Reading 10

Learning to think metaphorically

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Notes

Joyce *et al.* provide interesting descriptions of how teachers have used metaphors to evoke thinking among their learners. The examples are taken from language lessons as well as other subjects. The article begins by taking us into an English classroom and demonstrating the process a teacher follows to develop the imaginative abilities of his English students. We are then shown how learners use metaphorical thinking to solve problems in what seems to be a Civics or Environmental Studies lesson.

After immersing us in these practical demonstrations by teachers, the writers 'theorize'. They explore how metaphorical thinking can help us achieve learning (and in this they draw on, often implicitly, constructivist ideas which you are now familiar with), explain different kinds of analogies and metaphors, and then suggest a method (or a sequence) we could use to implement this kind of teaching. They do this by, again, demonstrating how a teacher used these ideas in a classroom.

As you read pay particular attention to the *learners' dialogue*. Try and get into their heads and imagine how they are thinking and, particularly, how the teacher's insistence on metaphors *changes the ways in which they think*. How would you use these ideas in South African classrooms?

*This edited article is from B. Joyce, E. Calhoun, and D. Hopkins, 'Learning to think metaphorically' in **Models of Learning – Tools for Teaching** (Buckingham, Open University Press, 1997).*

[…] A secondary school class is creating a book of short stories and poems. Their English teacher, Peter Brown, has gradually become aware that some stories and many of the poems are hackneyed and ordinary. He has been helping individuals rewrite their poems and stories, and some of them have been improved, but on the whole he is disappointed with the work.

Then Brown runs across the work of William Gordon (1961), who believes that creativity can be enhanced by a series of group exercises. These exercises are designed to help us understand the process of creativity more completely and to use new metaphors and analogies in order to 'break set' and generate new alternatives. Brown decides to try Gordon's methods.

Learning to think metaphorically: a process

One morning, he has each of his students read a poem and a short story. He then says, 'Today we're going to try something new that I hope will help us see our stories and poems in a different light. For the next 15 or 20 minutes, I want us to play with ideas and then have you go back to your work and see what you can do to improve it. At the end of this exercise, I'm going to ask you to rewrite part or all of your poems and stories.'

He begins by asking what a poem is. The children give a variety of answers, from which Brown selects key words and writes them on the board:

- 'It doesn't have to rhyme.'
- 'It lets your feelings come out.'
- 'It uses different kinds of words.'

He then asks, 'How is a poem like a car?'

The children are puzzled. Then one learner ventures, 'It takes you on a trip. It's a word trip and you have to have the road in your imagination.'

Someone else observes, 'It is self-propelled. You just get in it and it goes.'

Another student comments, 'When you're writing one, sometimes you have trouble getting the motor started.'

After a time, Brown says, 'Pick an animal – any animal.'

'How about a giraffe?' someone suggests.

'OK.' Then Brown asks, 'How is a poem like a giraffe?'

'It has a lot of parts fastened together in funny ways,' one student laughs.

'It kind of stands above everything else and looks at things in a different way,' another adds.

The exercise goes on. After a time, Brown asks the students to select one of the words that they have dealt with in discussing a poem. They select the word 'above'. 'How does it feel,' he asks, 'to be above?'

'You feel different,' replies one.

'You can see things you don't ordinarily even notice,' says another.

'You'll start feeling superior if you don't watch out,' says a third student.

And so it goes. Finally, Brown asks the students to make lists of words they have been dealing with that seem to be ***opposite*** in some fashion; words that apply tension to each other. The students pick 'giraffe' and 'snail', for they feel that both are animals but that they are very different in the way they live and move.

'Well,' Brown says, 'let's come back to your poems and short stories. Think of them as giraffes and snails together. Write your poems or stories as if they were a giraffe and a snail holding hands, going through the woods together.'

Learning metaphorical thinking: the products

Here are two products of that exercise:

The Great King

The great king stares out over his kingdom watching admiringly. The king stares out over his subjects, the seagulls, fish, crabs, and everything else in the safe underwater home of his bottomless stomach. He lets out another breeze of his salty breath that can be smelled miles away. Another crash of his arm pushes away the sand to make damp mud that seagulls love. His ever-stretching body wraps around the world of his presence for he is king of earth. He opens his heart to the people who take meaningful walks on his beach as if paying gratitude for everything he has done. Another crash sends a seagull flying as if he was a royal messenger. The Ocean, the king, stares and is proud of what he sees.

The Motorcycle

It sounds like an enraged mountain lion.
It looks like a steel horse.
It shifts gears and changes notes.
It goes very fast.
The sound of the motorcycle breaks the stillness of the night.

Peter Brown has introduced metaphorical thinking to his students.

Another example of learning to think metaphorically

Let us consider another example from Brown's classroom. His Grade 9 class […] is preparing a campaign in opposition to a change in local government regulations that would permit a large grove of oak trees to be cut down as part of a large road building operation. They have made posters that they intend to display around their community and send to local and national politicians. They have the rough sketches for the posters and their captions, and they are examining them …

'Well, what do you think?' asks Gemma.

'Well, they're OK,' says Tommy. 'They certainly say where we stand. Actually, though, I think they're a bit dull.'

'So do I,' adds Holly. 'A couple of them are OK, but the others are really boring.'

'There's nothing really wrong with them,' chimes in another, 'they're just not very exciting.'

After some discussion, it is obvious that nearly everybody feels the same way. They decide that two or three of the posters are well designed and convey their message, but they need some others that would be more poignant.

'Let's try the method of metaphorical thinking,' suggests one of the children.

'With pictures and captions?' asks one of the other children. 'I thought we could only use metaphorical thinking with poetry. Can we use metaphorical thinking with stuff like this?'

'Of course we can,' says Gemma. 'I don't know why I didn't think of it. We've been doing it with poetry all year long.'

'Well I guess we've nothing to lose,' adds Tommy. 'How would it work?'

'Well,' says Gemma, 'we could see these posters we've done as the beginning point and then go through a metaphorical thinking exercise and see if it gives us some ideas for pictures and captions. We could think of oak trees in terms of various personal and direct analogies and compressed conflicts.'

'Well let's try it,' chimes in George.

'Let's start right now', says Sally. 'We could go through our exercises and then have lunch time to think about the posters.'

'Can I be the leader?' asks Marsha. I've got some super ideas for some stretching exercises.'

'Is that OK?' says Gemma.

The children agree and Marsha begins.

'How is an oak tree like a toothpick?' she asks.

'You use the tree to pick the teeth of the gods,' laughs George. Everyone joins in the laughter and they are off.

It's clear that Peter Brown has spent enough time using the method of metaphorical thinking that the students have internalized the process and purpose. They can proceed on their own, drawing on the method when they find it helpful.

Understanding metaphorical thinking as a method of learning and teaching

[…] Ordinarily when we are confronted with a task – say a problem to be solved or a piece of writing to be produced – we consciously become *logical*:

- We prepare to write by making an outline of the points to be made.
- We analyse the elements of a problem and try to think it through.
- We use our existing storehouse of words and phrases to set down our ideas.
- We use our storehouse of learnt solutions to face a problem.

For most problems and tasks requiring us to express ourselves, our logic works well enough. But what do we do when our old solutions or ways of expressing ourselves are not sufficient to do the job?

That is when we can use the method of metaphorical thinking.

This model of learning is designed to lead us into a slightly illogical world – to give us the opportunity to ***invent new ways of seeing things***, new ways of expressing ourselves, and new ways of approaching problems.

For example, teachers often struggle with the problem of how to deal with absenteeism. When a student repeatedly fails to come to school, what do they do? Frequently they turn to punishment. And what punishment is available? Frequently, suspension. That is logical, isn't it? To choose a severe punishment to match what is regarded as a severe infraction?

The trouble with the solution is that it imposes on the student as a penalty exactly the same condition that the student had chosen ***in place*** of school. (In other words, our punishment legitimizes the student staying away!)

Metaphorical thinking is used to help us develop fresh ways of thinking about the student, the student's motives, the nature of penalties, our goals, and the nature of the problem. We have to develop ***empathy*** with someone who is in conflict with us. We have deliberately to avoid what appears to be logical thought because it leads us to an inadequate conception of the problem and thus an absurd (if logical) solution.

Through analogies we might conceive of our absentee as an 'unhappy lark', as someone on a 'destructive vacation', and the problem as one of ending an 'empty feast'. Our own needed behaviours may be ones of 'seductive strictness', 'strong lovingness', and 'dangerous peacemaking'.

lark: a colloquial term for a mischievous person.

If we can relax the premises that have blocked us we can begin to generate new solutions. We can consider that we have been taking responsibility for the students in areas where they may need to be responsible for themselves. We can wonder whether the solution lies as much in our administration of the rules as it does in how we teach. We may wonder whether communities of peers might not create the energy and sense of belonging that would attack the problem from a different perspective.

The social and scientific world in which we live abounds with problems for which new solutions are needed. Problems of poverty, international law, crime, just taxation, and war and peace would not exist if our logic did not fail us.

Striving for appropriate self-expression – trying to learn how to write and speak lucidly and compellingly – bedevils all of us. Two problems are persistent: grasping the subject clearly and comprehensively, and generating appropriate forms of expression. […]

A method for using metaphorical thinking in teaching

Through metaphoric activity […], creativity becomes a conscious process. Metaphors establish a relationship of likeness; the comparison of one object or idea with another object or idea by using one in place of the other. Through these substitutions the creative process occurs, connecting the familiar with the unfamiliar or creating a new idea from familiar ideas.

In teaching people to use metaphorical thinking, three types of analogies are used as the basis of instructional exercises:

- personal analogy;
- direct analogy;
- compressed conflict.

Personal analogy

To make ***personal analogies*** requires students to ***empathize*** with the ideas or objects to be compared. Students must feel they have become part of the physical elements of the problem. The identification may be with a person, plant, animal, or non-living thing.

For example, students may be instructed, 'Be a car engine. What do you feel like? Describe how you feel when you are started in the morning; when your battery goes dead; when you come to a stoplight.'

The emphasis in personal analogy is on ***empathetic involvement***. Gordon (1961) gives the example of a problem situation in which the chemist personally identifies with the molecules in action. He might ask,

'How would I feel if I were a molecule?' and then feel himself being part of the 'stream of dancing molecules'. Personal analogy requires loss of self as one transports oneself into another space or object.

Direct analogy

Direct analogy is a simple comparison of two objects or concepts. The comparison does not have to be identical in all respects. Its function is simply to transpose the conditions of the real topic or problem situation to another situation in order to present a new view of an idea or problem. This involves identification with a person, plant, animal, or non-living thing.

Gordon cites the experience of an engineer watching a shipworm tunnelling into a timber. As the worm ate its way into the timber by constructing a tube for itself and moving forward, the engineer Isambard Kingdom Brunel got the notion of using caissons to construct underwater tunnels (Gordon, 1961, pp. 40–41).

Another example of direct analogy occurred when a group was attempting to devise a can with a top that could be used to cover the can once it had been opened. In this instance, the analogy of the pea pod gradually emerged, which produced the idea of a seam placed a distance below the top of the can, thus permitting a removable lid.

Compressed conflict

The third metaphorical form is ***compressed conflict,*** generally a two-word description of an object in which the words seem to be opposites or to contradict each other. 'Tiredly aggressive' and 'friendly foe' are two examples. Gordon's (1961) examples are 'life-saving destroyer' and 'nourishing flame'. He also cites Pasteur's expression, 'safe attack'.

Compressed conflicts, according to Gordon, provide the broadest insight into a new subject. They reflect the student's ability to incorporate two frames of reference with respect to a single object. The greater the distance between frames of reference, the greater the mental flexibility. […]

An example of a teacher using metaphorical thinking

[…] Metaphorical thinking procedures may be used with students in all areas of the curriculum, the sciences as well as the arts. They can be applied to both teacher-student discussion in the classroom and to teacher-made materials for the students. The products or vehicles of metaphorical thinking activity need not always be written: they can be

oral, or they can take the form of role-plays, paintings and graphics, or simply changes in behaviour.

We have found that the method of metaphorical thinking can be used with all ages, though with very young children it is best to stick to imagination-stretching exercises. Beyond this, adjustments are the same as for any other approach to teaching – take care to work within their experience, make rich use of concrete materials, pay attention to pacing and the explicit outlining of procedures.

The method often works effectively with students who withdraw from more 'academic' learning activities because they are not willing to risk being wrong. Conversely, high-achieving students who are only comfortable giving a response they are sure is 'right' often feel reluctant to participate. We believe that for these reasons alone, metaphorical thinking is valuable to everyone.

The following transcript illustrates the use of the method of metaphorical thinking to enlarge upon an academic concept. It was preceded by two concept attainment lessons, one on the concept of ***oxymoron*** and one on the concept of ***small, wealthy countries*** …:

Phase 1: Description of present condition

The teacher asks students to write a brief characterization of the world's small, wealthy countries. The students have just finished analysing a statistical data set on these countries.

Phase 2: Direct analogies (and examples of student responses)

Note that in phases 2–6, the teacher asks a question that evokes some form of metaphorical response from the learners. The learners' responses appear in the brackets.

The teacher asks the learners:

- How is the Panama Canal like a bathtub? (drains)
- How is the Panama Canal like a videotape? (long, encased, continuous, viewed)
- How is a videotape like a book? (information, pictures)
- How is viewing a videotape like dancing? (action, movement)
- How is a dream like a skateboard? (falling, adventurous, exhilarating)
- How is a skateboard like a blender? (spinning, wipe-out)

Phase 3: Personal analogies (and examples of student responses)

Next, the teacher asks:

- Be the Panama Canal. It's midnight and a long string of ships has just begun their passage from the Pacific to the Atlantic. How do you feel? (wet, sleepy)
- A huge ship, just barely able to clear both sides of the locks, enters the first lock. How do you feel? (nervous, stop!)
- Pilots are getting on and off of ships. How do you feel about the pilots? (friends, protectors)
- The tide is coming in with the ships from the Pacific. How do you feel about the tides? (smelly, regular, necessary)
- Be a raincloud. You're moving into a clear, blue sky. Inside you are hundreds of little people with buckets. How do you feel about these little people? (laughter, 'go for it')
- You move nearer a town. What are you thinking? (gotcha!)
- At a signal from you, all the little people begin emptying their buckets. How do you feel? (relieved, light)
- You're almost empty. You're starting to break up and you see a little wisp of yourself disappearing on the breeze. How do you feel? (nostalgic, sad)

If you feel a little unsure about why the teacher goes through these various phases, reread pages 100 and 101 before you continue.

Phase 4: Compressed conflicts (and actual student responses)

The teacher now asks the learners to use some of the words they have generated to construct word pairs that seem to 'fight' each other; word pairs that contain tension or incongruity. Here are some of the word pairs they came up with:

- lonely friendship;
- accustomed newness;
- apprehensive relief;
- encased adventure;
- archaically new;
- friendly enemy;
- descending escalation;
- fictional fact.

Phase 5: Direct analogies (and actual student responses)

Next, learners are asked to choose one or two word pairs that contain a great deal of incongruity. They choose 'lonely friendship' and 'fictional fact'. The teacher asks:

- What's an example of a 'lonely friendship'? (trying to resume a friendship after an argument or fight)
- What is a 'fictional fact'? (a fantasy, like ***Alice in Wonderland)***

Phase 6: Re-examination of the original task (and actual student responses)

Now the teacher uses the metaphorical thinking skills developed to help learners think about the critical concept (small, wealthy countries) again. The teacher hopes that learners will now think more imaginatively and deeply, and starts the process with the following instruction, 'Think of our small, wealthy countries in terms of "apprehensive relief"'.

Learners respond as follows:

- 'In the case of Kuwait, Hussein is out but it could happen again.'
- 'Hong Kong is prosperous but worried about China and 1997.'
- 'Qatar could be swallowed up, they're so small they need a bodyguard – their wealth is based on oil, which could run out or the world market could change with new kinds of fuels etc.'

The use of metaphorical thinking following the analysis of data on the world's small, wealthy countries enabled students to elaborate their understanding of these countries.

What can we learn from this lesson?

Initial data analysis left the students with an impression that these countries have no problems (with the exception of Kuwait). The method moved students towards a more differentiated view of the countries, which enabled them to hypothesize weaknesses as well as strengths in their relative world positions.

Educators and researchers other than Gordon have explored the use and effectiveness of learning to think metaphorically. Judith and Donald Sanders' (1984) work is particularly useful for the range of explicit applications for stimulating creativity through metaphoric activity. We have found this source to be particularly useful with teachers, for we have noticed that many educators are not automatically aware of the spectrum of useful applications for models designed to induce divergent thinking.

The full details for this reference can be found in the bibliography on page 168.

For some reason, many of us think of 'creativity' as an aptitude that defines talent in the arts, especially writing, painting, and sculpture. The creators of these models, however, believe that this 'creative aptitude' can be improved; it has applications in nearly every human endeavour and, thus, in every curriculum area. By providing illustrations in the setting of goals, the development of empathy, the study of values, a variety of areas of problem solving, and the increase of perspectives for viewing topics, the Sanders make a clear and convincing case for the power of these models in expanding student thinking.

Teachers using metaphors emphasize a social environment that encourages creativity; they use group cohesion to generate energy that enables the participants to function independently in a metaphoric world. The table below summarizes this model of learning; a model that helps students create something new.

Syntax of the metaphorical model of learning and teaching	
Phase 1: Description of present condition	The teacher asks students to describe the situation, or the situation as they see it now.
Phase 2: Direct analogies	Students suggest direct analogies, select one, and explore (describe) it further.
Phase 3: Personal analogies	Students 'become' the analogy they selected in phase 2.
Phase 4: Compressed conflicts	Students take their descriptions from phases 2 and 3, suggest several compressed conflicts, and choose one.
Phase 5: Direct analogies	Students generate and select another direct analogy, based on the compressed conflict chosen in phase 4.
Phase 6: Re-examination of the original task	The teacher has students move back to the original task or problem and use the last analogy and/or the entire metaphorical experience.