Let’s Get Learning!

Using adult learning activities to increase teachers’ knowledge of content, development & pedagogy in math & other disciplines

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How many squares can you find in this picture?
Pedagogical Content Knowledge

Content Knowledge

Developmental Knowledge

Knowledge of Teaching Techniques

PCK
Example Adult Learning Activity

SORT & RE-SORT
# Big Ideas in Sets

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| **Sets** | • Attributes can be used to sort collections into sets.  
• The same collection can be sorted in different ways.  
• Sets can be compared and ordered, and numbers are a useful tool for doing so. | • Color, size, number, shape, type of object, etc.  
• Autumn leaves can be sorted by type of tree or by color or by shape  
• *There are 2 more red bears than blue bears.* |
Pedagogical Content Knowledge

- Content Knowledge
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Learning Path

- At all ages, children classify intuitively.
- By 2 weeks of age, infants distinguish between objects they suck and those they do not.
- By 2 years, toddlers form sets with objects that are similar.
- At age 3, most children follow verbal rules for sorting.
- In preschool, children can sort objects according to a given attribute and form categories (although they may switch attributes during the sorting).
- Not until age 5 or 6 do children sort consistently by a single attribute and re-classify by different attributes.
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Teaching Implications

- Attribute recognition precedes organization (match...sort...pattern).
- Number of attributes is a difficulty factor.
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Activity for Children

- Beforehand, read *Five Creatures* by Emily Jenkins (maybe more than once).
- Place two hula hoops on floor or make two tape circles on floor.
- Say “some children have shoes with laces” (point to one hoop), “some children have shoes without laces” (point to other hoop)
Pedagogical Content Knowledge

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Good Adult Learning Activities….

- are based on a central and coherent concept of the discipline being explored;
- pose a puzzle or problem;
- are interesting/complicated enough to capture and retain adult attention;
- clearly focus thinking on the relevant content/ideas;
- are easy to implement in an adult PD setting;
- & may have more than one solution or route to solution.

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Take-Away Messages

Content is complicated.
Teachers need to be learners.

THANK YOU!
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