

THE POWER OF METAPHOR AND ANALOGY IN LEARNING

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As I develop my capabilities as facilitator in a Master of Professional Practice programme at Otago Polytechnic, I find that there are a range of processes that are really helpful to my postgraduate students to use in developing and undertaking their work based learning research projects. The difference between this master's programme and many others is that it is focussed on process as opposed to content. These processes can include problem solving, research as well as learning.

In each of these processes an important stage is that of working with models and many students are unfamiliar with the concept of modelling and its associated processes. The purpose of this thought piece is to discuss the contribution of metaphors and analogies to the modelling process. The reason for this is that many of them are very tentative about using their own thinking to determine how they might undertake an independent piece of research as they are still bound by simple answers or answers that may be readily found. And they are hesitant to trust their own ideas and experience.

In practice, what a metaphor can do is provide a simple explanation of something that is a lot more complicated.

Metaphors in learning have been seen as significant for some time (Duit, 1991). They have the capacity to allow an unknown domain to be explored using a simple perspective drawn from a completely different field. Unlike an analogy which bears closer reference between two fields, a metaphor brings an unknown quality to its application in new applications. In particular, they have been seen as useful aides to modelling or theorising ideas in the experiential learning process (Gowin, 1983). Partially this is due to them providing links to existing schemata of the mind in generic ways and this allows a wider range of new schemata to be considered (Rumelhart & Norman, 1981). This supports the process of constructivistic learning as described by von Glaserfeld (Glaserfeld, 1996)

Metaphor and analogy are both similar and different. Again Duit (1991) distinguishes them in the following ways:

Analogy is more definitive in the sense that the likenesses between two domains may be directly compared in terms of the analogic structure used. For example, electric current may be likened to the flow of water and whilst pipes control where the water goes, so electric wires control where the electric current goes.

Metaphor is more ephemeral and whilst there may be propositional links, these are less tangible in either form or process. For example, the ocean is its own universe, implies that the ocean is very different from land, has many aspects which are unknown and some of it is as difficult to find out about as the universe.

Returning to postgraduate study and the requirement to produce a valid piece of research, one of the metaphors I find particularly useful is that of painting a picture. The value in this metaphor is that it is not threatening and comes from a time of our lives when painting and play were synonymous.

The new task before them is no longer such a mystery and as a painting was an adventure, so is undertaking some research. And so by using a metaphor the mystery of the new can be explored using a familiar pattern.

By getting them to think about the act of creating a painting and linking that to their study, they can start to see the analogy this metaphor provides:

Most importantly, the painting has boundaries, therefore analogously the research or study is going to have boundaries in terms of scope and time to undertake.

Next the picture is going to have a composition, which reflects the content that is going to be involved and the relative significance of the parts and their contribution to the whole.

They also understand that they are the painter and responsible for producing a picture that conveys a message and that their engagement with both the parts and the whole of the picture will help them produce something which is a coherent whole. Furthermore that the completed picture is representation or model of their understanding of the situation and that no two paintings of even the same scene will be the same. Also that their composition and parts will emerge as the work proceeds and their understanding of what they are trying to achieve becomes clearer. Moreover, that their solution is a unique product of their own prior learning and experience which they bring to the work rather than it being something that they have had to start afresh with.

By getting students to envisage an end point and a journey at the beginning of their masters project, they can see how this develops and changes as they progress through their project

The metaphor of making a painting thus provides a framework which enables a student to see their end outcome in a general way, but also allows them to see that this can be changed along the way as they learn more about what they are doing.

My view of this metaphor is it makes them conscious of exploring ideas in an experiential learning process and with the support of peers and facilitators, develops their comprehension of their independent learning capability and the validity of their solutions.

More generally, the use of metaphors and analogies provides facilitators with a mechanism which helps their students to link their current research work with their past experiences and learnings.

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