



Executive Function Te Whakahaere Whaiaro

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Understanding Executive Function

Challenges with executive functioning are common with autistic people. Executive function refers to our higher-level thinking skills – our ability to plan actions and understand consequences (Miller & Wallis, 2009). This can be summarised as situations where simple tasks can seem overwhelming. Ordinarily, autistic people can function well but various external factors, such as sensory overload, like “the lights are too bright, the lecture theatre is too echoey, the fan is too noisy” and other internal factors such as not understanding a subject or not knowing a process, mental health, and well-being such as anxiety and depression can all lead to difficulty with time-management and general executive functioning.

Survey Findings

Learners in our survey found that many aspects of tertiary study were difficult because of executive functioning challenges.

Understanding instructions in assignments, exams, and assessments

Autistic people can struggle with unfamiliar situations, such as assignments and exams. It may help the student to familiarise themselves with the processes prior, such as using example or practice exams, written guides on the processes or talking through the process with an elder student or tutor. It may also help to have a support person during exams to help with reading and understanding questions that may not seem overly clear to the autistic student.

Learning accommodations and understanding subjects

Autism is a neurological difference. Many things are not written in a way that autistic people will understand easily, and help may be required in clarifying certain study topics, assignment outlines, exam questions, etc. Recruiting autistic learners who have completed the study successfully as paid peer mentors may help bridge this gap in understanding and further assist with discovering and implementing non-traditional forms of supports that may prove useful to the autistic learner.

One parent wrote: *“In terms of assignments, it was more around helping him to get started if he got stuck (as we had no idea of the subject), or helping him to communicate with his tutor.”*

Assistive technology

Autistic people come in all shapes, sizes and colours. Autistic people can be hyper-verbal, partially speaking, non-speaking, selectively mute, or a combination of the aforementioned. Some autistic people use assist technology such as Augmentative and Alternative Communication (AAC) devices to help with speaking or screen-readers to help with reading. It is always best to communicate with the autistic student about how best to integrate their technology into the institutions/schools. You may have to talk with the student's technology provider, with permission, on this.

Sometimes assistive technology can support the person in using calming and focusing strategies to regulate executive functioning.

One student commented on being *“Able to use sensory toys in class”* as a way to assist and support them to being able to learn in the environment. It is especially important to know how much sensory tools can be assistive for autistic people. Use of sensory tools as-stim tools or devices – in classrooms and lectures can be particularly useful to help the student to regulate their energy and focus on the content.

Note-taking

Many autistic people have co-occurring conditions, sometimes undiagnosed, such as dyslexia – a reading disorder or dysgraphia – a difficulty with handwriting and written expression. This may result in supports being required when taking notes or reading written content in exams/assignments. Some autistic people may be resistant - or embarrassed - about accessing supports. Having a general note-taker for a lecture, for example, alongside post-lecture access to these notes for all learners, may be useful for the autistic student to passively utilise this support system. As much as possible, ensuring lectures are similar in format can help make things easier to navigate and easier to notate uniformly.

One student wrote: *“The learning style of each course varied a lot which made note-taking a bit harder for some courses so a more uniform presentation would have helped my learning.”*

If the student identifies themselves to be a strong auditory learner, audio recording or dictation devices may be useful when placed near to the speaker, which ensures the recording is clear.

Time management (organising and meeting deadlines)

Autistic people may experience dyscalculia, which is difficulty with mathematical reasoning and computation. This can also extend to time-management skills: many autistic people have difficulty understanding how long a certain task may take. Having examples of how long it may take on average to answer exam questions, or complete an essay, etc., can help. Unhelpful external sensory input can also play a challenging role with time management.

One student commented: *“Sometimes a person clicking a pen continuously or a calculator making a noise or too bright lighting can really have an impact on our exam outcomes. People don’t understand it is more than ‘annoying’ it is overwhelming.”* This instance is reflective of the types of issues that can compound abilities to complete a task such as an exam on time.

With assignment due dates and exams, it may also be difficult for the student to find motivation or energy to complete the task on time.

Building relationships with neurodivergent learners is crucial to ensuring understanding important things like deadlines. A parent wrote: *“Lack of connection led to him not finding out the date of a crucial test to get into medical school, so he was unable to apply and had to change his course.”* Regularly scheduled progress check-ups, and discussions about what motivates the student, may help in meeting deadlines. Autistic learners who have previously and successfully passed the course or paper may be well-placed to mentor the student in this manner.

Exam accommodations

It may take longer than the allotted time for a student to complete an exam, or they may burn-out or ‘hit a brick wall’ during the exam. If it is possible to re-sit the exam without penalty, take more time, or sit the exam alone in a quiet room, this should be offered. It is also important to consider whether online exams can allow extra time for neurodiverse learners to process questions and answers. As one parent wrote: *“One very bad online exam format she endured and blanked out in was where questions must be answered in sequence. No ability to peruse the questions, start with easier, confidence building questions, or to go back and check completed answers.”*

Understanding timetables

Timetables can be difficult to grasp, even for non-autistic people, especially if they are irregular. One assistive suggestion is to ensure timetables are provided well in advance, with both printed and digital versions available. Learners may have a preferred calendar system such as a wall-planner, email calendar or diary that can become inclusive of the timetables. Some learners may need dedicated time and/or support with achieving this integration.

Transport

It is common for some autistic people not to drive due to sensory or other conditions. Transport can be a barrier for many autistics, even those who do drive. It can be helpful to have a list of transport options and timetables available for the student and parents/caregivers, if applicable as well as a list of parking information for those who drive.

Discussions with the student and the Student Learning Service or equivalent resource about their transport needs can help ensure they are comfortable with getting to and from campus. Sometimes, going to a tertiary institution is the first-time public transport has been utilised by the student, and this can be quite anxiety-inducing. It may help to organise a test run or two using the public transport options to feel it out and see how it goes.

Orientation to the physical environment

Autistic people may experience spatial awareness or navigation issues. Regarding finding classrooms and lecture theatres/halls, plain maps and photographs of the hallways and entrance ways can be useful. Remembering where to go every time can be exhausting. As one student put it: *“Being on campus is very tiring for me, and I often spend a lot of energy remembering when/where to go to class, finding quiet places to study, and hiding my neurodivergent traits. This means that when I come home and need to study, I’m exhausted.”*

Asking first-time learners how they found the navigation experience, and what could be improved, can help with creating a better navigation plan.

Autistic people can experience improved functionality when in a familiar situation such as sitting at the same desk in the classroom setting and the same seat in a lecture theatre setting.

Processing speed

Autistic people may take longer to process what is being said or taught. This can be likened to an ESOL student having to internally translate content and ideas into their own language. This extra time for translation should not be interpreted as a deficit on a part of the autistic student but may be indicative of the student not fully understanding the subject in their own way. Extra time allowed for grasping topics, subjects, or ideas, alongside external or alternative support with understanding them, may benefit the student. As one parent commented: *“[Educators] might need to slow down their approach to allow for that extra processing time.”*

As mentioned in the other sections of this document, access to autistic student(s), as remunerated student peer mentors, who have successfully completed the paper may also help, as they already have a proven grasp on the subject in an autistic way of understanding.

Learning preferences

Autistic learners may have varied learning styles and a way of receiving and interpreting information that can vary from topic to topic. This reflects the fluidity, diversity, and intersection of autistic learning styles, *“Better more inclusive learning materials,”* one student requested would be useful to their learning experience. Teaching content can be provided in various formats, such as written content, visual content, audible content, etc. to help make it more inclusive.

It may help for learners to have a note-taker during lectures, the ability to audio-record or access video-recorded lectures, and/or for slides of content to be available before/during or after sessions. All learners will then have options to receive and review content in a way that best fits their neurologically preferred way of receiving and interpreting information, without having to access support services or other staff/tutors.

Many autistic and neurodivergent people experience short-term and other memory issues, and this approach can also help in reviewing, retention, and transformation of information into long-term memory pathways.

Autistic people may have difficulty with ambiguity in questions, so explicitly detailed information and questions are important. (Learning Styles and Inclusion, Gavin Reid, 2005, p.30)

You can see more information on how to design neurodivergent-accessible learning materials here – [How to design visual learning resources for neurodiverse learners | Full Fabric](#)

You Can Support Your Learners by:

- **Employing neurodivergent learners who have previously passed the course in peer-support roles.** Many autistic learners will find it easier to learn from someone who thinks in a similar way to them.
- **Being open to implementing non-traditional forms of support.** Often thinking outside the box results in the most useful supports.
- **Ensuring that closed captioning/subtitles are available on videos and recorded lectures.** This helps learners who may struggle with auditory processing.
- **Allowing learners to use stim tools in class.** This helps learners to regulate their energy so that they can focus on the content.
- **Providing a structure for taking notes or making notes available to the whole class after a lecture.** Many of the learners in our survey found it difficult to come up with an effective note-taking format, especially when teaching styles varied between courses. Providing a framework for taking notes, or making your own notes available to the class, means learners can ensure they have recorded the key information from the lecture.
- **Providing guidelines for how long learners should spend on each question in an exam, and how long assignments should take.** This helps learners manage their time effectively so they can complete all their work by the due date or by the end of the exam.
- **Scheduling regular progress check-ups.** This helps to ensure that learners do not fall behind by supporting them to work towards deadlines in a structured way.
- **Advising learners of what exam accommodations may be available and supporting learners to access these accommodations.** Useful accommodations might include extra time and sitting the exam in a private room.
- **Providing timetables early.** This ensures learners have time to understand the timetable and ask questions about it if needed. It reduces anxiety by giving learners plenty of time to plan their days; for example, it means learners can plan how to get to campus and practice their commute in advance.
- **Allowing learners to sit in the same seat every class.** Sitting in the same place every class can help autistic learners to function better.
- **Making content available in multiple formats – written, audio, and visual.** For example, you could provide lecture recordings and make your slides and notes available to learners. This means learners can access information in a way that works best for them.

Final Words

Being autistic is like being a second-language learner. It is challenging and rewarding at the same time. All person-centred supports – to accommodate autistic learners and their culture will go a long way to ensure positive outcomes for the learners and ensure they can ‘converse’ and function well in this predominantly neurotypical environment.

References

Miller, E.K., & Wallis, J.D. (2009). Executive function and higher-order cognition: Definition and neural substrates. In L.R. Squire (ed.), *Encyclopedia of Neuroscience* (volume 4, pp. 99-104). Oxford: Academic Press.

[Executive Function and Higher-Order Cognition : Definition and Neural Substrates | Request PDF \(researchgate.net\)](#)

Further Information

[Frontiers | Spatial navigation in autism spectrum disorders: a critical review | Psychology \(frontiersin.org\)](#)

[Spatial Navigation Impairments Among Intellectually High-Functioning Adults With Autism Spectrum Disorder: Exploring Relations With Theory of Mind, Episodic Memory, and Episodic Future Thinking – PMC \(nih.gov\)](#)

Meet Timothy Folkema



Timothy Folkema is an autistic person and a member of the Altogether Autism Consumer Advisory Group. He continually works to share the voice of autistic people and make positive ground-breaking changes for the Autistic communities of Aotearoa New Zealand, working with many organisations to achieve this.