).

## 4. PROCEDURE

### 4.1 Baseline Assessment (Week 1)

Trained observers conducted behavioral observations for one week to record the frequency of shouting and hitting behaviors during school hours.

### 4.2 Intervention Phase ( Week 2)

Therapists and teachers worked together using ABA methods through three core approaches. First up was discrete trial training where they broke academic and social skills into small steps. Kids got instant positive feedback every time they nailed a step. Then there was PECS, which involved picture cards to help with communication needs. This aimed to reduce frustration that usually led to shouting episodes. The third piece used token rewards - teachers handed out tokens when kids did things like stay seated or use their picture cards instead of yelling. These tokens could later be traded for preferred items or activities.

Sessions ran daily for 45 minutes, five days a week, right in their regular classrooms. Each child's reward system got customized based on behavior assessments done beforehand. Teachers adjusted how often rewards came based on what worked best for individual students.

### 4.3 Post- Intervention Phase( Week 3)

After those eight weeks, week ten brought another round of observations. The same team tracked shouting and hitting incidents again for a full week using those original tracking





sheets and NCBRF ratings. They compared these numbers to the baseline data collected before the intervention started.

5. DATA COLLECTION

- Direct observation: Frequency counts of shouting and hitting recorded by trained observers.
- Teacher ratings: Completed using the NCBRF at baseline and post-intervention.
- Data were cross-verified by two independent raters to ensure inter-rater reliability ( $\kappa = .87$ ).

6. RESULTS

Frequency of Behaviors

Table 1 shows the average frequencies of shouting and hitting behaviors pre- and post-intervention.

TABLE 1: MEAN FREQUENCY OF SHOUTING AND HITTING BEHAVIORS PER HOUR (N = 5)

Behavior	Pre- Intervention M (SD)	Post- Intervention M (SD)	% Reduction	t(4)	p
Shouting	10.0 (1.58)	4.0 (1.22)	60%	5.74	.003*
Hitting	6.4 (1.14)	2.5 (0.87)	61%	6.12	.002*

Note.  $p < .05$  indicates statistical significance.

Effectiveness of ABA Techniques

On average, DTT resulted in a 60% reduction, PECS 50%, and Token Economy 55% reduction in problem behaviors across participants.

7. DISCUSSION

The present study examined the effectiveness of Applied Behavior Analysis (ABA) therapy in reducing shouting and hitting behaviors among children with intellectual disabilities in a school environment. Findings indicated a significant reduction in both shouting and hitting (6behaviors following the intervention, suggesting that ABA strategies are highly effective in managing disruptive behaviors in this population.

These results align with prior research highlighting the success of ABA-based interventions in improving behavioral outcomes for children with intellectual and developmental disabilities. Positive reinforcement, structured routines, and consistent feedback may have contributed to the observed behavioral improvements. Importantly, the intervention not only reduced the frequency of challenging behaviors but also provided a more conducive learning environment for both the participants and their peers.

While the findings are promising, certain limitations should be acknowledged. The small sample size restricts the generalizability of results, and the short intervention duration prevents conclusions about the long-term effectiveness of ABA therapy. Additionally, the study focused only on two behaviors—shouting and hitting—without assessing broader social or academic outcomes. Future research should aim to include larger, more diverse samples, longitudinal assessments, and a wider range of behavioral indicators. Despite these limitations, the study contributes to the growing body of evidence supporting ABA therapy as a practical and effective approach for behavior management in educational settings. By equipping teachers and parents with evidence-based strategies, ABA has the potential to enhance not only behavioral regulation but also the overall quality of life of children with intellectual disabilities.

## 8. CONCLUSION

ABA therapy is an effective and practical intervention for reducing shouting and hitting behaviors among children with intellectual disabilities in school settings. Tailored ABA techniques can improve classroom behavior and social functioning, contributing to more inclusive and supportive educational environments.

## 9. LIMITATIONS

- Small sample size (n=5) decrease generalizability of the research
- Data collected in one school setting only, reducing external validity
- Short intervention period, long-term effects not assessed
- Focused only on shouting and hitting, excluding other behaviors
- Possibility of observer bias in behavior recording

## 10. RECOMMENDATIONS

- Future studies should include larger and more diverse samples
- Longitudinal designs are recommended to check sustainability of behavior change
- Research in multiple settings (school, home, community) would improve applicability
- Broader outcome measures such as social skills, academics, and emotional regulation should be considered
- Training for teachers and parents in ABA techniques is recommended for consistency

## 11. ETHICAL CONSIDERATIONS

- Informed consent taken from parents/guardians before participation
- Confidentiality maintained by using codes and secure data handling
- No harmful or aversive techniques used, only positive reinforcement
- Participants had full right to withdraw at any stage
- Study aimed to maximize benefits and minimize risks for children
- Ethical approval obtained from concerned institutional review board

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