Enhancing Children’s Ability to Generalize Knowledge

Although learning is of paramount importance in a child’s cognitive development, the ability to transfer what one has learned beyond the original context in which it was learned is equally important. If children do not generalize what they learn in one task or situation to similar tasks and situations, their development will be much slower and less efficient. This rapidly increasing ability of young children supports their ability to acquire new information and to generalize it to new situations.

Research with very young children finds they make rapid progress in understanding and using a variety of symbolic artifacts, even though it can be quite difficult for them to appropriately interpret some symbols in their very early years.

For instance, in numerous studies we found that 2-1/2-year-old children who see a miniature toy hidden in a scale model of a room are typically unable to find a larger toy when told it is hidden in the corresponding place in the room; they fail to appreciate the relation between model and room. However, 3-year-old children find the same task very easy; they immediately notice and exploit the model-room relation to find the hidden toy.

One way to improve young children’s use of a symbolic artifact that they do not understand is to give them experience with a similar symbol they do understand. In several previous studies, we established that 2-1/2-year-olds can solve the model task if they have had previous experience with a similar but easier task in which they performed successfully.

In a recent series of studies, we found that this concept of symbol-based transfer is surprisingly robust. We first gave 2-1/2-year-olds experience with a relatively easy model task. Then we tested them on a harder task. We found that children who understood and solved the first problem did very well on the second, more difficult one. This was true even when the two tasks were encountered in very different settings and even after a prolonged (1-week) delay. The children were successful even when their second, transfer task was one that 3-year-olds typically fail.

These results provide strong evidence that experience with a symbolic relation that they can understand helps young children appreciate a new, more difficult one. This is significant for two reasons:

- It is often difficult to get very young children to transfer what they have learned in one situation even when a second situation is extremely similar. However, when the tasks are based on insight into a symbolic relation, children readily transfer.

- The results testify to the crucial importance of symbol use in early development. It is through their rapidly increasing sensitivity to
symbolic relations that children’s thought becomes increasingly freed from the immediate present. This development makes possible a vast expansion of their learning possibilities and intellectual horizons.

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