Contribution ID: **179** Type: **Oral Presentation**

Conceptual Coherence By Contrast

Friday, 12 July 2013 09:40 (20 minutes)

Abstract content
   (Max 300 words)

Understanding for the promotion of the development of heuristic thinking should be at the crux of all science communication and education. In order for understanding to be gained the subject in question must be able to relate the imparted information with what they already know and to transfer relevant information between different intellectual cohorts. This builds up a framework in which comprehension can be achieved by placing new information in the correct context. This can be seen in Bransford & Johnson, 1973 "Context Sufficient to Make sense of Balloons Passage" analogy. It highlights that understanding is facilitated by relatability. This forms the basis on which conceptual coherence is built.

Conceptual coherence is structured around 'big ideas.' These big ideas are defined as 'principles that are important for developing science literacy and that provide a foundation for future learning.'

The Unizul Science Centre has placed a great deal of importance on conceptual coherence. Working within the framework of conceptual coherence, the Unizul Science Centre has taken a new approach in doing science shows through the use of contrasts. This approach is called conceptual coherence by contrast. It is where the nature of the idea is examined through contrasting two or more phenomena central to the big idea. The method of conceptual coherence by contrast was piloted on a programme based on waves, where wave nature was examined by contrasting the properties of waves in sound and light. The 'big idea' in this show is wave nature but the conceptual coherence is found in the underlying comparative structure that has been woven into the show where select properties of the wave nature were examined. These included wave type, amplitude, frequency, pure and impure frequency mixtures etc. A pre- and post-test was administrated that tested the knowledge of the students (grade 10-12) on the wave nature. These findings, together with the success of conceptual coherence by contrast, shall be presented.

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Session Classification: Education

Track Classification: Track E - Physics Education