

Understanding Educational Experience

Autistic students' engagement with in-person & remote learning

Julie Bailey MA MEd PGCE MBPsS | jb658@cam.ac.uk | [@juliebailey222](https://www.instagram.com/juliebailey222) | learningengagement.org
Supervised by Professor Sara T. Baker

Find out more about the
Neurodiversity and
Learning Project



learningengagement.org



Why do we need to understand engagement?

Inclusive learning in schools, colleges and universities depends on understanding and anticipating the needs of all students, including subtle, but important differences in the way students experience engagement with different forms of learning.

Where autistic students report lower engagement with their learning, looking more closely at which aspects of the students' experience are important can support change in the design of learning activities and, in turn, remove barriers to inclusion.

However, we needed to develop a new tool to effectively research students' experience.

How was the MELA-SR research tool developed?

Using a neurodiversity framework, we worked with autistic students to develop a new brief, intuitive instrument to measure engagement. We built on existing multicomponent models of engagement to measure engagement across social, cognitive, emotional, and behavioural domains (Wang et. al., 2019).

MELA-SR was developed with the help of current university students and experts with experience of working closely with autistic students. The stages of development were:

1. Piloting for feasibility of a brief contextualised measure of engagement with learning activities.
2. Validity testing for subconstructs to establish clarity and meaningfulness for experience of learning.
3. Subconstructs rated for relevance to autistic and non-autistic students.
4. Interviews to establish agreement between the brief measure and self-described experience.

The resulting self-report measure of engagement with learning activities (MELA-SR) collected the experience of 312 learning activities from 79 current UK undergraduate students (23 autistic students).

MELA-SR collects engagement rating (1★ - 5★★★★★) and engagement subconstructs for each type of learning activity (e.g. pre-recorded lecture, small group in person teaching) recently taken by the student.

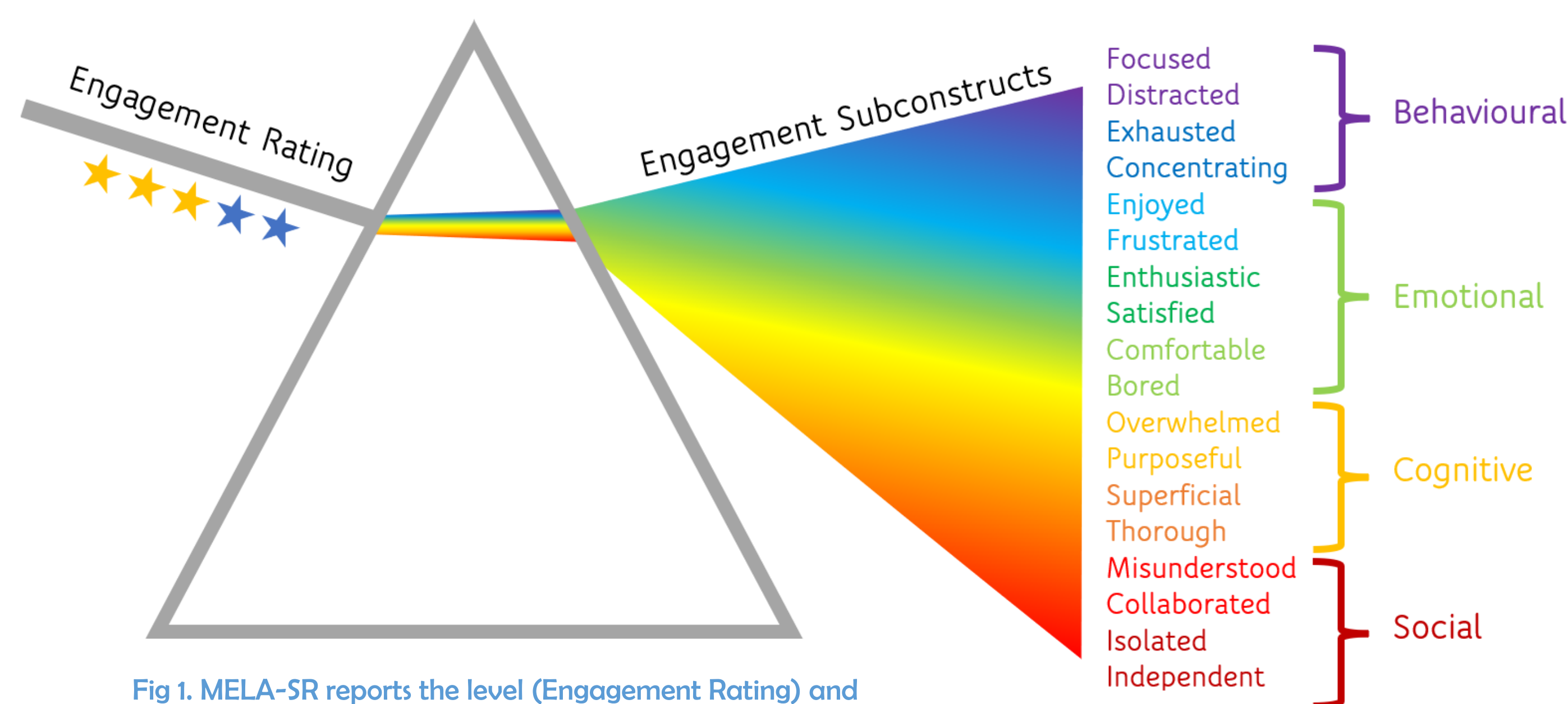


Fig 1. MELA-SR reports the level (Engagement Rating) and qualities (Engagement Subconstructs) of a student's engagement with a specific learning activity.

How does the experience of engagement differ?

The qualities of the students' engagement differs between groups. Across all learning activities, autistic students more frequently report their learning to be *exhausting* and *frustrating*, with feelings of being *misunderstood*, *overwhelmed* or *isolated*. Conversely, autistic students report positive constructs such as *concentrating*, *focusing*, *independent*, *satisfied* and *thorough* less frequently than 'no difference' students. Autistic students also report their learning as *superficial* less often than the comparison group.

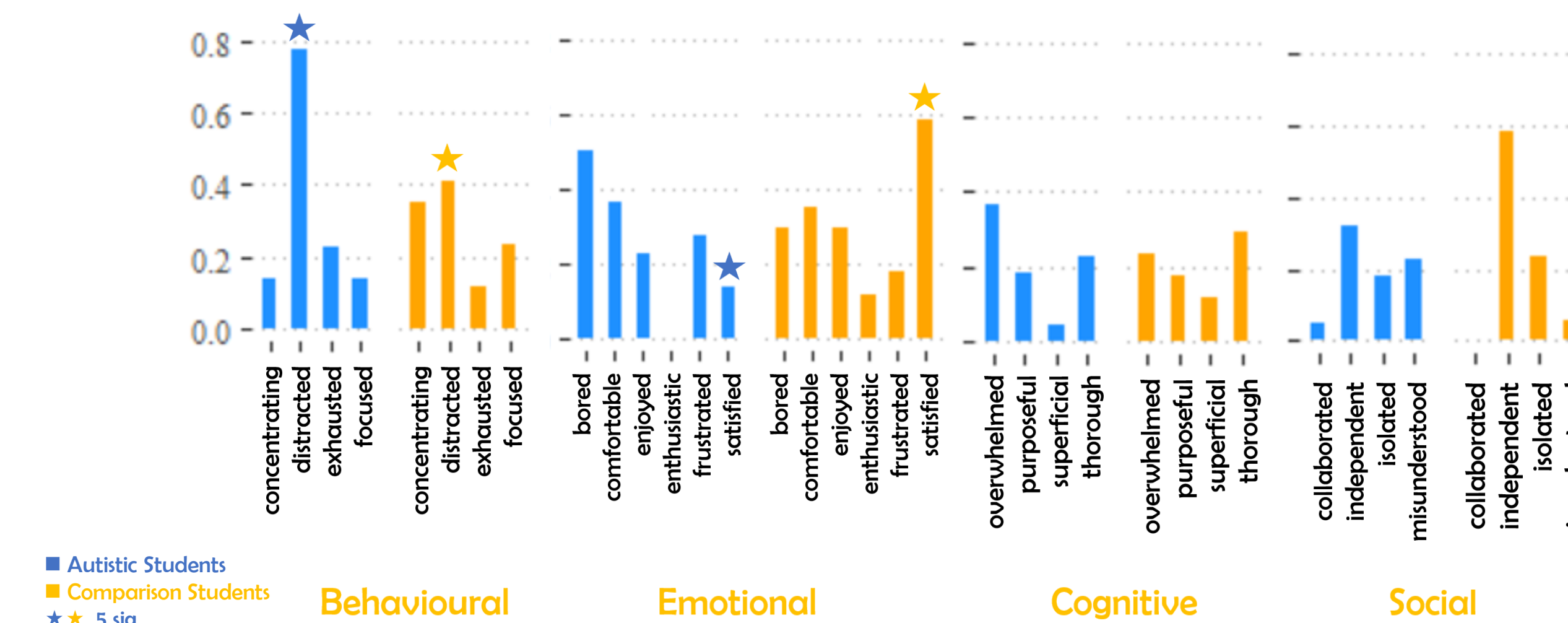
When we focus on specific modes of learning, the differences between the groups become clearer.

Pre-recorded lectures

Nearly 80% of autistic students describe their learning in pre-recorded lectures as *distracted*. Autistic students are also less likely to be *satisfied* with their learning in pre-recorded lectures.

Initial findings also suggest that autistic students may be less likely to describe their learning as *independent*, *focused* or *enjoyable*, and that pre-recorded lectures tend to be more *boring*, *frustrating* and *overwhelming* for autistic students.

Fig. 2. Proportion of students selecting each Engagement Subconstruct to describe their learning in pre-recorded lectures

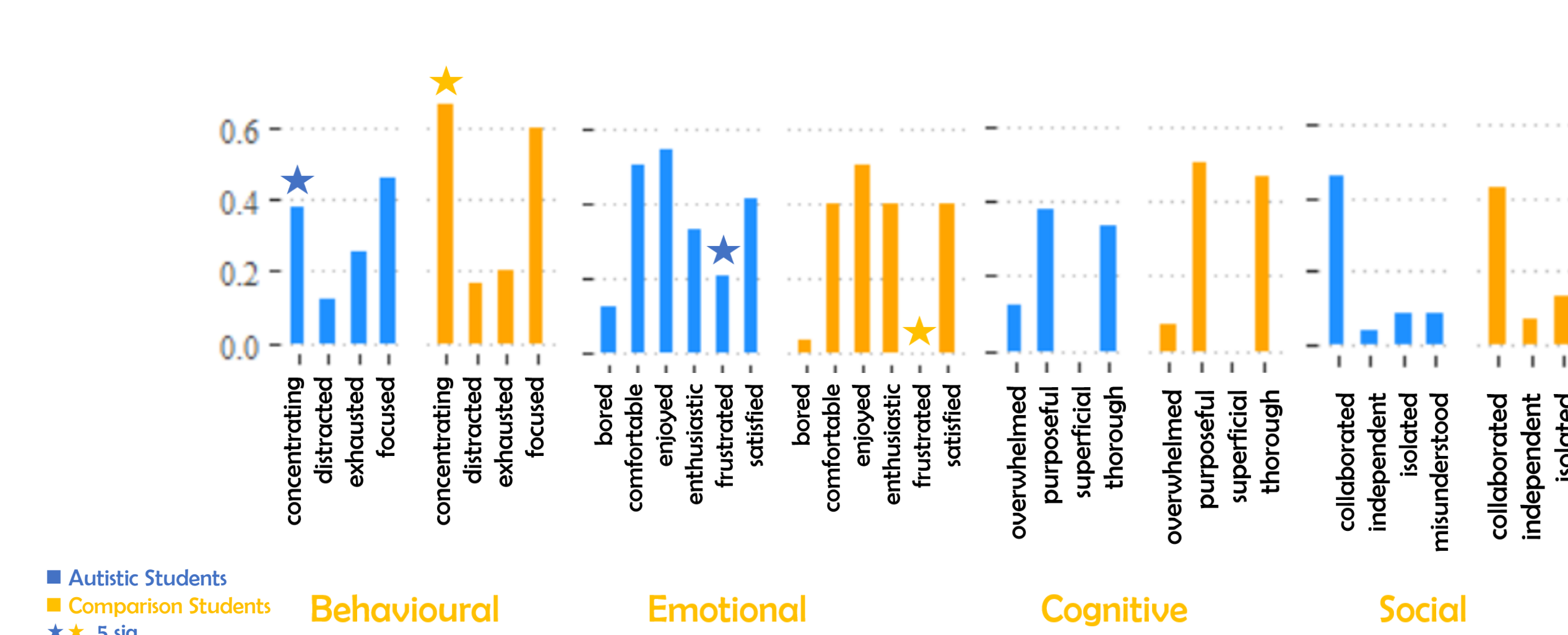


Small group teaching

For small group teaching, autistic students reported less *concentration* and greater *frustration*. Interestingly, there were no differences in the social aspects of the learning.

Initial findings also suggest that autistic students may be less likely to describe in-person teaching as *purposeful*, *thorough* or *focused*.

Fig. 3. Proportion of students selecting each Engagement Subconstruct to describe their learning in small group teaching



How do autistic students rate their learning?

Engagement ratings were reported on a scale of 1★ (low) to 5★★★★★ (high). Autistic students rated their learning lower than a comparison group of non-autistic students overall. Average scores are higher for autistic students than the comparison group only in remote large group learning activities.

Interestingly, although both groups of students rated their learning engagement as highest for in-person 1-to-1 teaching, autistic students' engagement ratings were still significantly below those of the comparison group. For autistic students, the lowest engagement ratings were for remote small group teaching, whilst for the comparison group it was remote large group teaching that rated lowest for engagement.

Fig. 4. Average Engagement Rating for each mode of learning, with group differences

Learning Activity	Autistic Students	Comparison Group	Group Difference (autistic-comparison)	n	t	df	p
Pre-recorded lectures	3.10	3.80	-0.70	35	1.96	33	.03*
Remote small group	2.75	3.78	-1.03	17	1.88	17	.04*
Remote large group	3.00	2.67	0.33	6	0.38	4	.6
In person large group	3.54	4.08	-0.54	26	1.43	24	.08
In person small group	3.92	4.56	-0.64	30	2.18	28	.02*
In person 1-to-1	4.20	5.00	-0.80	15	1.91	13	.03*

NOTE: *sig. .05

Implications

This study show that MELA-SR is a valuable research tool, gives insights into the aspects of engagement with learning that are important for autistic students.

The findings suggest that the use of remote modes of learning should be reviewed and adapted to meet the needs of autistic students, for example, by making more explicit connections to assessment tasks.

The engagement subconstructs selected by the students to describe their learning allow for more subtle and surprising differences to be identified and further explored. MELA-SR will be further developed to support research on neurodiversity and learning.

References

- Ambler, P. G., Eidels, A., & Gregory, C. (2015). Anxiety and aggression in adolescents with autism spectrum disorders attending mainstream schools. *Research in Autism Spectrum Disorders*, 18, 97–109. <https://doi.org/10.1016/j.rasd.2015.07.005>
- Bailey, J., & Baker, S. T. (2020). A synthesis of the quantitative literature on autistic pupils' experience of barriers to inclusion in mainstream schools. *Journal of Research in Special Educational Needs*. <https://doi.org/10.1111/1471-3802.12490>
- Baron-Cohen, S. (2017). Editorial Perspective: Neurodiversity - a revolutionary concept for autism and psychiatry. *Journal of Child Psychology and Psychiatry*, 58(6), 744–747. <https://doi.org/10.1111/jcpp.12703>
- Bolourian, Y., Zeedyk, S. M., & Blacher, J. (2018). Autism and the University Experience: Narratives from Students with Neurodevelopmental Disorders. *Journal of Autism and Developmental Disorders*, 48(10), 3330–3343. <https://doi.org/10.1007/s10803-018-3599-5>
- Bottema-Beutel, K., Kapp, S. K., Lester, J. N., Sasson, N. J., & Hand, B. N. (2021). Avoiding Ableist Language: Suggestions for Autism Researchers. *Autism in Adulthood*, 3(1), 18–29. <https://doi.org/10.1089/aut.2020.0014>
- Pellicano, L., Dinsmore, A., & Charman, T. (2014). What should autism research focus upon? Community views and priorities from the United Kingdom. *Autism*, 18(7), 756–770. <https://doi.org/10.1177/1362361314529627>
- Shah, P. (2021, December 6). The 2021 Salvesen Lecture: Neurodiversity: Similarities vs Differences. Salvesen Lecture, University of Edinburgh.
- Singer, J. (2019). Reflections on the Neurodiversity Paradigm: What is Neurodiversity? Reflections on the Neurodiversity Paradigm. <https://neurodiversity2.blogspot.com/p/what.html>
- Wang, M.-T., Fredricks, J., Ye, F., Hofkens, T., & Linn, J. S. (2019). Conceptualization and Assessment of Adolescents' Engagement and Disengagement in School: A Multidimensional School Engagement Scale. *European Journal of Psychological Assessment*: Official Organ of the European Association of Psychological Assessment, 35(4), 592–606. <https://doi.org/10.1027/1015-5759/a000431>