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

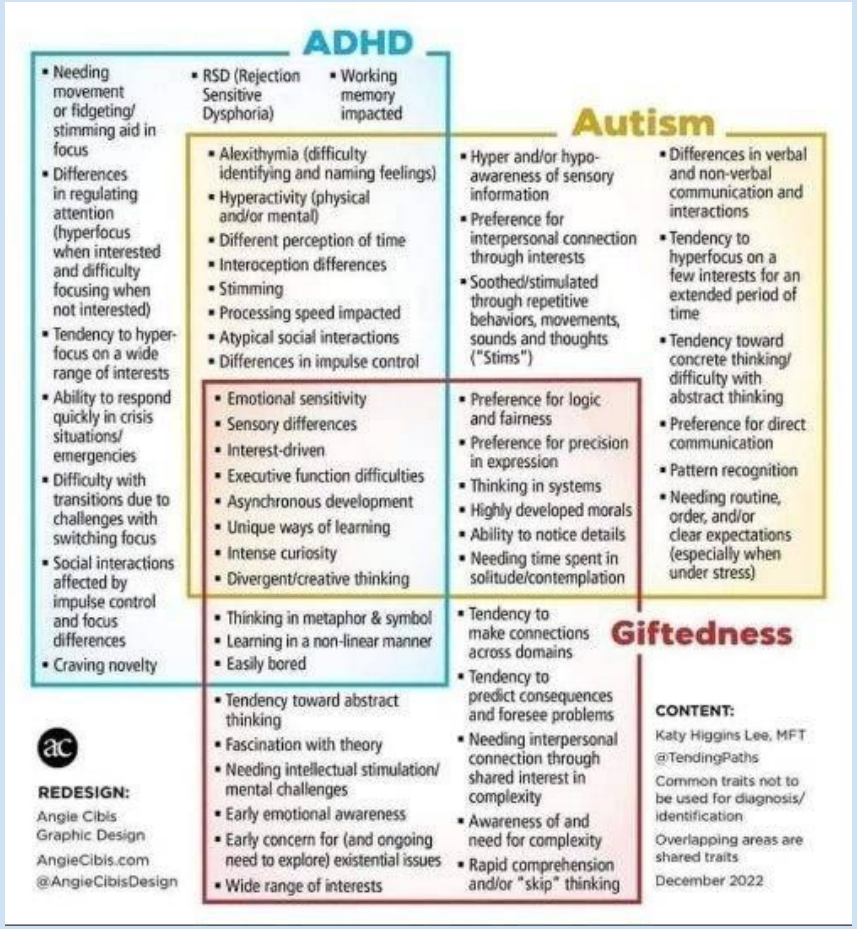
Restricted repetitive patterns of behaviour, interests, or activities

- 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~~ → amplification of strengths



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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

WHY?

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.

HOW?

- 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)

Liz Egan, https://www.pathstoliteracy.org/promoting-social-interaction-zoom/

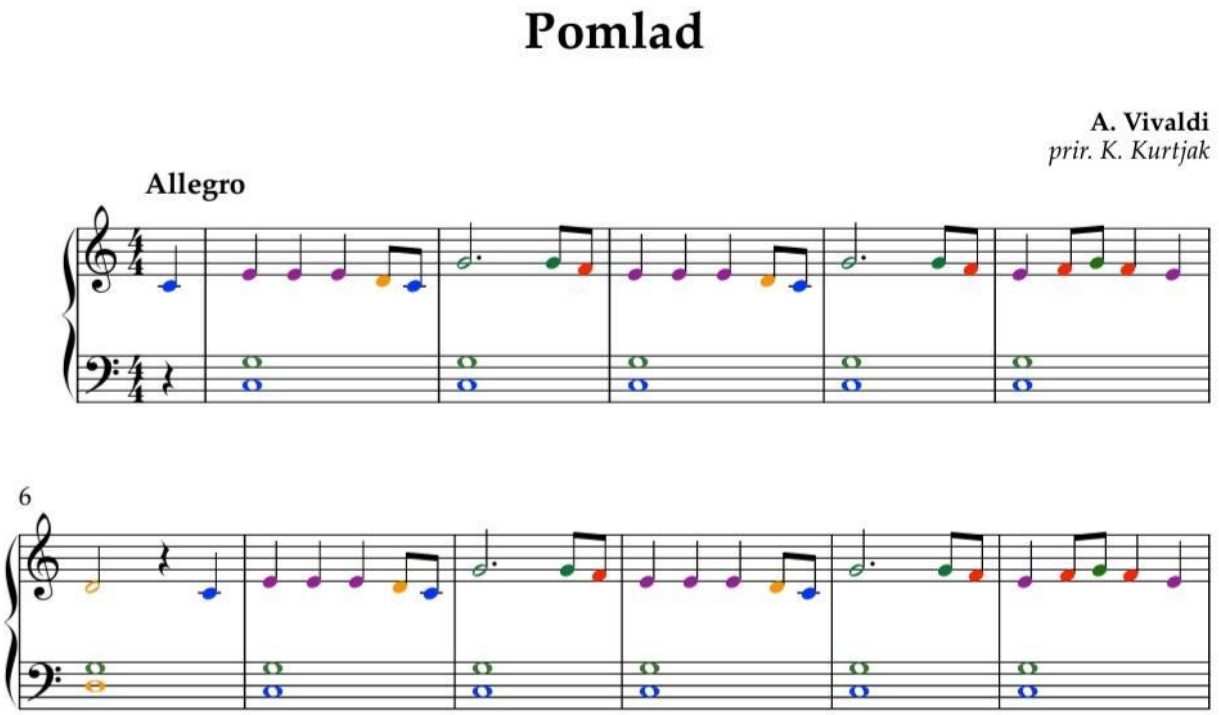
Why musical involvement?

- 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”



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.

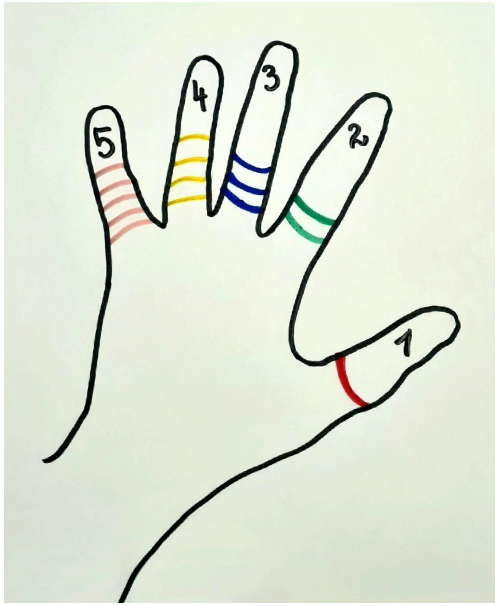
After few lessons playing “by colours”, we add letters that indicates music notes (c, d, e, f, g, a, b)

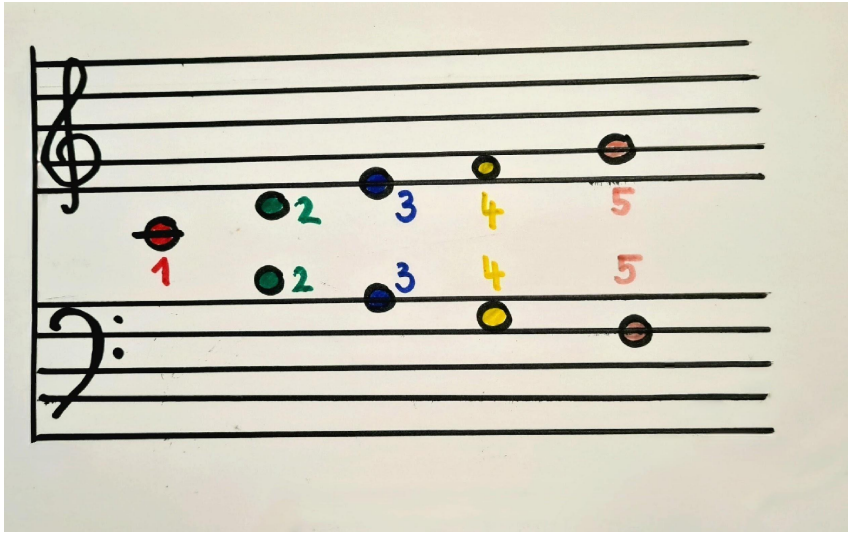
When we practice, teacher can also recite in rhythm the letters.

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.

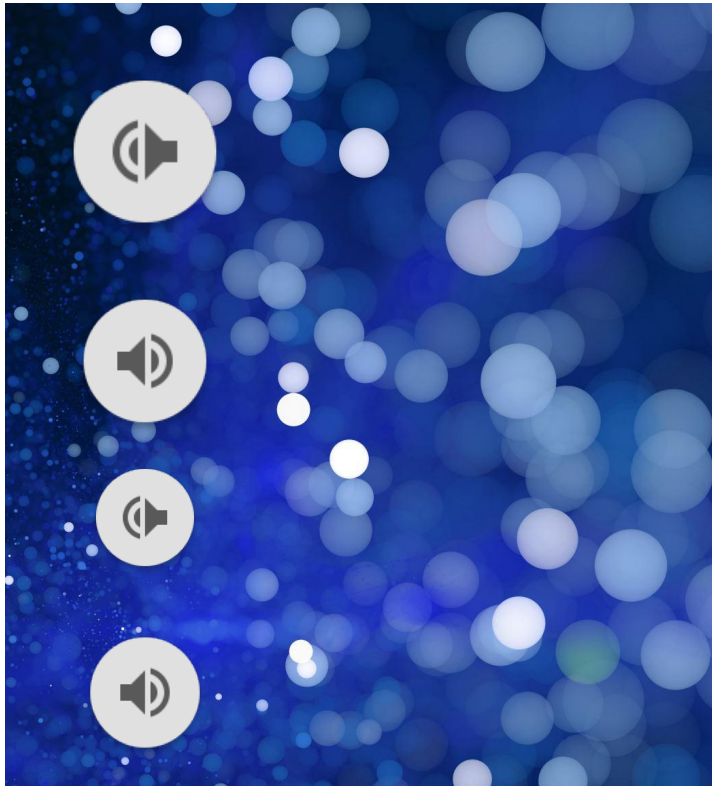
Listening, composing, arranging and producing

We listen to the song student chose.

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

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.



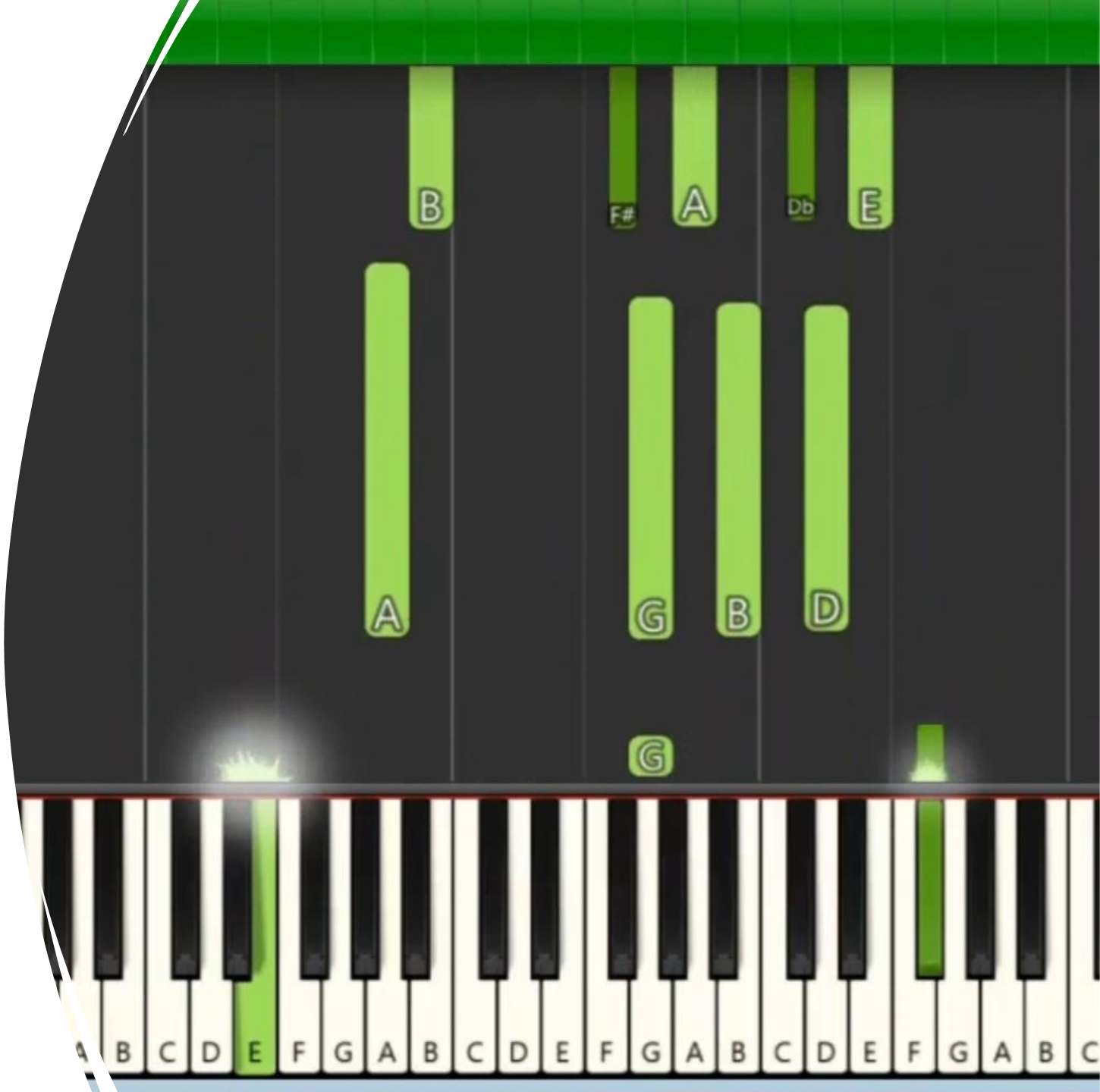
Video recording and making piano tutorials for homework

- 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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