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## Bloom's Taxonomy, Contexts and Task Challenge

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Taxonomies related to education and learning offer both potential and risk. Moreover, my experience as a secondary school teacher of Technology Education and now as a Lecturer, has led me to significantly revise my own thinking in this area. Though taxonomies such as that presented by Bloom offer a great deal by way of crystallising core thinking processes in people's minds, I would argue there is a risk that they can mask the reality of task contexts. I think that rather than considering the elements of Bloom's Taxonomy as hierarchical, there is merit in viewing them more discretely and in direct relation to task contexts. Moreover, I would argue that in most instances, it is the task context (and prior experience of the pupil), rather than the level of the taxonomy, which dictate the challenge from a pupil's perspective. If a pupil is not experiencing challenge, questions could be asked about the depth of learning that is taking place. However, before elaborating on the issue of challenge, I will describe what I mean by task context.

The study of context is arguably very complex, and in many ways, in its infancy. Here, however, I take it to include at least two core elements. Firstly, the way the task is framed, set-up and presented to the pupil and secondly, the nature of the content and knowledge the pupil will be dealing with. Though somewhat simplified, I believe awareness and control of these in direct relation to the skills within Bloom's Taxonomy are critical for promoting deeper learning.

Of all the taxonomies associated with education, Bloom's Taxonomy of the Cognitive Domain remains the most prolific (Bloom, 1956). When it was first published nearly sixty years ago, it offered a notable step change in the way people were thinking about learning and cognition; the benefits of which are still being reaped today. For me, however, there are some cautionary aspects to this. Though used successfully as a planning tool, there is almost no empirical evidence that in practice the processes are moved through successively as the taxonomy may suggest (e.g. Moore, 1982 and my own empirical post-graduate work). Additionally, there is a risk that processes further up the taxonomy are seen as more valuable. This is something Bloom himself was at pains to avoid (*see* 4<sup>th</sup> Guiding Principle, Bloom, 1956, p.14) and a further aspect at odds with its pictorial

representation as a triangle. Similarly, processes may be thought of as somehow mutually exclusive to knowledge (Dewey's False Dichotomy). As described by Bereiter & Scardinalia (1998), this is not possible and knowledge is saturated within all levels. In this article, however, I am going to discuss some of the implications I think stem from the construct of 'difficulty' as a basis for differentiating the levels of the taxonomy.

The problem here, discussed also by Marzano & Kendall (2006), is that 'difficulty' is a relative construct, which is fluid rather than fixed. That is to say, what is easy to one person may appear difficult to another, and this will change for each with time and circumstances. Indeed, it is noteworthy that Bloom himself states that the taxonomy does not account for pupils' prior experience (p.39) and assumes problems to be new. Though there are indeed instances where processes higher up the taxonomy are 'harder' than those lower down, there are just as many where the opposite holds true; and this is arguably because of the task context and the pupil, rather than the taxonomy.

For example, an Art teacher shows her pupils a new painting and asks them to state something they like and something they dislike about it. After a few seconds, one pupil raises his hand and provides a valid answer for each. To do this, it could be argued that he had to analyse the painting and compare self-selected aspects of it to that which he knows to constitute his personal preference. Though it took him only seconds, this would appear quite far up the taxonomy. Other pupils may have struggled more. During a maths class later that day, the same pupil calculated sine as adjacent over hypotenuse. His teacher picked up on this and reminded him about 'SOHCAHTOA'; an acronym that was developed by teachers because of the difficulty pupils have in simply recalling knowledge. This, by contrast, would appear at the bottom of the taxonomy.

So why is this so? I would suggest that in the first instance, the context did not require the pupil to engage very deeply with the processes. If the task context and content force the pupil to engage more deeply with a given process, he or she would necessarily find it more challenging: 'evaluating' the advantages and disadvantages of one mobile phone against another is simply not as difficult as

necessarily abstract and the more abstract knowledge becomes, the harder it can be to recall. SOHCAHTOA is effective because it provides a framework that reduces this level of abstraction.

Whilst the contribution made by Bloom's Taxonomy cannot be underestimated, as a communication system derived from classifying different types of exam questions, it does not necessarily reflect contemporary understanding of how learning takes place. Having toiled with this over almost a decade, I have made three key decisions. Firstly, I consider such processes in relation to the task or learning context and not in isolation. Secondly, I do not view the elements in Bloom's Taxonomy as successive levels, but simply a collection of equally important intellectual processes I wish to promote and develop in learners; the challenge of which I control. Some of the most effective and authentic learning I have seen moves through Bloom's Taxonomy from top to bottom. Lastly, I will continue to develop my own understanding of the role and design of task contexts and ensure I teach learners search strategies and ways to navigate through and between these to promote deeper understanding (see Perkins & Salomon, 1988).

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