(LEFT-)HANDEDNESS IN EDUCATION IN AUSTRALIA

Our Children are Being Left Behind

A Discussion Paper

Steve McGuirk
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Preamble

On 5th July 2023, the Australian Government published its discussion paper 'Review to Inform a Better and Fairer Education System' (the Review) (Education, July, 2023)[1]. The Expert Panel proposes changes and considerations to the Education System to meet the *2019 Alice Springs (Mparntwe) Education Declaration* (the Mparntwe Education Declaration) in preparation of the next National School Reform Agreement.

The Review states:

> *The Mparntwe Education Declaration, signed by all (Federal, State and Territory) Education Ministers, sets out two education goals for Australia which remain relevant: (1) the Australian education system promotes excellence and equity, and (2) all young Australians become confident and creative individuals, successful lifelong learners, and active and informed members of the community.* (page 10)

and defines the philosophy that

> *Every student should be supported as a whole person and enabled to meet their potential by having their learning needs met. Education should be inclusive and delivered in a culturally responsive manner. It should achieve equity across all schools, recognising the needs of all students.* (page 11)

It is our view that these aims can not be achieved without considering of the handedness of each student. There is no reference to handedness in the Review document.

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About Left-Handedness

Left-handers are not an insignificant minority. An approximate 10% proportion of left-handers has been evidenced in the last 5,000 years of human history[2]. The most recent scientific estimate is that 10.6% of the population is left-handed[3], however this is thought to be an underestimation as the study included research dating back to 1927 when left-handedness was socially less accepted. This is expected to grow to as much as 15.2% in the future[4] and our own surveys have revealed Sydney primary school populations of up to 15% being left-handed.

With over 4 million students across Australia in 2022[5], there are an estimated 500,000 to 600,00 left-handed students in our schools. On average, 3 or 4 students will be left-handed in every classroom.

Left-handedness is normal. It is a natural characteristic, a normal variant of human hand preference. An Australian-led study identified 41 genetic loci associated with left-handedness and an additional seven for ambidexterity[6]. Real-time ultrasound has identified that lateralised behaviour starts *in utero* as early as 10 weeks gestation, reinforcing a genetic control of handedness[7]. Male left-handers outnumber female left-handers by approximately 5:4[8]. Familial and, to a lesser degree, environmental influences on handedness have also been identified as contributing to the handedness of a person[9]. Our handedness generally becomes noticeable in the first 2 or 3 years of life[10].

Discrimination and Adversity

We live in a world primarily designed by and created for the majority: right-handers[11]. Societal norms of the 19th and first half of the 20th Century, saw most left-handed children being forcibly changed to right-handed behaviours in their schooling[12]. Cruel oppressive practices were frequently used on young children to convert them from being left-handed including corporal punishment, tying down the left hand and forcing the child to sit on their left hand when writing. These practices continue in some parts of the world where left-handedness is still not tolerated such as parts of Asia and Africa[13]. It is reported that up to two thirds of the world's population continues to stigmatise left-handedness[14]. This bias may be relevant in Australia with immigration bringing these cultural beliefs and practices with them. Those cultural beliefs are instilled in the child's skills development by the extended family before the child attends school, masking the child's natural hand preference when they commence schooling.

It has been over 60 years since educators in Australia stopped "correcting" left-handedness *en masse*. The timing of this change corresponds with the identification of poorer academic achievement in "right-hand writers with left-hand tendencies"[15], yet we still hear of isolated instances where an educator tries to change a student from being left-handed. Cultural, societal and familial biases continue against left-handedness[16] which adds to the confusion and lack of support experienced by these young learners.

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Switching the handedness of a person creates physiological changes in the brain but does not suppress the left-handed functional areas[17]. The left hemisphere of the human brain controls the motor function of the right side of the body, and vice versa, but a forced change in handedness results in control by both brain hemispheres[18]. Researchers have previously identified links between the prevalence of stuttering and switching handedness and weak laterality[19]. Other consequences of switching handedness include disturbances in speech, memory and concentration as well as poor quality outputs and low self-esteem[20]. Switched left-handed writers continued to display a preference for the left hand in most other activities despite the intensive writing retraining[21]. We often receive apologies from older, switched left-handers embarrassed about the poor quality of their writing due to being forced to write right-handed as a child. Such conflicts in brain activity can be avoided by teaching students using the correct method with the correct tools in the correct hand.

Times Are Changing

While left-handedness is no longer shunned in Australian classrooms, there appears to be little understanding on the methods required to support these students. The support of left-handed students can best be described as passive. In our own discussions with post-graduate teaching professionals across the country over the last 20 years, we have yet to find one Australian university or teaching institution that covers the topic of handedness in education in their Primary Education or Early Childhood Education degree courses. These teachers felt that they were poorly equipped to help this significant portion of their students when entering the classroom after graduation.

Any and all curricula, whether statutory or non-statutory, must place left-handed children on equal footing with right-handed children and must not discriminate against left-handed children in their teaching or resources. However, left-handed children should not be singled out for their handedness as this leads to stigmatisation. Left-handed students need to be treated the same as their right-handed colleagues but need to be taught left-handed methods where appropriate. This facilitates normalisation and acceptance by their peers.

Poor development of basic skills leads to poor confidence and self-esteem, stigmatisation and exclusion as well as slowed progression through the learning stages.

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Understanding the science - motor-sensory integration

Motor-sensory integration is vital for learning efficiently and a key stage in childhood development. In the years from birth to 8 years of age humans develop motor-sensory integration which is the foundation for all higher level skill development. A considerable number of cognitive processes depend on multisensory integration[22].

The key objective of early years' education and physical activities must be to encourage children to achieve good multisensory integration in order to move on to the next stage in their development. This is a critical point in human development and the foundation skills for numeracy and literacy.

To learn efficiently, both eyes need to work together to send messages to the brain. To achieve this we need:

- Good postural control so that there is a stable upright frame to support the establishment of binocular vision
- Integration of primitive reflexes to have full control of the muscles around the eyes
- Bilateral integration of motor skills and vision so that the eyes can work across the mid-line smoothly
- Good sound processing skills so that when sound and vision work together (eg. when a person reads for meaning) the eyes do not dysregulate
- strong, well-developed muscles around each eye.

Humans have evolved to master motor-sensory integration by the time they are 8 years old. However, when we do not support children to fully integrate these skills it leaves many children to rely on coping strategies. Motor-sensory integration has not reached maturity in children younger than eight years old[23].

Improving motor-sensory integration will lead to calmer behaviour in the classroom. Sound processing affects a child's ability to sequence and manage time. Improving postural control will improve sound processing and prevent the inner ear from becoming weak. Binocular vision impacts on visual recall, memory and ability to see patterns.

All of these will have an impact on a child's learning, especially for left-handed children.

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New Teacher Issues

Our discussions with the post-graduate teachers across the country have highlighted four topics relating to handedness that they felt underprepared in when entering the classroom:

1. Identification and assessment of left-handed students
2. Classroom management of left-handed students
3. Writing skills development
4. Classroom tools to assist left-handed students

1. Identification and assessment of left-handed students

Handedness is typically described as the hand one prefers to use for unimanual (one-handed) tasks[24]. As mentioned previously, human handedness is an innate trait and past practices of switching handedness was shown to be unsuccessful in changing many behaviours. Early identification of a child's handedness assists educators and carers in the development of visual-motor skills, as those children who tended to repeatedly perform a task with the same hand were generally better developed than children whose use of hands was less consistent[25]. Although hand preference generally becomes established at 3-4 years of age, it may not become established until 6 years of age or older[26].

The simplest and most commonly-used method to identify a person's handedness is to observe which hand is used for writing[27]. Writing is a complex learned behaviour and the writer's handedness can be changed, usually with considerable effort, as discussed earlier. Many other behaviours are natural and can show a person to have varying degrees of mixed handedness. Using only writing to define a person's handedness may therefore miss other strengths or weaknesses in relation to certain tasks.

The Edinburgh Handedness Inventory[28] was the first structured approach to identifying a person's handedness by rating the use of either hand in the performance of 10 manual tasks. Alternative assessment methods have since been developed[2930] but these are also targeted at adult populations. Each method uses a self-assessment questionnaire to identify various tasks that are performed with a preferred hand and are generally not suited for the assessment of children.

Ideally, handedness testing should be able to be performed efficiently, quickly and without special skills or equipment. Instructions should be verbal and without suggestion of which hand to use. The preferred hand should be noted for each task, remembering that the preference may change during the assessment or after the assessment depending on the child's handedness development. Different tasks may use different hands also, indicating a degree of mixed handedness. Throwing and writing hands may also be discordant, similarly with dominant eye, ear & foot[31].

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As a result, we recommend observing the child during the following activities:

1. Writing/Drawing: Which hand is consistently used for the task? Which gives the better result?
2. Reaching: With pencils placed centrally in front of the child, which hand reaches for the pencil each time? Is it the same as the drawing hand?
3. Pinching: Move 5-10 marbles or other small item from one plastic container to another using one hand. Which hand is used?
4. Scissors: Which hand does the child prefer to use? Which hand gives the better result? (Ensure left-handed and right-handed scissors are available for the task)
5. Throwing: Which hand is used to throw a ball or roll it on the floor?

Use these results as the starting point for motor skills development using the natural hand preferences and revise if indicated.

2. Classroom management of left-handed students

Left-handers perceive and process images differently to right-handers where orientation can have an effect on a person's reaction to a stimulus[32]. Left-handed students will benefit by seating centrally in the classroom to minimise distortion of imagery.

Students sitting at twin desks may cause distraction or disruption through bumping elbows during activities such as writing. Left-handed writers should sit to the left of right-handed writers to prevent this conflict.

While usually not used with younger students, integrated chairs with fold-out tables pose a significant issue and risk for left-handed students, whether they are individual units or ganged in rows in lecture theatre format. These are almost exclusively provided with the fold-out desk in the right-handed format. Significant posture issues are created when these seating arrangements are used by left-handers[33]. A minimum of 10% of these seats should be purchased and installed in a left-handed format to accommodate left-handed students.

The use of whiteboards is a significant issue for left-handers as the writing hand often runs over the written work thereby smudging or erasing the work. The issue is greater for personal whiteboards used on a desk top than for the larger vertical classroom whiteboards, making them unsuitable for writing practice sessions. However, the issues can be avoided by following the left-handed writing principles outlined below.

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3. Writing Skills Development

In the 21st Century communications technology is present in most aspects of our lives. The Australian Curriculum requires the use of computing and other technologies from an early age but handwriting remains an important component of student learning[34]. Writing letters and greeting cards has been replaced in the last 20 years by email, texting and video technologies. But writing remains a life skill that is needed frequently, despite the availability of technology, for the completion of forms and lists and even signing a name.

While the use of technology may be more efficient in many aspects, there are pedagogical reasons to still learn efficient handwriting. Writing helps children to fix certain patterns in their mind: letter shapes, the correct movements for making letters, letter-sound associations, letter names for discussing spelling and patterns of letter occurrence[35].

"When preliterate children perceive letters, only free-form printing experience results in the recruitment of the visual areas used in letter-processing, and the motor regions seen in letter production. This finding adds to previous research showing that letter perception is facilitated by handwriting experience, and it further suggests that handwriting experience is important for letter processing in the brain."[36]

Comparisons of memory retrieval when making study notes using writing compared to electronic notetaking showed significant benefits when writing with pen and paper[3738].

Australian English Curriculum for the Foundation Year requires students to
"Produce some lower case and upper case letters using learned letter formations

- Adopting correct posture and pencil grip
- Learning to produce simple handwriting movements
- Following clear demonstrations of how to construct each letter (for example where to start; which direction to write)
- Learning to construct lower case letters and to combine these into words
- Learning to construct some upper case letters."[39]

The Curriculum does not make reference to handedness in lettering, writing or learning.

The Early Years Learning Framework for Australia does not specify lettering or writing in its content but asks children to recognise letters and sounds as well as use art and drawing in communication[40]. The Framework does not reference handedness nor the need to support the skills development of the child in relation to their handedness.

Handwriting should be explicitly taught[41] with actual handwriting paper and pencil skills practice[42]. Failure to master a good pencil grasp, the dynamic tripod grip, and automatic letter formation can have a significant impact on a child's learning ability. A child who is unable to generate letter shapes automatically and struggles to hold a pencil correctly will develop illegible, painful and slow handwriting leaving them disadvantaged when writing.

Early techniques become lifelong habits so it is important that correct techniques are learned early which will enable further learning and skills development. From the very

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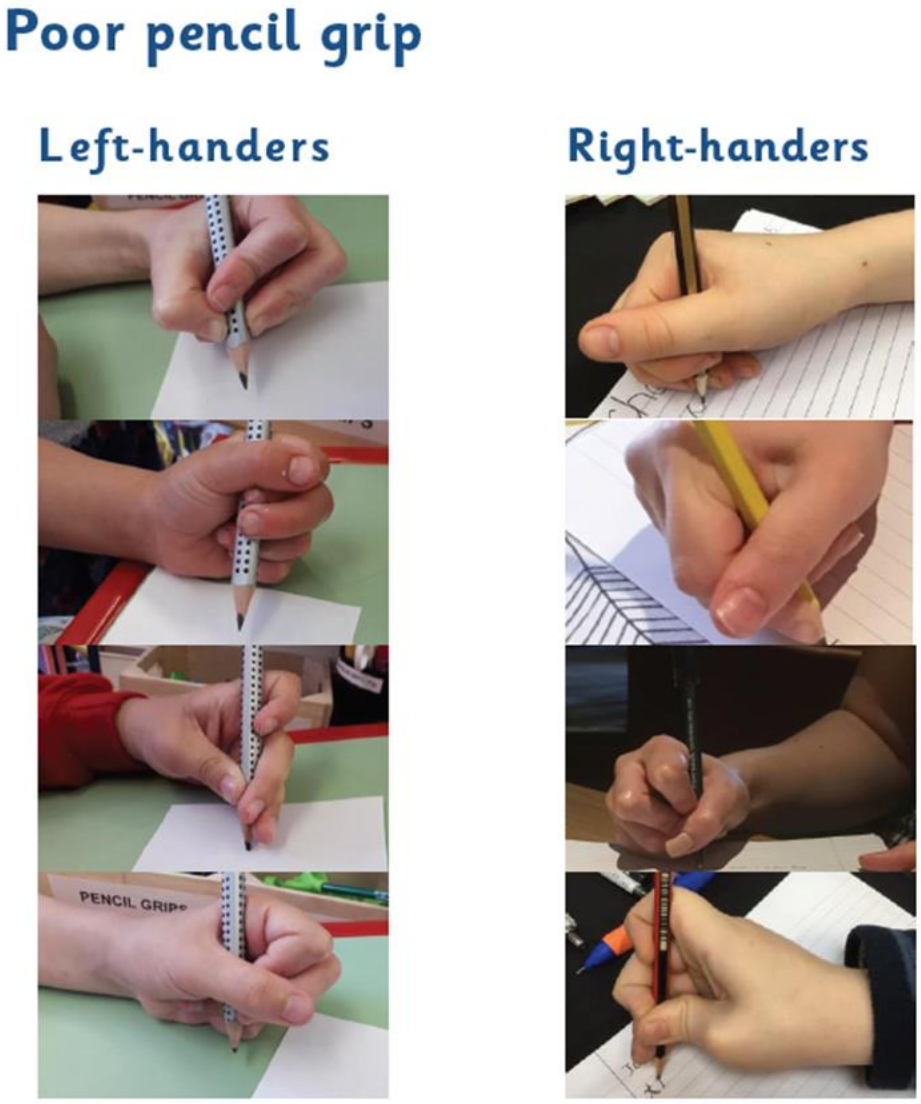
beginning, being taught a relaxed dynamic tripod grip while colouring or drawing will evolve into the same comfortable grip for lettering and writing. This has great importance for left-handed writers, as discussed below.

English script is designed for the right hand to drag the pen across the paper[43]. Left-handers must push the pen across the paper, whilst using the same muscles but in a different order to the right-hander. The writing hand immediately moves over the written word, both hiding it from view and smudging the word when written in soft pencil or ink. Word spacing is also difficult due to the hand obscuring the previously written word. All of these factors interfere with the quality of work. Left-handers produce less consistent and efficient handwriting strokes and more slowly than right-handers[44]. A specific lettering technique is therefore required for left-handed students.

The left-handed child requires specific instruction because of a natural tendency to write from right to left. The grip needs to allow the writer to see what they are writing. In the absence of specific left-handed instruction, many left-handers develop awkward grips if left unattended when they first start school and mirror right-handed writing[45].



Pencil grips of children presenting for assistance

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"Difficulty, or lack of fluency, with handwriting is likely to interfere with writing processes as students have to focus their attention on accurately producing letters. It may also affect students' motivation to write. Handwriting fluency enables students to focus more of their attention on content and writing processes."[46] The legibility of children's writing impacts their educational experiences and outcomes[47] and can affect students' grades across all academic subjects[48].

An estimated 10-30% of students experience difficulties in handwriting[49]. In one study, left-handers almost exclusively made up the group of students with writing difficulties at a school[50]. Handwriting difficulties are among the most common reasons for referral to occupational therapy[51]. The use of the inverted, or 'hook', posture occurs in around 30% of left-handers[52] and may contribute to slower writing and fatigue during prolonged writing.

Early writing should utilise simple printed lettering for ease of use and recognition. Fonts and techniques using pre-cursive and lead-in letter shapes (leads and tails) are more complicated and arduous to form than printed letters. It is highly unlikely for young children to have developed the necessary visual and motor-sensory integration skills, sufficient pencil control and the ability to change direction several times within one letter shape to write in these scripts. This creates an additional burden for the left-handed writer as well.

One standard print font is recommended across Australia for consistency and to reduce materials production costs. There are currently seven different foundation fonts in use across Australia. The style using leads and tails has recently been removed from the UK syllabus and should be avoided in Australia for all children under 8 years of age.

There needs to be equality in the appreciation of the specific needs of the left-handed child and the understanding of the handwriting technique that a left-handed child requires to produce clear, legible handwriting. Learning the basic constructs to lettering early, and correctly for the handedness of the student, will remove the obstacles to comfortable and legible writing.

Teaching Left-Handers to Write

The basic elements for legible and comfortable left-handed writing we teach are:

- **Posture**
  Sitting upright in a relaxed and supported posture is required for concentration and movement. The writer should sit squarely to the desk.
- **Page Position**
  The page should be positioned centrally in front of the writer. The page should be rotated clockwise by 15-20 degrees to facilitate a relaxed writing position with visibility of the text that has just been written. Some left-handers will benefit from the use of a sloped writing surface, being either the desk surface or a sloped writing board. Allowing the page to remain vertical or with an anticlockwise slant will facilitate the inverted writing position.
- **Arm & Hand Position**
  The arm should lightly rest on the desk with the wrist straight but relaxed.

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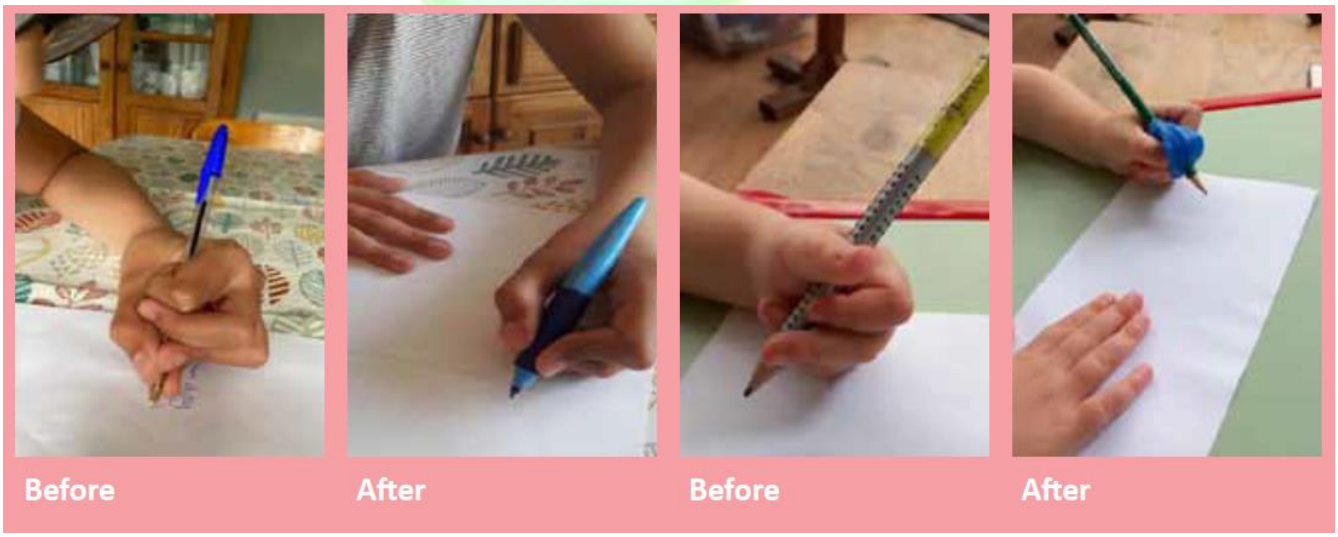
- **Pencil Grip**
  The dynamic tripod grip is highly recommended for all left-handers for greater pencil control while pushing the pencil across the page in the writing action. This should be a relaxed grip exerting sufficient pressure through the digits only to prevent the pencil slipping in the fingers. Textured pencil barrels and/or pencil grips can reinforce the correct relaxed grip for many students and build confidence.
- **Letter Formation**
  Left-handers use the same muscles in writing as do right-handers, but in a different order that is not intuitive. The pencil is pushed across the page making letter formation difficult in some circumstances. The letter 'O' will be printed anticlockwise, the natural movement for the left-hander. Letters with horizontal line forms ('A', 'E', 'F', 'T', etc) should be formed by pulling the pencil from right to left. All of these techniques facilitate greater comfort and consistency and have been shown not to slow down writing speeds or interfere with cursive styles later in their education.
- **Word Spacing**
  Right-handers are taught to place a finger space between words to create consistent and correct spacing. Left-handers are unable to do this when writing from the left side of the page. Left-handers are taught to imagine a capital 'O' in the space instead.
- **Practice**
  Each of these different techniques will lead to comfortable and legible lettering and writing with practice every day, either in class or in the home and social settings.

Correct teaching of left-handed children in lettering and writing will reduce the need for the use of specialised tools and a reliance on those tools.

Correct teaching of left-handed children early in their education will reduce the need for remedial programs and the referrals to occupational therapists. Teachers and students can therefore focus on the content of their learning. Correct teaching of all children starts before they enter the classroom. The importance of this in early childhood education can not be underestimated.



Examples of technique corrections recently completed

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4. Classroom tools to assist left-handed students

While most challenges in the education of left-handed students can be addressed with the use of technique and application of knowledge, educators should ensure that the correct tools and equipment are also available should they be required.

Amanda Keller, a well-known Australian television and radio personality, stated live on air:

"I'm not very good at craft because I am left-handed."[53]

She has previously acknowledged that left-handed tools were not available while she was growing up. Perhaps her skills and interests would be different today if she was given those tools and opportunities?

The following recommendations are generic in nature and in detail. Specific brands and suppliers are not referenced here as it is the characteristics of the product groups that are most important. Many are available in mainstream department stores, office supplies and stationery stores, while others may be found through specialty suppliers.

Scissors

Poor cutting provides poor quality work. The quality of arts and crafts is important to the motivation and self-esteem of the young child. This is one reason that artworks are hung in classrooms. The quality of the work is directly related to the tools and techniques used. The technique of cutting develops as we mature and is used in many other applications in adult life including trades, arts and crafts, gardening and more.

The majority of scissors available are made for right-handed use only. Left-handed scissors are mechanically different. The result is that scissors in the wrong hand do not work.

The top blade of scissors must be on the outside of the centre line of the body when held in the desired hand. This is for two main reasons:

1. The natural action is to push the handle with the radial side of the thumb and to pull with the fingers in the lower handle. This action causes the forces to work through the pivot screw and make the blade edges scrape against each other to make the cut. Using scissors in the incorrect hand reverses those forces and separates the blades causing the paper to fold or macerate. The alternative is to use an unnatural action of pull with the thumb and push with the fingers to make them work, an action that is very tiring and may lead to injury.
2. With the top blade on the outside, the cutting line is always visible which facilitates accuracy of cutting. Using the wrong scissors forces the user to look over the top of the blade to see the cutting line, causing distortion of the view and a twisting action in cutting.

Scissors that are "suitable for right- or left-handed use" are a fallacy and should not be sold. They are simply right-handed scissors that are comfortable when held in the left hand. They still do not work properly for left-handers as the blades are set for right-handed use causing the same problems as above despite feeling comfortable.

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There are some who subscribe to the belief that turning a pair of scissors upside down will change them to the other hand. This is false as the blades remain at the incorrect orientation and the handles are now reversed, making them even more uncomfortable.

Left-handed scissors must be available to all left-handed students at all early learning centres and primary schools across Australia.

Left-handed Scissors

Right-handed Scissors

(Note the different blade positions)

Writing

As discussed previously, comfortable and legible writing is important to the overall education of every student, left-handed or right-handed. While many students will accept and implement the techniques taught, there will always be some who will require additional support.

Specific resource materials are available to assist left-handed students to learn pencil control and letter formation in the manner discussed earlier. Skills development books and practice mats are helpful tools to use in the classroom and at home.

The dynamic tripod grip can be facilitated early through the use of triangular pencils for colouring and for writing. Some are also available with a textured barrel to reassure the user that the pencil will not slip during use. We recommend the use of the thicker barrel pencils for younger children as they learn pencil control as it prevents the squeezing action seen with standard thin pencils.

Pencil grips of various shapes and materials are widely available to teach, support and correct the dynamic tripod grip in children of all ages. These fit onto standard pencils and pens and reassure the user to use a gentler grip on the pencil. Some have pockets to fit the thumb and forefinger into so that control and muscle memory is built for the correct grip.

Pencil Sharpeners

A standard pencil sharpener has the user hold the sharpener in the left hand and turn the pencil with the right hand in a clockwise motion. This natural motion of supination or external rotation makes the task efficient and comfortable.

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For a left-hander, this action is reversed, with the right hand holding the sharpener and the left hand turning the pencil in an anticlockwise direction. The blade in the sharpener needs to be reversed for left-handed use.

An alternative is for classrooms to be equipped with ergonomic electric sharpeners that are available for all students to use. Manual desk-mounted sharpeners tend to still have bias to use in one hand only.

Rulers

When drawing lines with a pencil and ruler, the user usually starts at zero and drags the pencil to the desired measured mark. A left-hander will need to push the pencil along the same line, resulting in inconsistent line work, inaccurate measurement and sometimes having the pencil dig in and tear the page.

A ruler marked with zero beginning at the right end of the ruler can resolve these issues and may also assist with the observation and calculation of measurements.

Books & Folders

The presence of binding spines and rings in notebooks and folders can interfere with the left-handed writer's ability to write close to the left margin on a page. Lecture pads are available with the spine on the right or at the top of the page to remove this obstacle to comfortable writing.

Computing

A left-hander will usually use a computer mouse in the left hand and position it to the left of the keyboard. Mouses used with Apple Mac computers are symmetrical and have only one button to click, making them very useable by left-handed operators. All personal computers use a mouse with two or more buttons that are positioned for right-handed use, even if the design is symmetrical. Moving this mouse to the left of the keyboard does not change the order of buttons and therefore may impede accurate work.

Left-handed users need to change the primary button location to 'left' in the operating system. The settings will need to be changed back for the next right-handed user. This can interrupt the flow of classes if changes are required each time.

An alternative is to use an ergonomic left-handed mouse that simply plugs into a USB port and can be immediately and correctly used by the left-hander.

Computer users who perform large volumes of data entry or coding may benefit from the use of a PC keyboard that has the number and directional keys located to the left of the QWERTY component of the keyboard. The use of the preferred left hand in this case will reduce fatigue and the risk of repetition injury.

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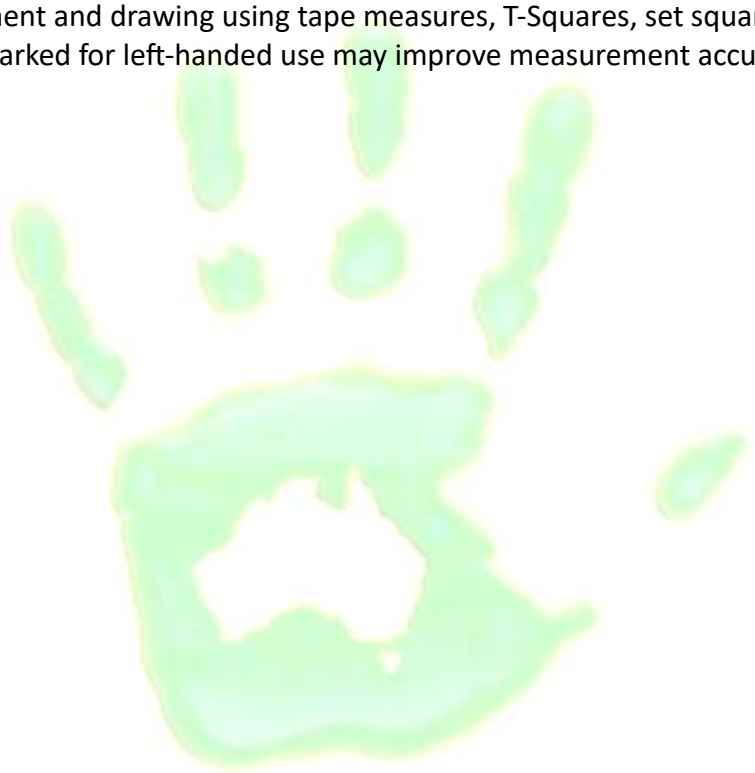
Tools and Equipment

Secondary school classes requiring any form of practical participation need to consider the needs of the left-handed student:

- The Science Lab should consider how apparatus and experiments are prepared for the left-handed student. The location of gas outlets for Bunsen burners should be considered to prevent entanglement and accidents. Measuring equipment should have markings that are easily read by a left-handed operator for accuracy and safety.
- Food Preparation classes should consider the availability of left-handed kitchen utensils including can openers, peelers, knives, spatulas and the like.
- Hospitality classes should have left-handed corkscrews available to their left-handed students.
- Extreme care needs to be taken in woodworking and metalworking classes as most powered tools are available in a right-handed format only. This presents a significant safety risk for the left-handed student.
- Measurement and drawing using tape measures, T-Squares, set squares and rulers that are marked for left-handed use may improve measurement accuracy and line work.



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Conclusion

Left-handedness is natural.

Left-handed children must be supported in their learning from an early age. This begins with the preparation of teachers and early learning workers to be knowledgeable and skilled in the education of these children.

The teaching of these students may require slight modifications to the teaching of right-handed students which are not significant but will attain a significant difference in results.

Behaviours learned early will carry through remainder of education and into adulthood.

There needs to be equality in the importance given to providing such guidance (not put in a sub-section or as NON statutory guidance) and equality in importance of training both in the Initial Teacher Training and Continuing Professional Development. In the past, the education system was repressive for left-handers. Currently, it is generally passive but now it needs to be pro-active. The passive situation is NOT the fault of the teachers. Dealing with such topics as handedness and handwriting for left-handed children is not currently part of Initial Teacher Training.

We know that Education around the world wants to improve the ways in which our children are taught. Many are waiting for another country to introduce the change before they act themselves. This is Australia's chance to be the world leader! What is decided now can positively affect the lives of millions of left-handed children around the world.

It is a fundamental right for left-handed students to be given specific teaching for their needs.

This is a matter of equality and outcomes.

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The Author:

Steve McGuirk and his wife, Annmaree, started their online business in 2003 but it soon became obvious that there was little information available and even less support for left-handers. They created Lefty's Resource Centre to provide free general information to help parents and teachers as well as encouraging young lefties that Being Left Is Alright.
Steve is also a Founding Member of L.E.F.T.-I.N., the Left-handers Education Forum and Training International Network, a global initiative to improve the education of left-handed children.
Steve has presented at education seminars and has performed over 100 interviews on radio, television and print media.
Find more information at www.leftys.com.au

Lefty's®
Being Left Is Alright!
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We are a global interest group formed in 2021 with the aim to improve the information and education available to the educators of left-handed children around the world.
We plan to achieve this through:

- Surveys of schools and other education institutions to understand the current opportunities and obstacles in educating left-handed children
- Creating a voice for the development of education policies around the world that will assist left-handed children and their learning
- Developing and promoting resources to assist tertiary educators and their students' develop classroom skills for teaching left-handed children
- Ensuring appropriate left-handed methods and tools are available to every left-handed child around the world
- Exploring research into handedness in the education setting
- Promoting news items in the left-handed world

Well over 10% of the world's children are left-handed. We must ensure they are not disadvantaged in their education and life skills development because their teacher didn't understand.

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Contributors:

Sue Smits is a UK specialist handwriting consultant and adviser with over 18 years of experience teaching handwriting to tens of thousands of children in their primary and secondary schools. She is the visiting lecturer to Worcester University and the University of East London to teach handwriting to PGCE trainee teachers and the founder of Morrells Handwriting.

Mark Stewart, and his wife Heather launched "Left n Write" in 1997. He is the co-author of the "Left Hand Writing Skills" and "So You Think They're Left-Handed?" books, as well as designing other left-handed resources.
He has delivered training to school and Early Years settings for over 25 years and his training guidelines have been endorsed by the UK Department for Education and Skills and were incorporated into The National Literacy Strategy (UK).
Mark is also a Founding Member of L.E.F.T.-I.N., the Left-handers Education Forum and Training International Network, a global initiative to improve the education of left-handed children.

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