

Working with
children
with poor processing speed



Supporting teachers, leadership teams and professionals in primary and junior secondary schools

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Freelance editor: Lizzie Whyte

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Children with poor processing speed

Processing speed relates to an individual's ability to perform simple repetitive cognitive tasks quickly and automatically.¹ Issues with processing speed only become evident once a person knows how to perform a task, rather than during the initial learning phase.² This is because poor processing speed relates to a reduced ability to automatically or fluently perform *learnt* tasks.

Areas of difficulty for children with poor processing speed may include, perceptual speed which involves psychomotor speed, that is, how fast something is copied, written or manipulated, and/or visual discrimination, that is, how quickly identical items, such as letters, numbers, objects, pictures, or patterns in a series or array are identified, 'natural' effortlessness with number, rate of test taking, and speed of reasoning.³ It is important to note that the *speed and fluency of processing* information is impaired, *not* the child's knowledge and understanding.

Children with poor processing speed have a slow work pace not because they are unable to understand the concept or lack the necessary skills, but because specific aspects that underpin their information processing, used for recalling and formulating thoughts and actions, are not automatic. Their mental activity requires more time and effort than other children. For example, two children might be equally accurate when spelling, however when asked to spell a particular word, the child with poor processing speed will need longer to answer correctly.

Poor processing speed can affect most aspects of everyday living, from getting ready to arrive at school on time to starting and completing school tasks and homework. Adults should not be quick to dismiss or minimise a child's 'slow working pace', as an inability to process information as quickly and fluently as one's peers, may cause significant learning, academic and social difficulties, with implications throughout schooling and beyond.

Processing speed is an element of intelligence measured on tests of cognitive ability commonly used with school-aged children including the WPPSI-IV⁴ and WISC-IV⁵.

Characteristics of children with poor processing speed

Processing skills are crucial in almost all learning activities, particularly those involved in reading, writing, maths and social functioning. Children with poor processing speed are slower and less fluent than same-aged peers when:

- Comparing or scanning visual information such as letters, words, numbers, symbols, patterns or pictures, for similarities or differences.
- Performing basic arithmetic.

¹ Schneider, W. J., & McGrew, K. (2012). The Cattell-Horn-Carroll model of intelligence. In D. Flanagan & P. Harrison (Eds.), *Contemporary Intellectual Assessment: Theories, Tests, and Issues* (3rd ed.) (p. 99-144). NY, USA: Guilford.

² Ibid.

³ Wendling, B.J., & Mather, N. (2009). *Essentials of evidence-based academic interventions*. NJ, USA: John Wiley & Sons, Inc. (www.wiley.com/essentials)

⁴ Wechsler, D. (2014). *Wechsler Preschool and Primary Scale of Intelligence*, (4th ed.) Australian and New Zealand Standardised Edition. Pearson (<http://www.pearsonclinical.com.au>).

⁵ Wechsler, D. (2005). *Wechsler Intelligence Scale for Children*, (4th ed.), Australian Standardised Edition. Pearson (<http://www.pearsonclinical.com.au>).



- Reading and comprehending words and text.
- Writing words or dictation.
- Copying from the board or from a text.
- Doing things in the correct order.
- Starting and finishing work in class.
- Starting and completing homework.
- Learning routines.
- Relating to others.
- Completing tests.

Children with poor processing ability can become frustrated, tired and anxious. While they know how to perform the task, their recall and thinking is slow and requires more effort than for most of their peers. This, in turn, makes them more likely to make simple errors when recalling learnt material such as number facts or spelling words, as slow processing consumes attentional resources, and can distract them from the task at hand.⁶

Impact of poor processing speed

Poor processing speed can have a significant affect on academic performance and future employment outcomes. Issues with processing speed can cause children to experience frustration, as they know how to do their schoolwork, but just can't 'get it out' or make a decision about the next steps. As a result, they may develop a poor self-concept and are at risk of disengagement or dropping out of school, since they feel unable to compete academically with peers.

Processing speed deficits may also mask the abilities of children who are gifted or of average intelligence. Additionally, processing speed deficits can negatively influence the development of children's friendships and self-concept. For example, being slow to respond and unable to 'think on your feet' may lead to social awkwardness.

Teachers can significantly assist these children by reducing the volume of work they are required to do, and by changing the way they are assessed. If modifications or adjustments are not put in place and the child is not supported appropriately at school and at home, it is likely that there will be implications for the rest of their life.

Causes of poor processing speed

Researchers are yet to identify the specific aspects of neurophysiology that underpin information processing but believe it may be influenced by the speed at which information passes along neural circuits.⁷

Children may be identified as having poor processing speed after being assessed on standardised intelligence tests such as the *WISC-IV*. Although processing speed is a cognitive ability, it can be affected by non-cognitive factors, such as difficulties with orthography and reading, motor skills, and/or attention.⁸

⁶ Ibid.

⁷ Schwartz, R.G. (Ed.). (2011). Handbook of child language disorders. Psychology Press

⁸ Hannan, Tim (2005), The WISC-IV & WPPSI-III Clinical Use and Interpretation. Professional development seminar for psychologists, Melbourne. 8 August, 2005.



In order to tailor interventions to assist these children we need to identify the cause of the difficulties, which may include problems in one or more of the following areas:

- Motor skills, such as those affecting handwriting and pencil grip
- Vision impairment
- Inadequate sleep
- Poor overall nutrition or specific issues such as an iron deficiency
- Anxiety caused by self-doubt, perfectionism, worry or stress
- Classroom distractors, such as noise, light and other children
- Persistent inattention or daydreaming
- Activation; the ability to get started on a task
- Motivation and persistence to complete tasks
- Reasoning
- Working memory. (An inter-play between processing speed and working memory is often found in the identification of dyslexia.)⁹
- Learning difficulties. (Two-thirds of children with learning difficulties have slower processing speeds.)¹⁰
- Physical injury, illness, and health issues such as low thyroid levels¹¹ or use of some medications
- Neurologically based childhood disorders such as Attention Deficit Hyperactivity Disorder (ADHD)¹² or Autism Spectrum Disorder (ASD).¹³

An understanding of the issues underlying a child's poor processing speed will assist in the development of a supportive personalised intervention. To assist with this you can select from or adapt the following general strategies and those that address specific issues.

Caution

Teachers should refrain from saying a child is not learning or having problems learning because of poor processing speed, unless this diagnosis has been substantiated by a psychologist, other allied health professional or medical specialist.

⁹ Evely, M. and Ganim, Z., (2013) Working with children with dyslexia, Melbourne, Australia: Psych4Schools (<http://www.psych4schools.com.au/free-resources/wwc>).

¹⁰ Weiler, M. D, Forbes, P.W, Kirkwood, M.W., Waber, D.P. (2003). The developmental course of processing speed in children with and without learning disabilities. *Journal of experimental child psychology*, 85(2), 178-94.

¹¹ Butnik, S. M. (2013). Understanding, diagnosing, and coping with slow processing speed. *2e Newsletter*. (http://www.davidsongifted.org/db/Articles_id_10782.aspx)

¹² Ibid

¹³ Hedvall, A., Fernell, E., Holm, A., Johnels, J.A., Gillberg, C., and Billstedt, E. (2013). Autism, Processing Speed, and Adaptive Functioning in Preschool Children, *The Scientific World Journal*. (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673455/#__ffn_sectitle).



Strategies to support a child with poor processing speed

- **Consider recommending referral to a general practitioner, optometrist, occupational therapist (OT), psychologist, or another appropriate medical specialist.** It is important to rule out any issues the child may have with vision, motor skills, or medical health (such as low thyroid, an iron deficiency, epilepsy or an injury). Alternatively, the child may experience psychological issues (such as anxiety or depression) or disorders such as Attention Deficit Hyperactivity Disorder (ADHD), Attention Deficit Disorder (ADD) or Autism Spectrum Disorder (ASD) that affect processing speed. Referral by a general practitioner, to a paediatrician, neurologist, or child psychiatrist is needed to diagnose ADHD/ADD or ASD. Psychologists may also be involved in diagnosis and treatment. Referrals to these professionals must be made through the child's parents.
- **Implement recommendations in medical, psychological or other allied health reports** that are designed to help teachers and parents to assist and support the child. Discuss or ask questions if you do not understand or fully agree with suggestions. Specific recommendations can assist teachers to develop an individual learning plan for the child.
- **Address any co-existing conditions.** Two-thirds of children with learning difficulties have poor processing speed. Read the appropriate Psych4Schools ebooklets:
 - *Working with children who have learning disorders (Second edition)*
 - *Working with children with dyslexia*
 - *Working with children with working memory difficulties*
 - *Working with children with dyscalculia (mathematics disability)*
 - *Working with children diagnosed with Asperger's syndrome*
 - *Working with children diagnosed with attention deficit hyperactivity disorder (ADHD)* and
 - Working with children diagnosed with autism spectrum disorder (ASD) and Working with children who are anxious, as they become available.
- **Listen to and if appropriate accommodate the parents' concerns and advice.** Often they will have specialist knowledge or observations that may assist you in formulating best teaching practice to support the child's learning.

Some parents will present as angry or frustrated. It may be helpful to meet them with another staff member, such as the special needs or welfare coordinator, or assistant or deputy principal or school psychologist. Tips to assist with parent meetings can be found in the [Working with parents](#) section of the Psych4Schools website.

- **Allow the child more time.** Wait several seconds or more before expecting the child to answer questions, so they can organise their thinking. This extra time can help the child to process the question, and retrieve or formulate an answer. It can be helpful to give the child advance warning of questions and tasks. For written tasks and assignments, it may be necessary to allow up to double the time allocated for most other children. Similarly, allow more time for the child to make decisions when offered a choice of activities, and answering questions during quizzes, tests or exams.



- **Develop an Individual Learning Plan (ILP).** Use information from various sources, including relevant reports from the school, the child's parents or psychologist. Monitor progress and review ILPs at least twice a year. Address areas of academic weakness, as well as social or interpersonal issues that the child may not consider to be important. It is essential that:
 - More time for learning is allocated
 - Alternatives to long written tasks are provided
 - Automaticity in literacy and numeracy skills are developed and
 - Charting of personal progress is targeted for additional support by parents, teachers and other adults.

Modify assessment and reduce the quantity of work

- **Reduce the volume of class work,** homework, tests and exams. Ensure you reduce the volume and not the level of difficulty. Aim to help the child to produce quality work, not quantity. For example:
 - **Ask the child to give brief written responses.** Modify work requirements so, for example, have them write dot points or a few sentences instead of half a page, or two pages instead of five.
 - **Instead of a written essay,** for example, set an oral presentation, supported by PowerPoint slides that include dot points, phrases or a few short sentences, concept maps, pictures, graphs and other visual information.
 - **Assign fewer maths problems.** Ask the child to complete an achievable number of selected problems. For example, ensure the child knows they should complete every second question rather than the first section of work alone, so they respond to both straightforward and more difficult problems.
- **Reduce the amount of note taking and writing required.** The child will struggle to write or copy quickly and accurately. To reduce the need to copy from the board or write notes:
 - **Take photos of the whiteboard.** The child can save the image and load it onto their computer, tablet device or smartphone, or print it for later reference.
 - **Allow children to film or record the lesson,** so the child can review it later, at their own pace. A review of the lesson can be set for homework. Speech-to-text software can be used to convert the spoken word into written notes and then edited, if required. Speech-to-text software is built in to Windows and Mac computers and tablets. A web search will assist you to activate it on your system.
 - **Hand out notes** to support oral presentations and information on the whiteboard.
 - **Assign a class note-taker** whose notes are photocopied and distributed.
 - **Use a smartpen,** such as *Livescribe*, that allow children to create an audio recording of a session, then transfer it to a document in digital format.



Build automaticity

There is some evidence that processing speed can be improved with training.^{14 15}

- **Monitor time on tasks, and set limits.** Use visual indicators to assist the child to allocate time to a task and track how much time remains to transition between tasks. Visual timers and 60-minute clocks that display time elapsing can be found online. See www.timetimer.com, www.spectronicsinoz.com and www.specialneedstoys.com. If using an analogue clock, place a sticker on its face to indicate when time is up, or draw on it with a marker.
- **Provide systematic, direct and explicit instruction to increase reading fluency** that helps children recognise letters, common letter sequences, sight vocabulary and improve text reading. Commercial programs such as *as Minilit*, *Multilit (Making Up for Lost Time in Literacy)* and *Quicksmart Literacy* (a program for low-achieving students in Years 5 to 9), focus on improving word recognition and fluency in reading connected texts, and provide a structure for developing and practicing these skills. The programs recommend regular sessions. Some schools train teacher aides or assistants as tutors.
- **Train, train, train. Frame practice or repetition as ‘training’** similar to sports training. Talk about how elite athletes need to train every day to build strength and skill in order to compete successfully. Similarly, the child needs to build strength and speed into their ability to process information to achieve their personal best.
- **Use timed activities to increase speed and automaticity of basic numeracy and literacy skills.** Online educational maths games and flash cards can help develop automatic recall of basic maths facts and calculations, and recognition of sight words. See *Oxford word lists* and Psych4Schools ebooklet *Working with children with dyscalculia*.
- **Assist the child to chart progress** in one or two areas as they ‘train’ or practice. For example you might work with the child on increasing reading or writing fluency and speed. Performing timed fortnightly or monthly assessments of reading or writing fluency and speed, and visually recording progress can show that training pays off; and build self-concept and self-confidence.
- **Celebrate each achievement**, as appropriate, to motivate the child.

Modify instructions

- **Pace instructions to match the child’s tolerance for learning, and the speed at which the child can process information.** Observe the child’s face, body language and note any agitated movements to gauge the ideal speed of your delivery. Continue to provide guided support.
- **Avoid long, multiple-step instructions** as the child may still be processing the first step and miss subsequent instructions.
 - **Break instructions into short simple steps:** ‘Find your writing book. Open to page 10. Complete activity one.’ Pause after each instruction, and wait until the child has completed the action before giving the next instruction.

¹⁴ Takeuchi, H., Taki, Y., Hashizume, H., Sassa, Y., Nagase, T., Nouchi, R. & Kawashima, R. (2011). ‘Effects of Training of Processing Speed on Neural Systems.’ *The journal of neuroscience*, 31(34), pp 12139-12148.
<http://www.jneurosci.org/content/31/34/12139.long>

¹⁵ Edwards, J.D., Wadley, V.G., Vance, D.E., Wood, K., Roenker, D.L. & Ball, K.K. (2005). ‘The impact of speed of processing training on cognitive and everyday performance.’ *Aging and mental health*, 9, pp 262-271.
http://www.tandfonline.com/doi/abs/10.1080/13607860412331336788#.Uu8Tq_39OC4



- **Use visual cues**, such as holding up the book and showing the cover first, before opening it to page 10 as you provide the verbal instructions.
- **Repeat each instruction or step**, if necessary.
- **Provide the child with a list of instructions** so they can process and revisit information at their own pace. Do not require the child to copy instructions from the board. Provide a handout or digital copy.
- **Provide notice before questioning the child in front of the class.** An example would be to say: 'In a minute, I am going to ask what this pie chart reveals about the countries in which children were born. Look carefully at the chart. I want Amy's (child with poor processing speed) group to think about how many children were born in Asian countries, while I ask another group a different question first.' Pace your voice, breaking the question into phrases, and repeat questions when necessary.

Homework

- **Set clear time limits on homework.** The child should not be set more homework than they can achieve in the allotted time. The child may like to use a timer or stopwatch.
- **Help the child to break long homework tasks into small**, manageable blocks of time. For example, if the time limit for an older child is one hour, recommend they break the task into four 15-minute components. Suggest the child takes a short break between each 15-minute segment to provide a mental break and maintain motivation and focus.
- **Monitor time actively spent on homework tasks.** With young children, ask parents to monitor the time spent on homework. Older children can self-monitor. If the child is repeatedly spending too long on homework, the quantity of homework should be reduced. Remember quality is more important than quantity.

Address other factors affecting processing speed

The following issues may hamper processing speed. Only implement those recommendations that apply to any individual child.

Handwriting difficulties

Processing speed may be hampered by poor handwriting due to dysgraphia (trouble organising letters, numbers and words), motor skill deficit, or lack of practice. *Anecdotal reports* suggest that increased use of touch screen tablets, phones, and keyboards is affecting the development of effective handwriting skills. Combined with a lack of physical exercise, for some children this is leading to underdevelopment in the arm and hand muscles required to hold and write with a pen or pencil fluently and legibly for sustained periods.¹⁶ If this is an issue:

- **Systematically assist the child to recognise and write lowercase letters**, holding the pencil with the precision grip; correctly forming and shaping lowercase letters; and using the non-writing hand for paper management and upper body control. Show the child that most letters start at the top, except for d and e. Refer to handwriting guidelines for your state or territory.

¹⁶ Starke, P. (2013). 'Tech savvy kids can't push a pencil.' News.com.au News Ltd ([http://www.news.com.au/technology/tech-savvy-kid\(s-cant-push-a-pencil/story-e6frro0-1226634952869\)](http://www.news.com.au/technology/tech-savvy-kid(s-cant-push-a-pencil/story-e6frro0-1226634952869))).



- **Practice legibility, fluency, pencil control and posture.**
- **Suggest therapy sessions with an occupational therapist (OT)** to focus on improving upper body coordination, fine motor skill, pencil control, and handwriting legibility. A Chronic Disease Management/GP Management Plan may potentially fund such sessions. Psychologists may recommend that the child's parents liaise with their GP to explore eligibility for allied health team care. The GP may determine that occupational therapy sessions could improve the child's motor skills.
- **Use a handwriting app for your state or territory**, such as *rED Writing*.
- **Use assistive software in conjunction with handwriting practice.** Provide access to word processing software, or speech-to-text word recognition software built in to smart-tablets, phones and computers. A web search can provide instructions for using it on your system. Assistive software should not replace handwriting, but relieve the burden of handwriting if it is affecting the child's ability to produce work. If you have any questions, consult with the school's psychologist or an OT.

Psychosocial issues

Psychosocial issues such as poor sleep, anxiety, worry, stress and perfectionism may impact on a child's processing speed.

- **Encourage parents to ensure the child gets adequate sleep.** *Lack of sleep*¹⁷ and chronic tiredness can affect a child's learning and anxiety levels. For information about meeting basic physiological needs, see the Psych4Schools blog post '*Promoting student wellbeing*'.
- **Talk with the child about their strengths** and the things at which they excel. Have the child list their strengths. It may help to highlight that everyone has strengths and weaknesses. Ask the child to identify the strengths of a close friend, and then use these insights to highlight the strengths of the child.
- **Carefully monitor the child.** The child may get stuck on a small aspect of a task or question, leading to frustration and distress. Encourage the child to seek assistance.
- **Use a step-by-step schedule** to help you monitor and guide the child to complete steps within allocated timeframes. This can help ensure that tasks are not avoided and acceptable quantities of work are achieved.
- **Assist the child to set realistic goals.** Listen without judgment and avoid dismissing the child's concerns or beliefs. Together, select one or two areas for change, and set a goal that you both agree is achievable. Work together to select steps or a strategy to help the child to achieve the goal, such as setting a time limit of 10 minutes to brainstorm ideas. Remember, steps or strategies must be achievable. For example if the goal is to reduce the time taken to decide on the 'right' idea for a story, strategies may include the use of a bank of writing ideas such as:
 - exciting, sad, spooky or amazing topics
 - possible titles
 - interesting vocabulary lists

¹⁷ Psych4Schools, Members Forum (2011). Students who can't fall asleep at nights.



- possible character names and descriptions
- possible locations
- quirky opening and concluding sentences for narratives or recounts.
- **Choose one idea from each category above and begin writing.** It can be helpful for the child to draw them out of a hat, or number each option and roll a dice to decide.
- **Use writing templates to remind the child how to structure their text.**
- **Generate alternative ways to complete tasks** in order to help reduce anxiety. Some children may be less anxious and find it is less time-consuming if they type rather than hand write. This can facilitate revision of ideas, correction of errors, and reduce worry about 'perfect' handwriting. Similarly, the child might list dot points for a class presentation, and then complete the task in a traditional format for assessment.
- **Put the child's worry in perspective,** for example:
 - Consider whether the source of the worry is a 'big' problem or whether it is actually only 'annoying' or 'a little bit upsetting', rather than the 'worst worry possible'.
 - Restrict, or limit worrying. Suggest the child sets aside 5-10 minutes at a particular time each day to discuss their worries with an adult, or to write a worry journal. If necessary, remind the child that it is not yet 'worry time' or that 'worry time is at 3 o'clock'. Should 'worry time' be set in the late afternoon, make sure the child finishes the day with a positive thought once 'worry time' is over. Obviously for older children asking them subtly to 'save it for later' or to 'leave it until journaling' is more appropriate than labelling it 'worry time' in front of others.
- **Read Psych4Schools ebooklets:**
 - *Working with children who worry excessively*
 - *Working with children who are perfectionistic* and
 - *Working with children who are anxious,* as it becomes available.

Problems getting started or with organisation

For some children difficulty organising time and materials, deciding how best to begin, confidence, or motivation may affect processing speed. In such cases, the recommendations below may assist.

- **Reward effort, not just outcome.** Feeling worried about getting the answer incorrect or a piece of work not being 'good enough' can paralyse some children into not beginning a task. Rewarding effort can provide the child with some incentive to 'have a go'.
- **Help the child to be organised.** Provide additional assistance early each week, especially with organisation of the child's workspace, materials, folders and books. Knowing that everything has its own place will help prepare the child for work and learning.
- **Use peer modeling.** Before asking the class to begin a task, ask children to give examples about how they will get started. Which materials will they get out? What will they do first? What will they do next?
- **Break tasks into smaller components.** This helps to reduce anxiety, the feeling that 'it's all too much, I don't know where to start.' Feelings of confusion and being overwhelmed are very



common in children with learning difficulties, as well as those who are perfectionists or who suffer from anxiety.

- **Work one-on-one with a child** to assist them to begin the task.
- **Use a timetable or visual planner** to indicate the next activity, or to help the child check what to do next.
- **Show the child how to independently use step-by-step instructions or templates.**
- **Develop a plan.** Before completing large tasks, such as essays or projects, have the class devise a step-by-step plan explaining how they will complete the task. Be as specific as possible. Include time limits for each step. Reward on-task behaviour.

Attention issues

Poor processing speed may be caused by issues a child has with attending to the task. For example, many children with Attention Deficit Hyperactivity Disorder (ADHD) or Autism Spectrum Disorder (ASD) have processing speed deficits. In these cases, the recommendations below may assist:

- **Redirect off-task behaviour.** For example, if the child is self-distracting, use the phrase 'eyes to me' to prompt all children to attend to you in preparation for listening to an instruction.
- **Notice on-task behaviour.** Use specific, targeted feedback, *praise*, or reinforcement. Positive reinforcement is most effective when it is specific and immediately follows desired behaviours. For example, 'Well done, Karl, you have been concentrating for 10 minutes.'
- **Set a time limit.** Long, or complex tasks should be broken into smaller time allotments. A non-intrusive timing device such as a stopwatch, egg timer, or *visual timer* can help the child to maintain focus. Breaking an hour-long task into 10-minute periods with an alarm at the end of each 10-minute timeslot can help the child to stay focused for ten minutes at a time. Once the alarm sounds the child can stand, move around or daydream for a minute, then re-set the timer for the next 10 minutes of focused work. When setting times, remember these children need longer than peers to complete an activity.
- **Reduce distractions.** Ensure the child is not seated beside a thoroughfare. Reduce external noise by closing windows or doors. If possible, allow the child to sit at a designated 'workspace' for independent work, which is located slightly away from peers, and facing a wall with limited visual distractions, such as a view from windows.
- **Devise a system for 'down time'** or frequent breaks, as it takes the child a lot of effort to process instructions and information in order to learn. Some children prefer a card system, agreed hand gesture, or to simply ask for down time. It can be helpful to have an area in your classroom that is quiet and away from other children. This may be a desk or beanbag in the corner of the classroom.
- **Read the Psych4Schools ebooklet *Working with children with ADHD*** for more ideas on working with a child to boost attention in the classroom.



References and further resources

Books

- Braaten, E. & Willoughby, B. (2014). *Bright Kids Who Can't Keep Up: Help Your Child Overcome Slow Processing Speed and Succeed in a Fast-Paced World*. NY, USA: Guilford Press.
- Dornbush, M. P. & Pruitt, S. K. (2009). *Tigers, Too: Executive Functions/Speed of Processing/Memory: Impact on Academic, Behavioral, and Social Functioning of Students with ADHD, Tourette Syndrome and OCD Modifications and Interventions*. GA, USA: Parkaire Press Inc.

Apps

- Time Timer <https://itunes.apple.com/au/app/time-timer/id332520417?mt=8> Useful as you can view up to four timers at once. For a traditional time timer, see www.timetimer.com
- Dragon dictate <https://itunes.apple.com/au/app/dragon-dictation/id341446764?mt=8>

Articles

- Beatnik, S. (2013). Understanding diagnosing and coping with slow processing speed. *2e Newsletter*, Retrieved from http://www.davidsongifted.org/db/Articles_id_10782.aspx
- Hedvall, A., Fernell, E., Holm, A., Johnels, J.A., Gillberg, C., and Billstedt, E. (2013). Autism, Processing Speed, and Adaptive Functioning in Preschool Children, *The Scientific World Journal*. doi: [10.1155/2013/158263](https://doi.org/10.1155/2013/158263)
- Michelsen, M., and Vaught, K. (n.d.). Facts about Processing Speed Retrieved from http://brandonhall.org/docs/processing_speed.pdf

Video

- Lavoie, R (Writer). (2013) *How difficult can this be? F.A.T. City—A Learning difficulties workshop*. [DVD]. USA: PBS Educational Materials.

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