

Visual Schedules as a Behavioural Intervention for Children with Intellectual Disabilities Having an Associated Condition of Autism Spectrum Disorder

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Abstract:

This conceptual review examines how visual schedules serve as a supportive behavioural strategy for children who have both intellectual disabilities (ID) and autism spectrum disorder (ASD). These tools are often seen as straightforward ways to add structure and foreseeability to everyday routines, which in turn can ease behavioural issues and boost practical abilities. By pulling together insights from behavioural and cognitive theories, this review draws on existing research to show how visual schedules can improve communication, boost involvement in activities, and encourage better self-control in this group. It also touches on typical hurdles, like the importance of tailoring them to individual needs, getting family and educators on board, and ensuring skills carry over to different environments. Based on these points, the review suggests ways to weave visual schedules into personalized education plans (IEPs) and routine classroom approaches. In summary, it underscores that visual schedules offer an affordable, research-backed option with real promise for enriching educational experiences and overall well-being for children facing these dual challenges.

Keywords: Visual schedules, behavioural support, intellectual disability, autism spectrum disorder, challenging behaviour, applied behaviour analysis, individualized education program (IEP).

I. Introduction

Intellectual disabilities involve notable restrictions in cognitive abilities and everyday adaptive skills, typically emerging early in life and affecting how someone manages daily tasks. When ID associated with ASD, a condition marked by struggles in social connections, communication, and repetitive pattern and these challenges can become even more layered and demanding. This combination is fairly common, calling for customized behavioural strategies that tackle these intertwined issues.

Children with both ID and ASD often find it tough to communicate effectively, handle routines, or pick up the adaptive skills needed for school success and fitting in socially. These hurdles can lead to disruptive behaviours like outbursts, self-harm, resistance, or meltdowns, often stemming from frustration, unclear expectations, or confusion. Such issues don't just affect the child but ripple out to

families and caregivers, making support systems crucial. In school settings, these children benefit from reliable, straightforward structures to smooth transitions, calm worries, and spark more participation. Visual schedules stand out as a fitting behavioural tool here. They use images, icons, or words to outline a series of activities or events, giving kids a clear, tangible way to see what's coming next. This foresight cuts down on surprises and lowers the risk of behavioural flare-ups.

Rooted in applied behaviour analysis (ABA) techniques, visual schedules draw on ideas like reinforcement, cues, and organized learning. Studies suggest many kids with ASD have a knack for processing visuals, so these schedules tap into that strength to aid comprehension and cooperation (Koyama & Wang, 2011). This review looks closely at visual schedules as tailored aids for children with ID and ASD, blending theory, real-world evidence, and practical tips to guide teachers, therapists, and families toward better behavioural and adaptive results for this group.

II. Theoretical Background

Visual schedules for children with ID and ASD draw from core behavioural ideas in ABA, such as reinforcement, prompting, and breaking tasks into steps. They turn expectations and upcoming events into clear visual forms, which is especially helpful since many with ASD process visuals more easily than words. This clarity helps dial down confusion and stress, leading to more self-reliance and willingness to participate. Often paired with prompting like starting with hands-on guidance and easing off over time where these schedules fit cognitive-behavioural approaches that stress the value of routine and direct teaching matched to each child's learning style.

III. Review of Literature

Sji, S et.al (2025) in their study they investigated the effects of Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) on social functioning in individuals with autism spectrum disorders (ASD). The main outcome measures of their study were social, cognitive performance, fine motor, communication, daily living, imitation, and cognitive verbal skills. They found that there were no significant differences in other outcome measures. They found that TEACCH is a promising intervention for improving the social skills, cognitive performance, and fine motor functions of ASD individuals.

Broader analyses back this up. Genc Tosun and Kaplan (2023) reviewed over 30 single-case studies, confirming reliable gains in behaviour and participation. Yet, reviews by Knight et al. (2015) and Lequia et al. (2012) call for more research on severe ID cases and complex overlaps, noting inconsistencies in how studies apply the tools

Building on this, Massey and Wheeler (2000) looked at structured teaching, with visual schedules as a central element, in special ed classrooms. They found fewer interruptions, especially noisy ones, when kids followed steady visual routines each day. This highlights how consistency and clear visuals can shape lesson plans and behaviour guidance effectively.

On the brain side, research like that from Yook et al. (2020) uses neuroimaging to reveal stronger activity in visual areas for those with ASD, explaining why visual cues often work better than spoken ones. Earlier studies, such as MacDuff et al. (1993), stressed the value of photo-based schedules for their realism, helping kids rely less on adults and apply skills in new places like home or school.

Goldman et al. (2018) noted that when parents use schedules at home, transitions go smoother, showing that steady use across spots amps up benefits. Dettmer et al. (2000) added that customizing schedules

with a child's favourite themes or digital elements boosts drive and follow-through, underlining personalization. Tech versions take this further; Cihak (2011) compared paper and tablet schedules, finding digital ones often led to more engagement and fewer issues. Input from educators adds a real-world angle. Whalon and Hart (2011) gathered views from special ed pros who see visual schedules as key for cutting problems and lifting student involvement. The takeaway? Schools should pair these tools with training for staff to make them work best.

Evidence from Hodgson et al. (2017) lays a groundwork, linking visual schedules to fewer disruptive behaviours like tantrums or resistance by making shifts and expectations more predictable for kids with overlapping diagnoses. Their work in controlled settings showed clear improvements in behaviour, pointing to how these tools lighten mental strain and emotional upset.

Virues-Ortega, P (2013) in their study they examined the effect of TEACCH in a variety of outcomes. They have selected 13 studies for meta-analysis totalling 172 individuals with autism exposed to TEACCH. Standardized measures of perceptual, motor, adaptive, verbal and cognitive skills were identified as treatment outcomes. We used inverse-variance weighted random effects meta-analysis supplemented with quality assessment, sensitivity analysis, meta-regression, and heterogeneity and publication bias tests. The results shows that TEACCH programme has a significant effect on perceptual motor, verbal, and cognitive skills were of small magnitude in the meta-analysed studies. The effect on Adaptive behaviour like communication, ADL and motor skills were within negligible to small range. Whereas there is a moderate to high gains in social behaviour.

IV. Conceptual Framework

This framework positions visual schedules as proactive behavioural aids for kids with ID and ASD, weaving in behavioural, cognitive, and growth-oriented views to unpack how they shape actions and learning.

At heart, visual schedules turn vague directions into clear, visual steps, helping kids move through their day with less guesswork. For those with ID and ASD, verbal info can be hard to grasp due to processing differences, sparking anxiety or outbursts (Hodgson et al., 2017). Visual previews bridge that gap by offering a straightforward way to anticipate events, reducing the emotional strain that often leads to challenging behaviors. Tied to ABA, schedules act as setup cues that encourage positive actions and curb reactions from mix-ups. They're dynamic, using rewards—like praise for finishing a step—to build habits (MacDuff et al., 1993). Cognitive angles note ASD's visual strengths, so icons or pics make sequences easier to get and manage independently, leveraging how brains in ASD often show stronger visual activation (Yook et al., 2020). This visual approach not only aids comprehension but also promotes self-regulation by making abstract routines more concrete.

Fading prompts is key: Start with heavy support, then pull back as skills grow, aiming for self-reliance, which aligns with structured teaching methods that have shown lasting gains in engagement (Massey & Wheeler, 2000). Customization matters too—match the schedule's detail to the child's level, maybe simple pics for some or apps for others, as tailored elements like preferred themes boost motivation (Dettmer et al., 2000). Regular tweaks keep it fitting, ensuring the tool evolves with the child's progress. Finally, it stresses real-life fit: Use in homes, schools, or outings to make gains stick and build true independence, with evidence showing that consistent application across settings amplifies benefits (Goldman et al., 2018). This holistic embedding draws from ecological views, making sure interventions aren't isolated but part of everyday contexts where real growth happens.

V. Implications

Visual schedules hold big promise for practice, home life, and policy when helping kids with ID and ASD. In schools, they cut uncertainty, curb disruptions, and foster self-reliance, letting teachers handle varied needs while kids learn to self-guide, as seen in classroom studies where structured visuals led to fewer outbursts (Massey & Wheeler, 2000). At home, folding them into routines like getting ready for school or bedtime adds stability, eases tensions, and lifts family vibes, with parent-led use smoothing transitions and reducing daily conflicts (Goldman et al., 2018).

Therapists can tweak them to fit each child's thinking, senses, and talking style, keeping things engaging and right for their stage— for instance, incorporating digital formats that have proven more interactive and effective in boosting participation (Cihak, 2011). This personalization draws from the need for interventions that respect individual differences, ensuring they're not just generic but truly motivating. Digital options expand this, offering easy tweaks on the fly, which opens doors for real-time adjustments in dynamic environments.

On a wider scale, leaders can boost supports by funding training and resources, treating visual schedules as proven practices backed by meta-analyses showing consistent positive effects on behavior (Genc Tosun & Kaplan, 2023). This pushes inclusion, readying kids for fuller roles in daily life across settings, while addressing gaps like variability in severe cases through better fidelity in implementation (Knight et al., 2015). Overall, they link behavioral, thinking, and real-world views to spark independence, trim challenges, and open doors to meaningful participation, creating a ripple effect that enhances quality of life for children, families, and educators alike.

VI. Limitations and Future Directions

While visual schedules show solid promise as aids for kids with ID and ASD, drawbacks exist. Much research uses small groups or case examples, limiting broad takeaways (Lequia et al., 2012). Differences in kids' abilities, ways of communicating, and other conditions can sway results, so one-size-fits-all isn't easy. Success hinges on steady use by adults, which can falter in under-resourced spots.

Future work should use bigger, varied groups and long-term or experimental setups to check lasting impact. Explore cultural tweaks for broader appeal. Tech like apps needs deeper looks at how they boost involvement and skills transfer. These steps will solidify evidence, sharpen methods, and widen access.

VII. Conclusion

Visual schedules emerge as flexible, effective aids that can truly uplift lives for kids with ID and ASD. Through clear visual hints, they help grasp routines, brace for changes, and tackle tasks with more assurance, drawing on strengths in visual processing to make learning more accessible (Yook et al., 2020). In schools and homes, they build self-reliance, dial back issues, and nurture self-management, with studies confirming reductions in disruptive behaviours when predictability is enhanced (Hodgson et al., 2017). Teachers gain tools for classroom flow and diverse needs; families see less stress in routines, as consistent home-school application fosters smoother transitions (Goldman et al., 2018). Therapists enhance results by personalizing to fit cognitive, sensory, and communication profiles, with digital tools adding fresh ways for real-time fits and fun, leading to greater engagement (Cihak, 2011).

To tap full potential, keep researching, train pros, and shape policies. Larger studies on long-term effects, plus cultural factors, are needed, building on reviews that highlight the evidence base while noting areas for more focus on complex diagnoses (Knight et al., 2015; Lequia et al., 2012). Backing through

resources and programs ensures steady benefits everywhere. Linking behavioural, cognitive, and everyday angles, visual schedules offer a practical path to empower kids toward more autonomy, better outcomes, and fuller involvement in life, ultimately bridging theory to real-world impact as supported by foundational work in the field (MacDuff et al., 1993).

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