



The Learning Styles Interactive Diagnostic Screening Handbook

This programme is designed as a practical tool for learners and their teachers. It is based on a new understanding of the relationship between cognitive styles and the choice of learning strategies in an educational context. It is built on the twin principles that learning performance can be transformed by:

- a better self awareness of your strengths and weaknesses
- building on your strengths

Unlike almost all other learning style inventories, accuracy does not depend on self awareness. The programme aims to facilitate improvement in learning success, rather than label the learner.

Dr Ross Cooper

The Learning Styles Interactive Diagnostic Screening was chosen by the lead college in the Inclusive Learning Quality Initiative with responsibility for “understanding the individual learning process” (1997-)

The Learning Styles Interactive Diagnostic Screening Handbook

Version 5

April, 2004

This programme has changed lives.

"According to the questionnaires, all students found the interactive programme "really useful",...and felt (the course) had altered the way they learn." Final evaluation report of Learning Skills Project, Margate Adult Education Centre, Kent Adult Education, Nov. 1997-February 1998.

"I can't believe you know so much about me from so little! I'd have taken it more seriously if I'd known!" 17 year old student on a BTEC National Pop Music course.

"It's brilliant, it's so great that we can just go and find this out." 30 year old student on a basic literacy class.

"I don't know how it knew that I used to have these difficulties. It's reminded me of what I've overcome, and how I did it." 40 year old teacher.

"You've just said what I've been trying to explain all my life." 18 year old dyslexic on a BTEC National Science course in response to a discussion about the feedback.

"I felt so empowered I went to enrol on a painting class, which is something I've always wanted to do, but never felt that I could." 35 year old student taking GCSE English.

"I find that the vast majority of students get very excited by the accuracy of the printout." Head of Sixth Form, July 2002.

**The purpose is not to predict, but to change.
We can all be effective learners.**

The Main Benefits of Using this Programme 4

“Learners who prefer to think in images need to “see” what something means to internalise their understanding...this knowledge alone justifies using the programme with all learners.”

Introducing the Screening 6

“Many learners have benefited from the programme without any formal introduction to it, but for many others, particularly the most vulnerable, the process of introduction is essential”

Supporting the Screening Process 7

“These results are absolutely crucial to the accuracy of the feedback, and it is important that they accurately reflect what the learner has actually done.”

Working with the Programme:3 levels of intensity 8

Interpreting the Feedback 9

“If the input was accurate, the feedback is not arbitrary.... if any of the feedback appears to be inaccurate, there is a reason for the difference between the learners experience and the feedback.”

Teaching Response 13

“Once students start to believe in themselves as successful learners, there will be no stopping them!”

Dyslexia 15

“...those who have been taught to rely on step-by step methods inappropriately are the ones most unlikely to have compensated for their weaknesses, and are most likely to need significant levels of support. “

Key Differences in Thinking Styles 17

“As most learners can think both visually and verbally, they can begin to acquire the advantages of both by consciously selecting them to suit their purposes.”

Appendix - Tracking Student Results 21

The Main Benefits of Using this Programme

1. Understanding that visual thinkers need to “see” what something means to internalise that meaning and remember it effectively.

Learners who prefer to think in images (approximately 63% of all learners) need to “see” what something means to internalise their understanding. This is not generally known by teachers or learners. Almost all visual thinkers can understand a verbal explanation, but unless they convert it to a meaningful visual image, the understanding is likely to evaporate over a few days. Knowing this can be a powerful tool. It has prompted more learners to approach me saying that it has changed their lives than anything else in my teaching experience. In my view, this knowledge alone justifies using the programme with all learners.

2. Identifying learning strengths and weaknesses.

Many learners are unaware of their real strengths and weaknesses. My research indicates that successful learners use their strengths effectively, and their range of learning skills appropriately. In contrast, unsuccessful learners have learnt to rely on their weaknesses with devastating results. It follows that if you raise awareness about strengths and weaknesses, you can rapidly improve both learning and self-esteem.

All learners can benefit from a more explicit understanding of their strengths and weaknesses and how to apply them more effectively. This “toolkit” approach to learning allows learners to take control of the learning process. Even very successful learners can tune their learning strategies to greater advantage.

3. Identifying learners at risk.

My research has indicated that learners are most likely to drop out or fail courses if they have learnt to rely on their weaknesses rather than their strengths. Learners with a strong preference for thinking visually, but who attempt to process information sequentially, even when they have difficulties with sequential processes, do particularly badly (75% drop out or fail). It is particularly important that these learners are identified and helped to become aware of their strengths and how to use them. This can radically change their outcomes.

4. Help in designing effective additional learning support programmes.

Understanding the strengths and weaknesses of learners, and how they learn is particularly important when designing effective additional learning support programmes for individual learners. It can help to provide the support that

bridges the gap between how a learner learns and how they are being taught, and lead to effective independent learning.

5. Interpreting learning performances more accurately.

Learning performances vary enormously from individual to individual, but interpreting them accurately depends on understanding the causes of the learning performance. We have found that apparent difficulties such as challenging behaviour, meeting deadlines, poor timekeeping, giving up, and poor writing skills can become more transparent and manageable if learning styles are identified and understood.

6. Help with creating a match between how learners learn and the learning environment (inclusive learning).

If we don't know how a learner learns, we cannot know how best to teach.

Both learners and teachers can benefit enormously if it is understood why some teaching and learning environments are difficult, or easy for individuals. Learners can begin to be selective, make demands, and recognise that they can be more effective learners; that previous failures are not necessarily due to their own incapacities. Similarly, teachers can begin to use teaching styles and strategies more strategically to ensure effective learning. Once learning styles are recognised and understood, teachers can reflect on difficulties learners appear to be having and use their knowledge and understanding to become more effective teachers.

We made a deliberate choice, when designing this programme, to approach the "mean" from the "extremes", rather than consider "extremes" to be in some way uniquely different from other learners. In fact, our work can demonstrate that learners on the periphery of groups (whether failing or succeeding) always have more in common with some of the "average" members of the learning group than with others thought to be "extreme". The learning styles of the "average" members of a learning group are always characterised by diversity. Consequently, teaching "to the mean" is always inefficient.

Introducing the Screening

The feedback from colleges around the country has clearly indicated that the method of introducing the screening to learners can be crucial to its success. Many learners have benefited from the programme without any formal introduction to it, but for many others, particularly the most vulnerable, the process of introduction is essential, and needs to include the following elements:

- there are no wrong answers
- the screening is designed to help the learner, not assess them
- many learners find learning difficult when they are taught in ways which do not suit them
- a “learning difficulty” is a “teaching difficulty”.
- the purpose of the screening is to empower the learner to learn more effectively, and to help teachers to teach in ways that suit more learners
- the screening is only useful if the answers given accurately represent what the learner did during the process
- trying to guess the “correct” answer is entirely pointless
- the feedback is designed to be a starting point for reflection and discussion

The programme is designed to be used by a wide range of learners. The tone is intended to fall somewhere between adventure games and a magazine quiz. It is deceptively simple, but powerful. Without an introduction to the programme, we have heard that some students may find the tone patronising, or too difficult. It is helpful if learners can be encouraged to accept the programme for what it can do for them, rather than expect a different tone or format.

We have found that the screening works best when learners come to it without too many expectations. It is not advisable to explain about verbal and visual thought, or sequential and holistic understanding before the learners do the program. Thinking about what they do (or even worse what they “should” do) changes their behaviour. For the same reasons, we have restricted the tasks to as few as possible. In contrast, questionnaire based systems often have many self-cancelling questions in an attempt to increase their reliability. This will increase the reliability of finding out what the learner **thinks** that they do, rather than what they actually do. We have found, when using our program, that doing one task effects how the next is done and so distorts the results rather than increases accuracy and reliability. However, the main advantage of this programme over questionnaire systems is that it does not rely on self-awareness to the extent that questionnaires do. Consequently, we find that the programme can be as accurate (and particularly useful) with students who are confused about their learning styles, as with those with great self-awareness.

Supporting the Screening Process

Direct Support

Some learners may require direct support in using the programme. For example, those who:

- are unfamiliar with using computers
- have difficulty reading the text on the VDU
- have difficulty using a mouse

Someone else can read the text and operate the mouse for the learner. However, this takes additional time. As some of the recommendations for additional diagnostic assessment are based on the time taken to respond to questions, this will require modifying the feedback.

Deciding between Visual and Verbal thinking

In some cases, learners have difficulty deciding whether they are using visual thought, or verbal thought. It is useful to know that:

- If they can't decide, it is usually not very significant (they can use both).
- Trying to do it without thinking visually, and then without thinking verbally can give a clearer indication about which is the most difficult. The program asks them to do this.
- Visual thinking is not the same as, for example, picturing being on an island. Visual thinking is the visual process which arrives at solutions to the problem. It may involve visualising doing things which gives rise to "seeing" the solutions before they have been named.
- A very small proportion of learners don't experience thinking as a visual or a verbal experience. They arrive at conclusions while only experiencing feelings. This is normally a product of thinking visually so quickly that they are not conscious of "seeing" anything.

The "Odd-one-out" Puzzle

When doing the "odd-ones-out", learners sometimes confuse what we mean by "started" and "what worked".

- "Started" means the point of beginning to look for the odd-one out, rather than merely scanning the page to identify the puzzle they need to consider.
- "What worked" means how they actually recognised the "odd-one out", not how they checked to make sure they were correct.
- It makes little difference if they have difficulty finding it, or fail to find it. The most significant factor is how they start each one.
- These results are absolutely crucial to the accuracy of the feedback, and it is important that they accurately reflect what the learner has actually done.

Working with the Programme: 3 levels of intensity

1) High intensity

- students participate in the screening process on a 1:1

- a tutor observes the process and provides appropriate support
- The observation process informs the interpretation of the feedback
- The feedback is discussed with the student and this informs their learning plan
- Students thought to be “at risk” are referred for additional diagnostic assessments as appropriate
- Results of the feedback are tested through a formative assessment process, such as an “induction” assignment
- Results are collated and inform delivery and assessment
- Teachers discuss learning performance and strategies in the light of the feedback
- The student has an opportunity to discuss reflections on what they have learnt about their learning at a later date
- Achievement is monitored against learning styles

2) Medium intensity

- Students are expected to participate in the screening process and save the feedback
- Results of the screening are collated and inform delivery and assessment
- Feedback results are discussed when the student or teachers feel it may be beneficial
- Feedback results inform referral for additional support
- Achievement is monitored against learning styles

3) Low intensity

- Students are offered the opportunity to participate in the screening
- Low achievers are encouraged to participate
- Students have the opportunity to discuss the feedback

Interpreting the Feedback

It is important in all cases to check whether:

- the answers given accurately reflect what the learner did during the process
- the feedback appears to be accurate to the student

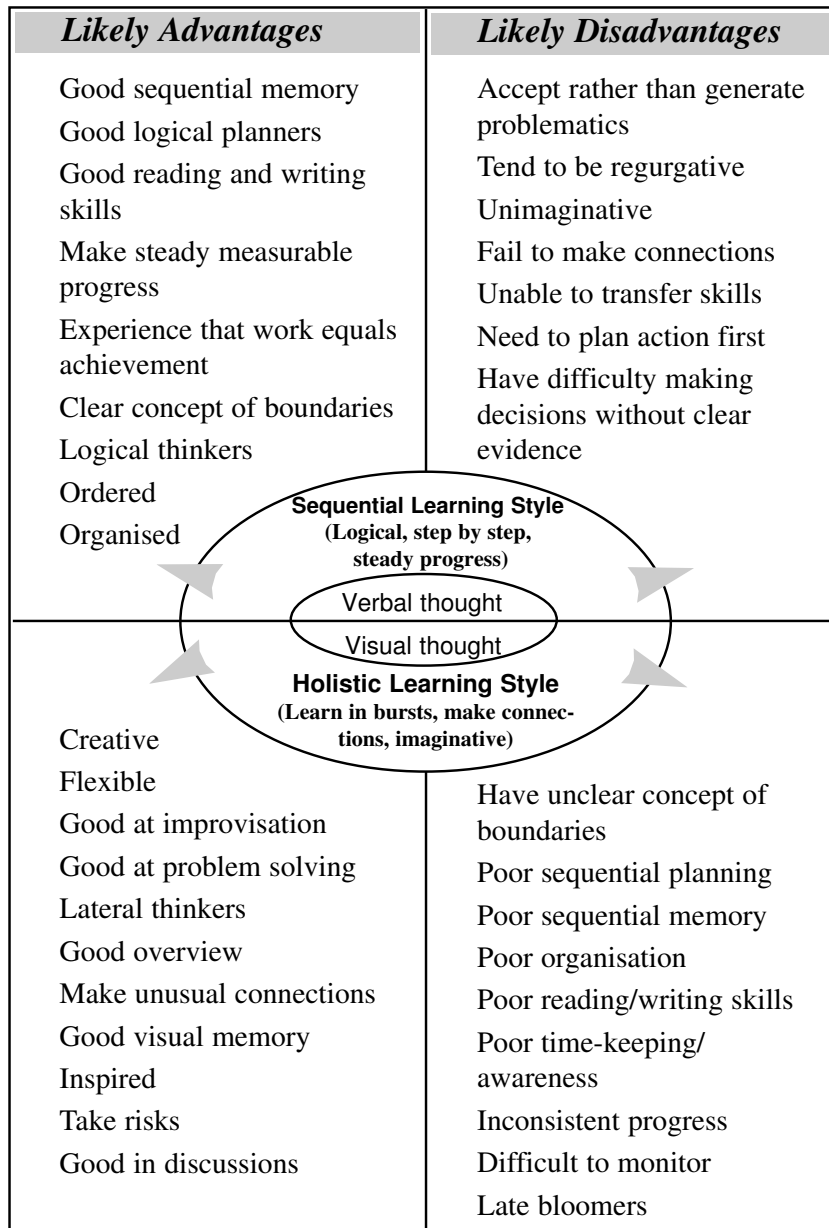
If you are present, you can see how the learner approaches the tasks and use this information to help interpret the feedback and inform your discussions with the learner.

If the input was accurate, the feedback is NOT arbitrary. It may not appear to be accurate in all cases. However, **if any of the feedback appears to be incorrect, there is a reason for the difference between the learner's experience and the feedback.** For example, when the likely weaknesses cited by the feedback are not in evidence for a particular learner, they will be using their learning strategies flexibly, or appropriately, and in this way compensating for the particular weaknesses effectively. Precisely how they are doing so will emerge during the discussions about their learning. Similarly, if the likely strengths cited in the feedback are not in evidence, the learner will not be using their strengths effectively, appropriately, or adequately compensating for related weaknesses. In many cases, they may be insufficiently aware of their strengths and weaknesses to compensate effectively for their weaknesses.

The purpose of the screening is to give the learner the vocabulary to understand these processes, and the sense that they can control them.

The framework provided below can be used as a tool in the discussions. It is not intended to identify "two" learning styles. Learning performances are underpinned by real differences in the way individuals think. These cognitive styles have been schematised into a relatively simple framework for interpreting learning performances, but individual learning styles are a product of complex patterns of different strengths, weaknesses, and methods of compensating for weaknesses. To reflect this, there are over 10,000 variations of the feedback. The main strength of this programme is to provide a simple framework that makes complex and unique differences transparent. It is this which makes it possible for learners to make real changes.

From patterns of thinking to learning styles



- If a learner has a strong preference for thinking visually, and processing information holistically, the likely advantages and disadvantages are outlined in the bottom half of the diagram. These are likely, but not necessary consequences. If they differ for the learner, there will be a reason (or reasons) for the differences.
- If a learner has a strong preference for thinking verbally, and processing information sequentially, the likely advantages and disadvantages are

outlined in the top half of the diagram. These are likely, but not necessary consequences. If they differ for the learner, there will be a reason (or reasons) for the differences.

- If the learner has a strong preference for thinking visually, but attempts to process information sequentially, they will tend to lose some of the advantages of visual thinkers, and pick up some of the disadvantages of verbal thinkers, particularly if they experience difficulties with sequencing. (e.g. they will lose many of the advantages in the left hand column, and increase the disadvantages in the right hand column). In contrast, these learners are often extremely competent in real-life environments, and tend to do extremely well in work experience placements.
- If the learner has a strong preference for thinking verbally, but attempts to process information holistically, they will tend to lose some of the advantages of verbal thinkers, and pick up some of the disadvantages of visual thinkers, particularly if they experience difficulties with sequencing. (e.g. they will lose many of the advantages in the left hand column, and increase the disadvantages in the right hand column).
- Some learners have learnt the habit of always using holistic processes for a few seconds first and then moving onto sequential processes if this reaps no immediate reward. This can work well in many learning situations, but learning is even more effective if the learner selects appropriately to each situation rather than using a rather crude habit. In some cases, this appears on the screening as having a preference for verbal thinking, while attempting to process information holistically. This is because, in the computer interaction, only holistic processing of the odd-one-out occurred. They can usually be identified by the fact that they have no perceived difficulties with sequencing. In most cases, the programme will identify this, but in some cases, it will only emerge during discussions with the learner.
- In some cases, these patterns will be attempts to compensate for weaknesses. In others, they will be patterns of learning that they have been taught, or merely products of confusion or lack of awareness.
- If the learner uses holistic and sequential processes appropriately, they will usually lose some of the disadvantages of their visual or verbal thinking and pick up some of the advantages of the other thinking process (e.g. they will lose many of the disadvantages in the right hand column, and increase the advantages in the left hand column). Again, if the learner does not experience this, there will be a reason for it.

The purpose is to make these processes explicit and allow the learner to make conscious choices about how they think and learn, and test these out in real learning, or learning performance, situations. In other words the purpose is empowerment. Most learners can think visually, verbally, and understand information both holistically and sequentially. Achieving the advantages of both thinking styles while losing the disadvantages of both would be ideal. Failing this, achieving the advantages of preferred ways of thinking and compensating for the disadvantages more effectively is highly desirable.

A Checklist for Making the feedback work with, not against, the student.

1. Check with the student that they understood the process and that the input was accurate
2. Check whether the student feels that the feedback is accurate or not
3. Reassure them that they can disagree with the feedback, it can be wrong
4. Remember that the student may understand a great deal about their own learning and are usually right
5. Remember that they may sometimes disagree with correct feedback
6. Remember that they may sometimes agree with incorrect feedback
7. Get them to highlight the bits they disagree with
8. Get them to highlight what they feel are the most accurate bits
9. If they are distressed by the feedback, reassure them and remind them that the only point of the feedback is to help them understand their learning experience, not to try to label them
10. If they feel angry about it, try to identify any misunderstandings, or suggest discussing it in a couple of days time
11. Check whether the feedback might have been more accurate earlier in their lives, and if so, ask how they managed to change
12. Discuss their recent experiences of learning to see if this throws light on their, and your, experience of their strengths and weaknesses
13. Move them from reacting to the feedback, to questioning and understanding their learning experience
14. Encourage them to decide what works best for them
15. Where possible, test this against actual experience
16. Help them to see thinking strategies as tools with specific strengths and weaknesses (particularly visual and verbal thinking)
17. Stress that thinking can be much more flexible if you begin your understanding in your preferred mode (e.g. holistic or step by step) before moving into the less preferred. That way, for example, a step by step approach can lead to a full understanding before becoming creative with the process; or a holistic understanding can then inform a more detailed search for information to evaluate (or deepen) the understanding.

Teaching Response

Teaching response can be on the level of the individual, or the group.

The Individual Learner

All learners can benefit from “tuning up” their learning strategies to match with the task, and/or suit the task. However, it is particularly effective to use the screening feedback with individual learners who are struggling. It can help you gain insights into the learning experience of the individual, and why they are finding this specific learning environment difficult. Once you have identified the difficulty, focus in on what would make the most difference for this learner. This is often something as simple as helping them to gain a visual overview of what they are expected to learn, or to recontextualise the task to make it more meaningful. Once you have identified what could make a difference, select those changes that are easiest for you to make, and try them first. In my experience, small changes often make a dramatic difference. If this is achieved you will notice that a number of other individuals who were doing OK previously suddenly improve their achievement as well. This is because they could manage without this new change, but can do much better with it.

Once you have experienced that a struggling student can be successful through small changes to your teaching strategies, you will find it much easier to believe that all students can be successful. This confidence will impact positively on the learning of all your students.

Teaching Groups

Once you get a sense of the balance of learning styles within your groups of students, you may become hungry for help to adapt your teaching strategies and the learning environment to suit their needs better. You will find a list of teaching strategies on the website (www.outsider.co-uk.com/toolkit.htm) grouped against learning styles. Select those you feel comfortable with.

In my experience, all teachers I have worked with have found that developing a learning styles approach has:

- Improved retention
- Increased achievement
- Made the teaching experience more enjoyable
- Saved teachers time over the first year
- Improved independent learning

Once students start to believe in themselves as successful learners, there will be no stopping them! Although you might find that they begin to make greater demands on teachers and the learning environment. Helping them to be assertive in getting their needs met without disrupting the learning experience may become important. Fostering their independence as learners is a crucial skill.

This is a schematic of different learning and teaching strategies related to visual sequential at one extreme, and visual holistic at the other.

	Respond well to:	Respond poorly to:
Verbal Sequential	<ul style="list-style-type: none"> • Factual information • Organised/structured lessons • Step by step learning • Reading • Logical explanations • Abstractions • Concentrating on discrete bits of information • Arriving at conclusions by sifting through the evidence/data • Applying rules • Timed pencil and paper tests • True or false questions • Multiple choice exams 	<ul style="list-style-type: none"> • Not understanding vocabulary • Personal information in a learning context • Analogies/metaphors • A chaotic environment • Problem solving when there is no "correct" answer /open ended questions • Multi-tasking • Learning by doing • Improvisation and creative activities
Visual Holistic	<ul style="list-style-type: none"> • Visual Overviews & mind maps • Contextual information • Improvisation • Creative activities • Humour anecdotes & personal information • Problem solving when there is no "correct" answer ("What if...?") • Seeing what something means • Seeing examples • Discussions before reading • Multi-tasking • Learning by doing • Following a purpose • Demonstrations • Working with others • Open ended questions • Plenty of breaks • Interactive learning • Using colours • Analogies/metaphors 	<ul style="list-style-type: none"> • Verbal instructions or information • Note-taking • Having no sense of purpose or overview • Step by step instruction • A list of facts • Timed pencil and paper tests • Applying rules • Few changes in tasks • Relying on memory • Persevering • Concentrating on discrete bits of information • Arriving at conclusions by sifting through the evidence/data

The more flexible the learner, the easier they find it to learn by either route. The more inflexible (and extreme the preference) the more necessary it is for them to learn in a way that suits them.

Dyslexia

Using the programme to screen for dyslexia.

The programme was not intended to diagnose dyslexia, but it is an effective screening in comparison with most questionnaire checklists. This is because it does not simply rely on a questionnaire. We do use some questions at the end of the programme which were designed to identify dyslexics at American universities. We have selected the best discriminators from the original research, and weighted the scores to match. It was found in the original research that the time taken to decide on the answer was more significant than the answer itself. This highlights both a strength and weakness of this programme. Unlike paper-based methods, we can time the response rate. (We can also test the ability of the learner to remember the correct date rather than rely on self-assessment). However, different learners may have different reasons for a slow rate. These include:

- taking breaks while doing the programme
- chatting with friends
- being interrupted
- needing someone to read the text or use the mouse for them
- difficulties using the mouse
- unfamiliarity with computers

In these circumstances some misdiagnosis of difficulties with sequencing is probable and related recommendations need to be modified. There are also other reasons for learners to self-assess having these difficulties. These are:

- low self-esteem
- low self-confidence
- being self-deprecating

Taking these limitations into account, we found that 90% of learners who:

- have a clear preference for thinking visually,
- attempt both odd-one-outs sequentially
- answered a significant number of the screening questions positively

were later found to be dyslexic.

80% of learners who:

- have a clear preference for thinking verbally
- attempt both odd-one-outs holistically
- answered a significant number of the screening questions positively

were later found to be dyslexic.

The success rate as a screening process diminishes with other patterns. Extremely interestingly we found that the majority of flexible learners with a high dyslexia screening score could be shown to have compensated effectively for a range of earlier specific learning difficulties.

It is very useful to explore with them how they have done so.

Learning Styles and Dyslexic Learners

It is often assumed that there is such a thing as a “dyslexic learning style”. This is generally described as “right-brained”; that is visual-spatial, creative, and holistic strengths, while having difficulties with sequencing, language and memory. Our research has found interesting variations in this generalisation.

Most dyslexics are visual thinkers who prefer to use holistic processes and struggle with language and sequential based processes. As we have seen above, those who have been taught to rely on step-by step methods inappropriately are the ones most unlikely to have compensated for their weaknesses, and are most likely to need significant levels of support.

A significant minority have a preference for verbal thinking, but struggle with sequential and language based processes. These learners therefore need to rely on holistic processes to compensate for their difficulties. This sometimes looks like their preferred learning style is the same as the visual holistic dyslexic, but it is for different reasons. We can risk generalising about the dyslexics who have a preference for verbal thinking by indicating that, unlike almost all visual thinking dyslexics, they tend to have good organisational skills (even if this is not apparent in their writing). It is essential that support tutors are aware of these significant differences in learning styles when designing appropriate support.

Key Differences in Thinking Styles

Sequential and Holistic Understanding.

We can make sense of our experience in two distinct ways, holistically or sequentially.

An holistic understanding is where we try to get an overview of our experience and understand how everything interconnects. This is usually achieved by seeing ourselves inside the problem, experience, or situation and focusing on what it means and what we need to do. This often feels intuitive, and meaningful.

A sequential understanding is where we try to understand the logic of the sequence of events. This is usually achieved by an analysis of cause and effect, or the principles involved. The focus here is on an analysis of the detail and how this can lead to a fuller understanding. This often feels unemotional and rational.

Most people can use both methods, but almost everyone has a preference. Those with a preference for holistic understanding start with meaning and then need to check this understanding against the detail. Those with a preference for sequential understanding start with a step by step detailed approach which builds into an understanding, which they need to check against alternative interpretations of the detail. The weakness of both is that the learner may stop within their comfort zone. This can leave those with a preference for holistic understanding with an intuitive explanation, which may not explain all the facts. It can leave those with a preference for sequential understanding with a logical explanation which may be incorrect.

Sequential and Holistic Strategies

Processing information holistically or sequentially leads to fundamental differences in the learning process. The strategies used are also very different. For example, finding a contact lens on the floor can be achieved by scanning the whole floor (holistic), or by checking the floor methodically bit by bit (sequential). The main advantage of the holistic method is speed. The main disadvantage is that if you fail to find it, the time taken is wasted as you are no nearer finding it. The main advantage of the sequential method is its thoroughness. For if the method is used properly, the lens will be found eventually. All the time used provides information that the lens is not where you have looked already, and therefore is not wasted. The main disadvantage with the sequential method here is, that on average, it will take half the time it takes to cover the whole floor thoroughly.

It is therefore logical, all else being equal, to use holistic methods when the task would take too long to do systematically (i.e. finding a needle in a haystack), and sequential methods when the task is embedded within a

logical field (i.e. finding a missing file). However, an individual's preferences, strengths and weaknesses mean that all else is not equal. For example, many learners with a strong preference for holistic processing may have difficulties with sequential processes, and may lose track of where they are in the sequence or fail to do each step thoroughly enough to be sure that they can eliminate some of the field. Such weaknesses tend to lead to using holistic processes when it may not appear logical to do so. Similarly, some learners have difficulties with holistic processing (sometimes related to visual processing weaknesses) and find too much information confusing. They tend to use sequential processes when it may not appear logical to do so.

There are other more subtle differences between holistic and sequential strategies which are nevertheless extremely significant. In particular, holistic strategies allow the learner to take account of multiple factors and multi-dimensional problems. Sequential strategies work particularly well when dealing with cause and effect or other 2-dimensional problems. For example, solving mathematical problems holistically can usually be experienced by estimating, where the learner gets an overview of the problem by considering its meaning, rather than focus in on the detail and the processes. By contrast, doing it sequentially focuses in on the detail and process. This leads to greater accuracy provided errors are not made (and not noticed).

Although sequential and holistic understandings underpin many real differences in learning performance, the differences become more transparent in most cases when considering the differences between visual and verbal thought. This is not because visual and verbal thought are more fundamental than holistic and sequential understanding, but because they tend to symbolise them. Learners are more aware of the different experiences of visual and verbal thought and can therefore identify more easily with the differences.

Visual and Verbal Thinking

When we think about something, we do not all do it in the same way. Most people can think visually (in images) and verbally (in words). But almost everyone has a preference. The preference can be quite weak, or very strong. Some people only think visually (16%), or only think verbally (8%). Most people swap between these modes of thinking. However, visual and verbal thinking have very different strengths (and therefore weaknesses). They each lend themselves to different kinds of problems, or situations.

STRENGTHS

Visual	Verbal
speed imaginative creative lateral inductive symbolic overview patterns multi-dimensional inter-relationships	ordered analytic critical logical deductive abstract detail elements 2-dimensional cause and effect

Visual thinking

Most people who think visually like to contextualise a problem, imagining themselves inside it to “see” what they need to do. This lends itself to emergency scenarios when you have to think very quickly. It also lends itself to creative projects such as art and design, creative music, sports, dance and engineering when thinking 3-dimensionally is an advantage. It can be very effective when thinking about problems which have lots of different factors that have to be understood as a whole (because they all inter-relate). Visual thinking is often strategic thinking. Visual thinking’s strengths come from being able to “see” everything at once.

Most people who prefer to think visually try to understand the world by how it fits together. They think visually, because this allows them to understand the world holistically. In other words, how they understand predetermines how they prefer to think.

The strength in preference of how they make sense of their experience determines the strength of their thinking preference.

Verbal thinking

Most people think verbally when they want to apply logic to a problem and think about an issue in an explicit and step by step way. This lends itself to anything that requires clear, unemotional thinking. It also lends itself to communicating your ideas through language, or writing, and to activities which require practice, or memory. Language has particular strengths in logical abstract thought. Verbal thinking is particularly good at looking at the detail and examining the wealth of small differences between things. Verbal thinking’s strengths come from being able to think things through in a step by step way.

Most people who prefer to think verbally try to understand the world by how one thing causes another, or how everything occurs chronologically, step by step. They think verbally, because this allows them to understand the world sequentially. In other words, how they understand predetermines how they prefer to think.

The strength in preference of how they make sense of their experience determines the strength of their thinking preference.

Using this knowledge

In the first instance, merely becoming aware that you have significant strengths can give you the confidence to use and develop them more effectively. Secondly, you can use your strengths to compensate for weaknesses rather than merely trying to improve weaknesses. Third, the learner can begin to develop appropriate flexibility. As most learners can think both visually and verbally (despite clear preferences) they can begin to acquire the advantages of both by consciously selecting them, like tools, to suit their purposes.

Learning can be approached holistically or sequentially.

Holistic strategies include:

- Trying to “see” what things mean
- Thinking what it means to you before you start
- Deciding why you are learning this (purpose)
- Reading the summary first
- Making connections to things you already know
- Skimming and scanning to see key points or priorities
- Making mind maps
- Creating meaningful visual models
- Making up analogies/metaphors
- Thinking how you might use the learning

Sequential strategies include:

- Learning first principles
- Following through problems and their solutions
- Testing yourself on questions and answers
- Focusing in on specific parts of the learning in a step by step way
- Ensuring that you understand all the vocabulary
- Identifying the evidence and weighing it up to arrive at conclusions
- Doing background reading
- Planning what you are going to do in what order
- Learning the rules

If you want the strengths of holistic understanding, think visually. If you want the strengths of sequential understanding, think verbally. Experiment, and judge what to do on the results you achieve.

TRACKING STUDENT RESULTS

The new online version incorporates data storage which is organised by a group password. This means, for example, that each class of students can have its own identifying password no matter where in the college (or when) they use the programme. Their data is stored on our server, but can only be accessed by those who know your password.

When you access the data, you get a list of the students in that group which can be converted into the graphic feedback for each student. We have also had a request from one college to convert the scores that represent the preference for visual and verbal thinking to percentages on a spreadsheet. This will then show this precise strength of preference during the screening.

The password can be up to twenty characters long and is not case sensitive.

Before you begin your session with students you can check if the session id you want to use is available (no body else has already used it) by doing a search.