Preview

Curriculum Scheme of Work

EQUALS

My Thinking and Problem Solving

Preview of first 3 pages from
My Thinking and Problem Solving
Basic Principles

Equals SLD (Semi-Formal) Curriculum

SoW: *My Thinking and Problem Solving*

Basic Principles

'We'll never do something for a child if he/she has a chance of doing it for him/herself.' **

(with thanks to Pear Tree School, Lancashire)

The Pedagogy of Thinking and Problem Solving for those with severe learning difficulties. In a conventional mainstream curriculum model, cognition (thinking and understanding) problem solving (acting upon understanding) and even metacognition (thinking about thinking) would be placed within the general framework and context of everyday lessons. In good and outstanding schools, much thought is put into strategies such as Bloom's Taxonomy (of learning objectives) (Bloom et al, 1956) so that the pupil is constantly steered towards deep and meaningful learning, as opposed to a shallow and superficial memory for facts.

The purpose of questioning is to extend learning from

- (i)   memory to
- (ii)   understanding to
- (iii)   application, and then on to
- (iv)   the higher orders of learning which are to be found in the abilities to analyse, evaluate and create.

For those with SLD we are however often stuck within memory, since (i) it may take many hundreds of opportunities to repeat a skill before it is lodged in the long term memory, (ii) those with SLD tend to find generalisation extremely difficult (Lacey, 2009) and (iii) we often get enticed by the need to provide routine, order, certainty and structure for our learners. SLD schools – and this is especially so where there may be a number of learners with a dual diagnosis of SLD/ASD who are usually excellent at, and respond positively to, routine, order, certainty and structure.

There are whole pedagogies based upon these principles (TEACCH and ABA for example) and there is no doubt that routines are a major opportunity for learning, especially for those who are functioning at the earliest stages of intellectual development. It is tempting, because it can be thought of as being less stressful and therefore better for the pupil, to maintain routine, order, certainty and structure to such a degree that learners become reliant upon them and experience considerable distress when such certainties are taken away. This is perfectly understandable – if you're not in control of your own life, as so many with learning difficulties are not, there is some security in knowing that someone else is. That means that routine, order, certainty and structure become essentials, not options.

By accepting this, however, we may well be restricting opportunities for learning, because we are not expecting our pupils to think and to problem solve. When faced with problems and difficulties, as inevitably they will be, pupils who have learned to rely on routine, order, certainty and structure will have no skills or strategies to fall back on. In these circumstances it may well be that their distress will be even greater. In preparing SLD learners for life beyond school and greater opportunities for independence it is vital that they are able to function in a range of situations and contexts. In order to be able to do this they will need to be able to apply knowledge, skills and understanding to circumstances that may be unusual, unexpected and unpredictable. What will they do if……? **This SoW proposes that teaching children with SLD to think and problem solve as independently as they possibly can is not an option, it is a necessity.**

Penny Lacey was at the forefront of a growing campaign to bring thinking and problem solving back into the heart of the SLD Curriculum. Here is an extended quote that gets right to the heart of the issue.

> *Children's* (with severe learning difficulties) *likely lack of interest in the world generally can be a challenge but providing exciting activities can help to provoke interest. We need to introduce children to different kinds of animals, let them experience the weather first hand, work with artists, make films, visit unusual places, people and things and experience a range of physical movements from abseiling to horse-riding to sailing to ice skating. Just erecting a tent and eating homemade popcorn in it can provoke many thinking skills. There is a big wide world to be discovered beyond the routine, although we must be careful not to provide a catalogue of unconnected experiences. The connection is* **thinking** *and* **problem solving** *and we need to make that very explicit or the children may not notice.* (Lacey, 2009 pp 22, original emphasis).

Problem solving basically involves four key mental processes:

1. Perception
2. Thinking
3. Action
4. Evaluation

Perception involves:
(i)   recognising and identifying problems
(ii)   recognising opportunities.

Thinking involves:
(i)   breaking down a problem into elements
(ii)   thinking through the relevant features of the problem
(iii)   planning ways to solve the problem.

Action involves:
Remembering how to solve a problem and bringing this memory to the fore.

Evaluation involves:
(i)   evaluating how a plan worked
(ii)   recognising when existing plans and strategies need changing.

Intrinsic within this is the recognition that one needs to improve one's own learning performance through:

- recognising that problems are usually opportunities to do something different;
- recognising why a task is carried out, what it involves, when it is complete and by extension, when it is incomplete;
- communicating preference and choice;
- recognising personal strengths and weaknesses;
- learning from mistakes and setting targets;
- developing attention and concentration;
- developing self-confidence in one's ability to solve problems and face difficulties.

Preview of 4 pages from
My Thinking and Problem Solving

The following SoW has been written on the basis of six repeatable and variable problems that have an infinite number of variations depending on the motivating factors of individual learners. We would strongly advise that *My Thinking and Problem Solving* is not taught discretely, but as opportunity and motivation (to think and solve the problem) arise. The further 8 examples are therefore taken from situations that might occur in each of the other 8 Semi-Formal (SLD) SoW that Equals will be producing over the next two years or so.

Never knowingly do something for a learner when you think they might be able to do it for themselves.

Learning Intentions	Teaching Activities Six general and repeatable problems	General Points to Note	Tier Points to Note
To gain access to my favourite…….. toy, snack, drink, i-pad, piece of flappy string, etc. **To acknowledge that I want/need equipment** **To get the resources and equipment I want/need** **To communicate a want/need**	**TIER 1**. **Memory Building**. Introduction of the task, namely to be involved in getting my favourite toy, snack, drink, i-pad, piece of flappy string, etc from wherever it is regularly kept at a regular time(s) of the day. This might be prompted by a visual timetable or some other regular indication. The learner may need physical or verbal prompting to get the item, but must be involved in the process many, many times. The item **MUST** be independently accessible. If it cannot be accessible (because for example, the i-pads need to be locked away for security reasons) it is not an appropriate item to use. **TIER 2. Sabotage and recognition of a problem** sees 'my time' announced without any prompt to get the item concerned. The minimum required here is for learners to recognise that 'my favourite….' is missing, that is, that there is a problem and they need to do something about it. This might be (as a minimum) to indicate that s/he does not have 'her/his favourite….. ' and to ask for help from a member of staff. In this case the learner might be assisted to	You need to know what your pupil is motivated by and use this to support solving the problem This may be very different for different individuals. Begin with what a pupil wants rather than something they need. Recognising a need is a higher functioning skill	The accessibility exception might be for those who are not physically able to take themselves to the place, open drawers, open cupboards, in which case the school should look to putting the item in a place that is accessible or adapting the physical environment BEFORE relying

	search for her/his favourite……. We can see that the whole class having 'me time' at the same time can be useful in providing modelling opportunities to the less able learners. Staff must recognise that learners may solve this problem by doing something else or by doing nothing! Whatever happens, staff should avoid prompting!

TIER 3. Independent solutions sees the problem recognised, but the member of staff unable to give help because they don't know the answer. You are looking for learners to go to the cupboard, drawer, toy tray to get 'my favourite….' without being told to do so.

TIER 4. Generalisation might now see an extension of the problem. For example, 'my favourite……' is not in its usual place. A potential solution should not need to be taught because you are looking for generalisation skills, that is, for the learner to look in another cupboard. | | on teaching the learner to ask for help.

Not finding my favourite toy, snack, drink, i-pad, piece of flappy string etc might well have unintended consequences for the class staff which has to be prepared for. Class staff will know their learners best and should have strategies in place. It is however **vital** that the missing item is not magically found in order to avoid a potential or actual melt-down. |

To find my lost...... lunch box, hat, headphones, wellington boots, etc.	**TIER 1**. **Memory Building**. Introduction of the task, namely to be involved in looking for items that the learner needs when they are not in their regularly kept spot. It is advisable that there are a limited number of places to be looked in before the item is found, and that it is always found in this first stage. It is also advisable that items are 'lost' occasionally, rather than every day and this therefore becomes a learning intention which may take some time.		You will note that the learner has now moved from 'wanting' to find to 'needing' to find. That is, there is now a connection that has to be established between the item and being able to do something because one has the item, such as eating my lunch, or indeed, not being able to do something because one doesn't have the item, such as, going out to play in the rain with no wellington boots.
	This particular memory building will imply that the learner has already gone through the previous learning intention of 'gaining access to my favourite ......' and is now used to the concept of looking for something. Again, the item **MUST** be independently accessible. If it cannot be accessible (because for example, the i-pads need to be locked away for security reasons) it is not an appropriate item to use.		
	TIER 2. Sabotage and recognition of a problem sees the regular limited places where the learner will look as revealing no lunch box, hat, headphones, wellington boots, or there may be some boots or hats, but not enough or they are the wrong sizes.		
	The minimum requirement here is for learners to recognise that the item has not turned up in its usual alternative spot, that is, that there is a problem, and to do something about it. This might be (as a minimum) to indicate that s/he cannot find the item and to ask for help from a member of staff, in which case the learner might be assisted to search for the item in question.		
	We can see that if the whole class have wellington boots to search for at the same time, this can be useful in providing modelling opportunities to the less able learners. Staff must recognise that		

learners may solve this problem by doing nothing, for example, not listening to music or not going out in the rain. Staff might therefore have to work on the motivational angle, but should avoid instructing and prompting.

TIER 3. Independent solutions sees the problem recognised, but the member of staff unable to give help because they don't know the answer. You are looking for learners to go to the cupboard, drawer, toy tray, fridge to find the item they need without being told to do so. The learner may need to be prompted to remember where they last had the item, for example, *'I last had my headphones in the hall'.*

Alternatively, the learner could find the two wellington boots in different places.

TIER 4. Generalisation sees an extension of the problem. For example, the item cannot be found in the classroom. A potential solution would be for the learner to consider remembering when the learner last had the item and check there.

The learner may also consider borrowing someone else's wellington boots which will of course lead to further thinking and problem solving opportunities such as *'Do I have permission?' 'How do I get permission?' 'Do they fit me?"*

The learner may have to consider what to do if the item is never found, though we are not suggesting that you permanently lose things deliberately! That is, we would imagine that although these things will inevitably happen naturally, this should not stop staff discussing with the learner what the options might be if it is feared that something is irretrievably lost.