# Copyright Notice



**Course Name:** DACPD92 Supporting Study Skills in Adults with Dyslexia
**Name of Designated Person authorising scanning:** Kathryn Benzine, Head of Training
**Title of source (book or journal):** Supporting Dyslexic Adults in Higher Education and the Workplace

**Chapter or article name:** "Why Can't I Learn? Metacognitive Strategy Instruction" by Geraldine Price

**Page number(s):** 51-58
**Name of Author(s):** Nicola Brunswick (Editor)
**Name of Publisher:** Wiley-Blackwell

Internal use

# 6

# Why Can't I Learn? Metacognitive Strategy Instruction

Geraldine Price, University of Southampton, UK

## Introduction

'My computer's on the blink. I've spent the last few days trying to fix it. I think that it's OK now but it doesn't seem to be working as fast as it was before.'

How many of us have had a problem like this and tried our best to solve it but it has taken a long time and a lot of effort, and in the end we are not totally satisfied with what we have done? Some people seem to do things effortlessly; others work conscientiously yet do not achieve the results they anticipated. Dyslexic students have often commented that, although they have spent a long time doing academic work, the results are disappointing. Perhaps the answer lies in the fact that we are not tackling the problem as an expert would. Learning is a complex process, and one that is vital for almost everything else we do in life. Thus, it is essential that we provide a teaching environment that encourages dyslexic students to learn how to learn.

Many dyslexic students in school and at university say that they spend more time than their friends do when carrying out written tasks. Some university students express frustration and annoyance about completing assignments. For example, Fiona, a second-year archaeology student, who says:

> I get really confused about what I'm expected to do. I was reading the wrong papers so wasted quite a bit of time doing this! Trying to get the right words and sorting out the paragraphs for the structure is what I spend most of my time doing. But when I get the essay back the tutors always say that I've not kept to the point. I wonder why I bother because it takes me so long to get my ideas down on paper.

For such students, the answer has been to provide study skills tuition that focused on time management schedules, speed-reading techniques and learning to keep to a prescribed structure for writing essays, which involves a beginning, a middle and an end. Doubtless, these surface factors are important for dealing with the day-to-day drudgery of school/university work. However, the answer lies at a deeper level involving knowledge of how experts work, and how to adapt to new tasks and challenges. It relates to how the learner is able to respond to new situations, drawing upon a knowledge of what works best in a given

*Supporting Dyslexic Adults in Higher Education and the Workplace*, First Edition. Edited by Nicola Brunswick.

circumstance and making *educated* decisions about which techniques to use to carry out the task. In other words, the learner is operating like an expert. Thus, the learner takes an *active role* in the process. In the words of Harrison (2000 p. 315):

> The self-managing learner is one who is self-aware, capable of exercising choice in relation to needs, of taking an active self-directing role in furthering his or her own learning and development.

This has an impact upon how dyslexic learners are taught. Whilst 'personalised learning' is advocated in the UK Department for Education and Skills Research Report No. 843 (Sebba *et al.* 2007, p. 15), it relies upon the teacher to tailor the teaching to meet the needs of the individual:

> Personalised learning offers a real opportunity for learners to participate fully in their own education and contribute to decisions about the supply and public value of education in general . . . Personalised learning demands teaching and learning strategies that develop the competence and confidence of every learner by actively engaging and stretching them.

The challenge for teachers is to ensure that students maximize their potential. So often teachers will try out something with their students and, if it does not provide the anticipated success, they turn to another method. This 'let's try this to see if it works' does our dyslexic students a disservice. It is vital to adopt a teaching approach that is the most reliable for dyslexic learners. One such approach is cognitive strategy instruction, which helps the learner to understand what skills are needed. It develops an ability to choose the most appropriate strategies to apply in any given learning environment.

The teaching of skills and processes is best done in the context of the curriculum. Using curriculum materials to develop skills ensures that learning has an immediate application. Thus, it becomes real for the student, who can put knowledge and learning into practice. This approach to learning cannot be started too soon. It provides the dyslexic learner with a ring of confidence to try out techniques, to get the job done, and then to reflect and evaluate what worked and what did not in those circumstances so that, when approaching a new situation, a best-fit choice is made based upon reflection and experience. This develops efficiency and effectiveness, which results in good grades for the time and effort put into the work.

Helping students to take control of their learning and to solve problems is life-enhancing. This process is known as metacognition and, as Price and Skinner (2007, p. 19) point out:

> If the student has an understanding of the learning process and can monitor progress throughout, there will be greater efficiency and quality of learning. Metacognitive strategies provide a barometer of success for the student and attempt to change the student from 'passive and anxious' (Brown 1992) to . . . an active learner.

Support for dyslexic students is best placed within a multidimensional teaching and learning environment that is made up of many layers and strands. It is a dynamic environment that incorporates flexibility of response. Thus, the teacher becomes the change agent in the contextualized environment. The learning support specialist makes connections between a learner's responses and the context in which they occur.

This proposed teaching framework hinges upon the teacher's ability to capitalize on individual strengths and weaknesses within the boundaries of a developmental continuum of learning. It encourages the development of learning skills, learner autonomy and the building up of self-esteem (Skidmore 2002).

There are four key elements in the teaching environment: developmental progression of skills, cognitive strategy instruction, apprenticeship modelling and metacognitive awareness (see Figure 6.1).

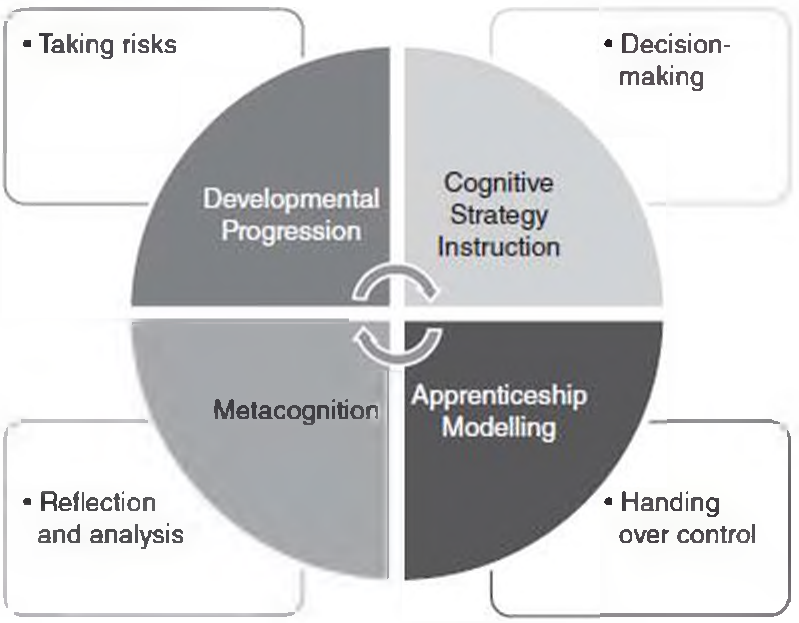


**Figure 6.1** Elements of the teaching framework.

The four main components are the teaching approaches adopted in a cyclical manner and which provide an holistic environment. These instil the main skills that learners need to develop to become independent learners.

## Developmental progression

The learning support specialist has to be aware of the hierarchy of stages of learning. This knowledge will provide a backdrop in which to assess the strengths and weaknesses, and the phase, that individual students have reached. It will afford a global picture of where each student is and what needs to be put in place, enabling the teacher to choose the best starting point, thus personalizing the progression.

## Cognitive Strategy Instruction (CSI)

This approach will activate and enhance the process of metacognition. If we regard education as 'the passport to vocational competence and success' (Haywood 2004, p. 2) then we should use the teaching context to develop strategies that will become an integral part of the student's approach to new situations. CSI offers a thinking-skills framework that can be adapted to lifelong learning. The teacher demonstrates techniques that the individual will use strategically relating to the demands of a given activity. This element of the teaching framework delivers a 'mediated learning experience' (Feuerstein *et al.* 1980). At this stage the teacher takes control of the learning process, using the student's curriculum tasks and resources to bring the cognitive skills to the surface.

## Apprenticeship/Modelling

An apprenticeship model can be compared with the master builders of medieval times who modelled skills to their apprentices. The apprentices were able to practise specific aspects of masonry and had many opportunities to overlearn the skills. This approach to learning was advocated by Vygotsky (1962). Key to Bandura's social cognitive theory, which explains how human nature and actions are guided by society (Bandura 2001), are the skills of self-

regulation and self-efficiency. Zimmerman (2001) demonstrated how these could be achieved by modelling. Self-regulation ensures that learners monitor their own progress by constantly questioning what they are doing and evaluating what they have done. This leads to greater efficiency and ensures that such efficiency is in the hands of the apprentice/learner as part of an active approach to development of skills.

The use of modelling provides a type of collaboration as an effective teaching approach that encompasses partnership. It is set within a positive and secure learning environment, which is a critical factor for teaching vulnerable, dyslexic students.

Collaborative dialogues provide a platform for a developmental, interactive approach to metalinguistic awareness for dyslexic learners of all ages (Glynn, Wearmouth and Berryman 2006; Montgomery and Kahn 2003). Dyslexic students, because of a history of difficulties, are often unaware of language structures. Consequently, it is vital to ensure that teaching support makes linguistic knowledge explicit so that there is a conscious recognition of knowledge of language and linguistic structures such as sentence and paragraph construction, genre, syntax and semantics. In this way, the student becomes aware of his or her own use of language.

Problem-solving and decision-making skills are used to help the students to interact more confidently with abstract language. The teacher models a self-questioning technique to help the student become aware of the hidden language clues by way of collaborative dialogues. Steps to mastery are within a controlled environment to give familiarization, self-monitoring (the internal dialogues), and a deeper knowledge of how to evaluate new and novel tasks. In this way, the student gains confidence through metacognitive realization to work independently. This technique is further explored later in the chapter.

### Metacognition

A teaching and learning environment in which students are challenged and construct knowledge is more supportive for dyslexic learners than one that relies mainly upon the transmission of knowledge. The latter does not develop metacognitive skills that can greatly increase learning potential, particularly for dyslexic learners. Knowing how to do things, what works and what does not work is vital to ensure efficiency and effectiveness. It enables the student to maximize potential and to cut down on fruitless attempts at tasks and written work. Self-reflection and self-analysis are crucial if the student is to take greater control of his or her own learning.

## Operating the Teaching Framework

The starting point of the teaching framework is the adaptation of the dyslexic way of working in relation to the demands of the academic environment. The essence of the 'interactivity' of the model evolves from the combination of the bottom-up and top-down concepts. The starting point, therefore, has to be the dyslexic student's mindset and conceptions of procedures and methods of working. It is a student-led not a teacher-led approach. In this sense it is a bottom-up model that is student-driven. However, the teaching methods employed use explicit modelling to develop metacognition, metalanguage and metaskill performance in an environment that promotes success by scaffolding the learning and breaking skill acquisition into manageable steps. In this way, the teacher talks about the decision-making processes and their manipulation to demonstrate macro-organization (the ability to hold 'the big picture' for planning and organization) and the problem-solving skills that are involved in critical reading, text generation and editing.

Let us see how this operates in one aspect of learning: writing an essay. Writing is the poor relation in terms of research into teaching approaches yet it is the aspect of school and university work that causes the most concern for students. Producing a paragraph or a whole essay is a big challenge for dyslexic writers. It involves many choices that are vital to

communicating ideas to others: choosing the right language, using the correct syntax and grammar, and sequencing ideas, not to mention grouping information into coherent paragraphs. It requires a great deal of multitasking. This puts pressure upon a person's working memory. The greater the working memory efficiency, the smoother and quicker the multitasking operations are. It is, therefore, little wonder that our dyslexic learners need support in the organization and management of this complex process.

## Writing Like an Expert

To be an expert, a toolbox of techniques is needed. Expert writers rely upon a large toolbox to enable them to communicate ideas effortlessly and efficiently. When dealing with a new problem (such as a written task), the expert opens up the toolbox and decides which tools are relevant and appropriate to get the job done. Choosing a technique is a personal decision and is matched to the task demands and the written outcome, such that:

Task demands + choice of technique = personal strategy.

This flexible and dynamic method of working puts the learner in the driving seat. It means that he or she can adapt techniques to meet demands and thus be able to cope with new situations.

Dyslexic students need to be provided with learning environments that give them opportunities not only to learn new techniques but to learn how to make appropriate choices to solve the problem. There are various stages to learning techniques and filling up the student's toolbox. For example, the teacher:

1 explains a new technique – what it is, how it works, when it can be used and why it is useful
2 models the *hidden thinking skills* that experts use to make decisions about the choices
3 provides the student with lots of opportunities to make decisions about choice of technique
4 ensures that the student can justify the choice/decision, thus developing self-monitoring.

This type of study skills support is best done using curriculum tasks. They are real-life problems that the dyslexic learner is experiencing. The skills learned can be applied immediately to solve a pressing problem, such as homework.

Overlaying cognitive strategy instruction on the above procedures relies heavily on bringing the *thinking skills* to the surface. Many teachers find this difficult to start with because, as experts, they do many of the processes subconsciously. However, if dyslexic learners are to understand how experts operate, they need to have the questions and justifications for the decisions made explicit. This goes beyond modelling procedures mechanistically in a 'do this, do that' manner. It involves learning to ask the right questions to unravel the language. This is known as *metacognitive interrogation* of the problem. The inner questions are used to work out the language and at the same time to link the abstract language to an action.

## The 'Language Detective'

Picture this scenario: a student has been given a written task. The first hurdle is working out what exactly the teachers want. For dyslexic students, the language of the task is alien and they need a simple technique that helps them to unpick the language and put it into action. I developed the BUG Method© in 1985 to help dyslexic students to manage their own learning (Price and Maier 2007). BUG stands for:

- **B**ox the action word
- **U**nderline the key (important) words
- **G**lance back.

By asking oneself simple questions, the language of an examination question or a written task can be demystified. So this method provides a platform for the teacher to introduce:

- metacognitive interrogation
- linkages between abstract language and written action
- self-monitoring techniques that develop a reflective and analytical approach.

The key to the success of this technique is that the answer to one question leads on to the next operation. For example, the expert would ask 'What do I have to *do*?' The response might be 'explain'. To help the student work out the key words to underline, the next question would be 'explain *what*?' Of course, those who are grappling with language are never confident that what they have underlined is correct. When learning this new technique, students often underline every word just in case. This is because they are not tuned in to language and do not have the inner voice to help them make decisions about which words to select and which to eliminate. Often these students will overlook simple, short words and lock on to longer words in the belief that size does matter! By putting the 'Glance back' into operation, they can be given questions that will help them to be more discriminating, for example, asking 'Have I missed anything?' 'Would it make a difference to what I have to do if this word stayed in/was left out?' Another bonus to this technique is that it has kinaesthetic features that help prevent the student freezing and being unable to work out difficult and complex language. Having to put a box around some words and to underline others, in addition to the inner prompts, psychologically takes the fear out of 'working out' language. An example of this process in action is provided by Graham.

## Graham

Graham was a typical student who never seemed to answer the question. He was given the following task:

'Make notes for an essay on why it is difficult to reach agreement about elephant conservation.'

Before tuition, Graham underlined the words shown here in bold to reflect his understanding of what he had to do:

'Make notes for an **essay** on why it is difficult to reach agreement **about elephant conservation**.'

Of course, he had made assumptions that would have led to a lot of work but still would have resulted in a poor grade in this instance. The teacher explained why the BUG Method® would save him time and ensure that he did what was asked. His tutor spoke aloud all the questions she would ask to get down to the real task, at the same time boxing and underlining words.

- Question: What do you have *'to do'*?
- Student: Make notes
- Question: Is this different from 'writing an essay'?
- Teaching point: Clarify where to start teaching
- Question: Glance back at the words you have not underlined. Are any of them important/significant? Would any of them make a difference to the information you need?
- Teaching point: Bring thinking/decision-making skills to the surface

These questions were modelled for a dual purpose: first to show Graham how to clarify by interrogating the language of the task, and also as a starting point for teaching. If he does not know the difference between writing an essay and making notes, work would have to be done on this.

The tutor provided Graham with many short exercises to unpick the language of the question without having to carry out the written work, each time making him talk aloud his inner questions and justifying his actions. Many dyslexic learners like the fact that they can explain what they are doing without having to do the written essay! After a time, he was allowed to internalize the questions when they had become an automatic part of his routine. He was, at last, working subconsciously by applying the hidden thinking skills that experts draw upon automatically. When Graham decided that he was an expert, he was able to join a group of other students and demonstrate the technique. He was a more exacting tutor than his own teacher, and would pull up his peers if they were skipping the 'Glance back' part of the procedure, drawing from his own experiences and bitter disappointments.

Of course, dyslexic learners need to be exposed to the most frequently used 'action words' they will encounter in an academic year. Not only do they need to be able to pick out these words quickly (drawing on visual memory) but they also need to link them to a written action. Dyslexia tutors play a vital role in building up these word banks and providing crucial overlearning to secure word and meaning in memory. Pelmanism games[1] are a fun way to forge links in memory for quicker retrieval. They work best with the student's own definitions and language. Many definitions of 'to do' words can be found in textbooks but, if a student is struggling with language retrieval, using his or her own words will be a stronger trigger in the memory. There are three packs: action words, the action required, and the type of writing involved.

It's never too early to start. Working with Key Stage 2 children initiates this way of working. As the children move up the educational ladder, the action words may increase in difficulty but the linkages have been started and it is just a matter of topping up each year.

The combination of cognitive strategy instruction and dynamic support is a heady one because it provides all the ingredients that have proved effective for success for dyslexic learners and, invariably, the simple things work best. This article has explored how to hand over the skills to the learner in a progressive way. Once those providing support are aware of the need to bring the thinking skills to the surface, and how to model these, it is a method that can be used collaboratively with teaching assistants and with parents.

## References

Bandura, A. (2001) Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.

Brown, A. (1992) Reciprocal teaching: An approach to improving reading comprehension by training metacognitive strategies, in *Literacy without Frontiers* (eds F. Satow and B. Gatherer), United Kingdom Reading Association, Widnes.

Feuerstein, R., Rand, Y., Hoffman, M.B. and Miller, R. (1980) *Instrumental Enrichment*, University Park Press, Baltimore.

[1] These are matching card games often used by dyslexia tutors to improve memory.

Glynn, T., Wearmouth, G. and Berryman, M. (2006) *Supporting Students with Literacy Difficulties*, Open University Press, Maidenhead.

Harrison, R. (2000) Learner managed learning: managing to learn or learning to manage? *International Journal of Lifelong Learning*, 19, 312–321.

Haywood, C. (2004) Thinking in, around and about the curriculum: the role of cognitive education. *International Journal of Disability, Development and Education*, 51, 231–252.

Montgomery, J.K. and Kahn, N.L. (2003) You are going to be an author: adolescent narratives as intervention. *Communication Disorders Quarterly*, 24, 143–152.

Price, G.A. and Maier, P. (2007) *Effective Study Skills: Unlock your potential*, Pearson Education, Harlow.

Price, G.A. and Skinner, J.P. (2007) *Support for Learning Differences in HE: The essential practitioners' manual*, Trentham Books, Stoke-on-Trent.

Sebba, J., Brown, N., Steward, S. *et al.* (2007) *An investigation of Personalised Learning Approaches used by schools*, DfES Research Report RR843, University of Sussex.

Skidmore, D. (2002) A theoretical model of pedagogical discourse. *Disability, Culture and Education*, 1, 119–131.

Vygotsky, L.S. (1962) *Thought and Language*, MIT Press, Cambridge, MA.

Zimmerman, B.J. (2001) Theories of self-regulated learning and academic achievement: An overview and analysis, in *Self-regulated Learning and Academic Achievement: Theoretical perspectives*, 2nd edn (eds B.J. Zimmerman and D.H. Schunk), Erlbaum, Mahwah, NJ, pp. 1–37.