Tailoring Methods for Music Involvement for Children with Autism Spectrum Disorder

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Characteristics of Autism Spectrum Disorder

Deficits in social communication and social interaction

- ..in social-emotional reciprocity
- ..in nonverbal communicative behaviours
- .. in developing maintaining and understanding relationships

Restricted repetitive patterns of behaviour, interests, or activities

- Stereotyped or repetitive motor movements
- Insistence on sameness, inflexible adherence to routines, or ritualized patterns
- Highly restricted, fixated interests
- Hyper- or hypo-reactivity to sensory input

The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; *DSM–5*; American Psychiatric Association, 2013)

Current state:

- average global presence of ASD 1% 2% (Centres for Disease Control and Prevention, 2018)
- 10 fold growth in recent years (Zveza za avtizem Slovenije, n.d.)
- growth in awareness (Aithal, 2020)
 - treatment \rightarrow amplification of strengths

 Needing movement or fidgeting/ stimming aid in focus Differences in regulating attention (hyperfocus when interested and difficulty focusing when not interested) Tendency to hyper- focus on a wide range of interests Ability to respond quickly in crisis situations/ emergencies Difficulty with transitions due to challenges with switching focus Social interactions affected by impulse control and focus differences Craving novelty 	RSD (Rejection • Working Sensitive memory Dysphoria) impacted	Autism	
	 Alexithymia (difficulty identifying and naming feelings) Hyperactivity (physical and/or mental) Different perception of time Interoception differences Stimming Processing speed impacted Atypical social interactions Differences in impulse control 	Hyper and/or hypo- awareness of sensory information Preference for interpressonal connection through interests Soothed/stimulated through repetitive behaviors, movements, sounds and thoughts ("Stims")	Differences in verbal and non-verbal communication and interactions Tendency to hyperfocus on a few interests for an extended period of time Tendency toward concrete thinking/
	Emotional sensitivity Sensory differences Interest-driven Executive function difficulties Asynchronous development Unique ways of learning Intense curiosity Divergent/creative thinking	Preference for logic and fairness Preference for precision in expression Thinking in systems Highly developed morals Ability to notice details Needing time spent in solitude/contemplation	difficulty with abstract thinking • Preference for direct communication • Pattern recognition • Needing routine, order, and/or clear expectations (especially when under stress)
	Thinking in metaphor & symbol Learning in a non-linear manner Easily bored	Tendency to make connections across domains Tendency to	ftedness
REDESIGN: Angle Cibis Graphic Design AngleCibis.com	Tendency toward abstract thinking Fascination with theory Needing intellectual stimulation/ mental challenges Early emotional awareness Early concern for (and ongoing need to explore) existential issues Wide range of interests	 Interfactory to predict consequences and foresee problems Needing interpersonal connection through shared interest in complexity Awareness of and need for complexity Rapid comprehension and/or "skip" thinking 	CONTENT: Katy Higgins Lee, MFT @TendingPaths Common traits not to be used for diagnosis/ identification Overlapping areas are shared traits December 2022

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Strengths in musical processing:

- better memory for
 - tone of voice and changes in it
 - individual tones and separate tones within a chord (Applewhite et al., 2022, Heaton 2003)
- no issues with recognizing emotional, communicational and social aspects of music (Applewhite et al., 2022; Kim et al., 2009)

Action research



Observing and identifying

Observing and identifying new ways to communicate with children with ASD, while also bringing them joy and enhancing their well-being, cognitive, motor and socioemotional skills



Observing

Observing progress in piano learning and the impact of musical involvement in other areas



Exploring

Exploring the use of creative and innovative teaching methods for piano lessons with children with ASD

How to find the right teaching method

Observing the child during their lessons, recording their progress and behaviour

Using collected information to develop new techniques that are tailored to each child's individual strengths and interests.

Which techniques and tools have been most beneficial to the child's progress?

What was useful and what should we change?

Observation and reporting

<u>WHY?</u>

You can help improve their:

- social skills,
- communication skills (expressive and receptive),
- connections with others through music (especially nonverbal, with limited expressive communication abilities),
- daily living skills.
- Reducing stress and anxiety.

<u>HOW?</u>

- Listening to music.
- Singing to/with them.
- Using music to express their emotions.
- Dancing/moving to the music.
- Learning musical instrument (piano, Orff etc.)
- Learning rhythm (clapping) and melody (singing, murmuring)

Why musical involvement?

- interaction
 - territoriality
 - social timing
 - attunement! (Kim et al., 2009)



Why musical involvement?

- interaction
 - territoriality
 - social timing
 - attunement!
- personalization (child-centred approach)
 - musical engagement offers many different options of enjoyment and levels of social interaction

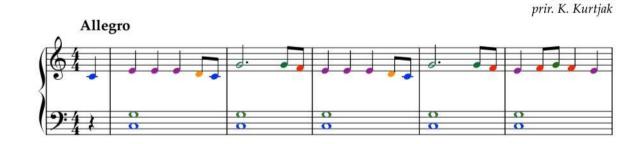
Didactic-methodological approaches for children with ASD

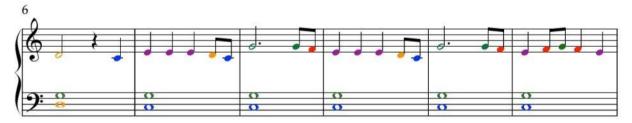
- 1. Individualized approaches
- 2. Adapting communication (clear and concise instructions)
- 3. Use of visual aids
- 4. Emphasis on structuredness
- 5. Incorporating social interactions
- 6. Using sensory approaches
- 7. Integrating the child's interests
- 8. Use of alternative communication methods
- 9. Use of positive reinforcement
- 10. Cooperation with parents and therapists

"Rainbow piano"

A. Vivaldi

Pomlad







Adding letters to colours

First, together with the student, we determine the colour that will indicate a certain tone/piano key.

We mark the tones on the keyboard with coloured slips or stickers.

Then we prepare a music sheet, on which the tones are marked/coloured with a certain colour.

After few lessons playing "by colours", we add letters that indicates music notes (c, d, e, f, g, a, b)

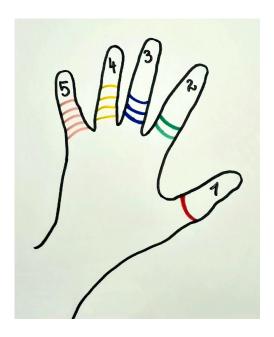
When we practice, teacher can also recite in rhythm the letters.

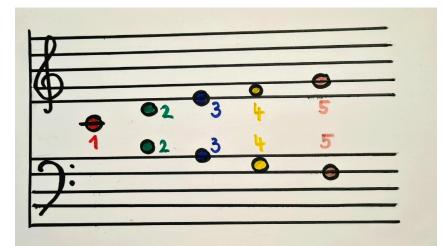


Note numbering

• For some students, marking with numbers instead of letters proved to be more effective.

• We assign a number to each finger, the same as the note. We can use it also in combination with colours.





Visual lesson plan cards

- Setting progress goals, practice plan and expectations
- Make lesson plan and represent it to your student so he/she'll know what's coming next and how far they are through the lesson.
- Each step of lesson plan show with visual card.



Improvisation

- We listen to the song I previously chose.
- I teach the student main theme from the composition. We sing it, vocalize it and move to the rhythm.
- We start improvising on the theme we learned.



Listening, composing, arranging and producing

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We listen to the song student chose.



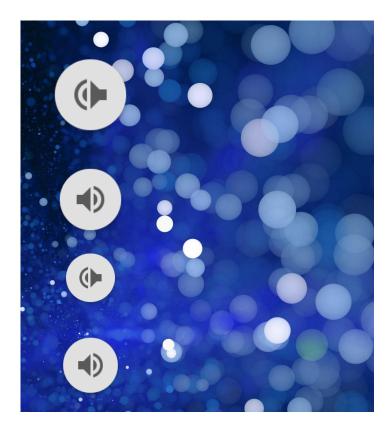
The student plays by ear and invents new melodies, new harmonies and compositions.

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I record lessons and transcribe what I hear. Sometimes it is new song, sometimes arrangement.



I export to midi files and send to the student. The student then creates his final work with the help of music production programs and visualizes and internalizes the composition.



VVVV Video recording and making piano tutorials for homework

 Video recording songs step by step, hand by hand for home practice

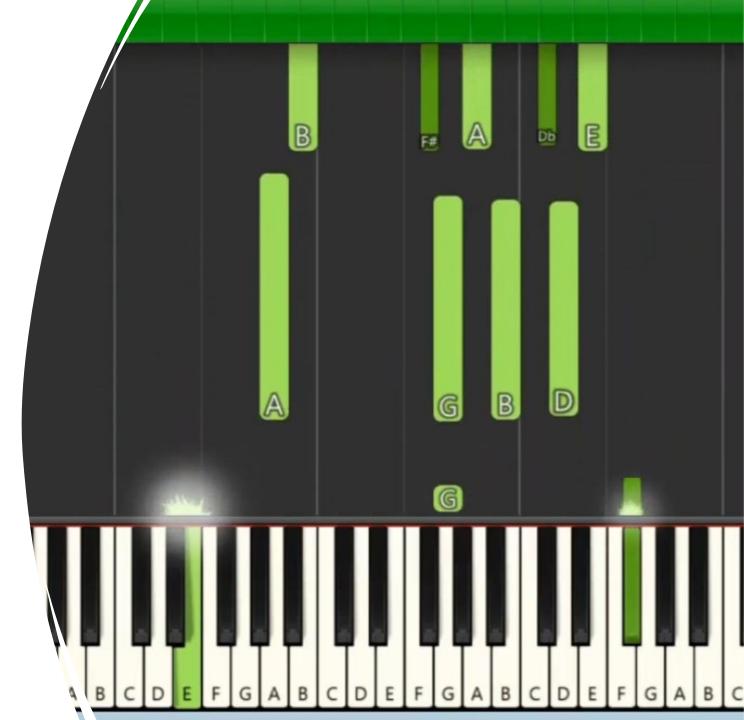




Left hand

Right hand

 Making a piano tutorial using Piano Visualization Software



Communication through music

When I asked the student, how her day was, she answered by sitting down at the piano and playing the piece we learned in her own way.

I listened and observed changes in her playing and behaviour.



Over time, I learned to receive messages through music and to communicate with her through music.

She found a way to express emotions and feelings through music and be harmonious with herself and the world around her. Positive effects of musical involvement

- Language development
- Improving motor skills
- Improving social skills
- Development of performance skills
- Increasing concentration and persistence
- Easier adaptation to unfamiliar situations
- Increasing self-confidence

Social and emotional improvements

- 1. Improvement in social communication and interaction skills
 - a. reciprocity
 - b. initiation of interaction
- 2. Better focus and attention
- 3. Better movement coordination
- 4. Lower anxiety and aggression
- 5. Better child-parent relationship

Conclusions

- music offers:

- structure
- adjusting to individual child's needs
- practicing emotional skills and empathy
 - of shared attention
 - responding and understanding social timing
 - practicing attunement
- social interaction
 - turn-taking
 - simultaneous interoception and exteroception
 - from "i hear myself" to "i notice the environment" to "we experience together"
- empowerment and emotional expression
 - "i hear myself"
 - performing and experimenting

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