**Research design**
- Qualitative
- Phenomenology (lived experience)
- Interpretive phenomenological analysis (IPA)
- Five in-depth case studies
- Semi-structured interviews
- Participants were gifted adults identified as having Asperger syndrome (diagnosed prior to the DSM-5 in 2013)
- Key informant interviews
- Artefacts: photos, publications, artworks
- Prolonged engagement via email

**Terms: neurodiversity, typically developing**

**Characteristics of thinking**
- Weak: Strong - Strong memory profile

**Thematic findings**
- Compensatory learning, learning despite school
- Different memory profile (weak-strong-strong) means that memory for own experience is qualitatively different to typically developing
- Profound affect on learner characteristics
- Self-referential thinking vs. externally oriented thinking
- The quest for epistemic certainty ‘What is wrong with me?’ Am I smart or am I dumb?’

**Interpretive framework**
- Developed via:
  - An iterative literature search
  - Novel step of importing the memory-in-autism literature into NVivo and analysing it as though it was data
  - Compiling a framework of 150 quotations on characteristics of memory in the autism and the autism research literature
  - Cross- referencing with the 3 major explanatory theories of autism and Tad's Model of Human Learning & Memory (2016)

Further developed into a new model of learning, the Learning Ladder

**Bibliography**
- Boucher, J., & Mayes, A. (2012). Memory in ASD: Have we been barking up the wrong tree? Autism, 16(6), 603-611.

**The Learning Ladder**
- The Learning Ladder is a framework that supports the existence of a hierarchy of thinking activities and facilitates explanation of the cognitive characteristics of neurodiverse learners. The Learning Ladder reveals a number of inverse relationships that illuminate the strengths and weaknesses of neurodiverse learners.
- Learners on the autism spectrum will likely be very strong at mental activities at the bottom of the ladder and highly challenged by learning activities higher up the ladder.

**Types of thinking activities**
- Meaning making
- Concept formation
- Prototype formation (summary representations)
- Categorising, grouping, classifying, sorting
- Naming, labelling
- Memorising facts

**Weak - Strong - Strong memory profile**

**ASD compared to typically developing**

**Research question**
- How do gifted adults with Asperger syndrome think and learn?

**Data collection and analysis**
- Interviews were audio-recorded and transcribed
- Transcriptions were coded using NVivo qualitative analysis software
- Categories were formed
- Thematic findings

**Theory development (the Learning Ladder)**

**Learn on the spectrum**

**Explanatory theories of autism**
- Theory of mind
- Weak central coherence
- Executive function
- Amnesia theory
- Enhanced perceptual functioning

**An unanticipated turn**
- Interview questions were designed to elicit memories of school experiences and the factors that helped or hindered learning. However, the unusual characteristics of the repeated memories resulted in a change of focus to the phenomenon of memory in autism itself (e.g., lack of childhood amnesia). As a school teacher, I did not have cross-disciplinary access to expertise on memory in autism so the question of how to interpret the data was resolved by developing an interpretive framework from the research literature.

**Thematic professional development for teachers**

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