Some Questions Are More Effective Than Others

Four-Year-Olds Can Already Identify the Best Questions to Ask

Berlin, July 2017 – What kind of questions do we need to ask to get the information we are looking for? And when do children learn to recognize which questions are more informative? Researchers at the Max Planck Institute for Human Development have investigated the questioning strategies of children aged three to five years. Their findings have been published in Developmental Psychology.

One way to learn about the world is by asking questions. But when and how do we learn to ask good questions? Previous research has shown that the ability to ask effective questions and to efficiently explore the environment starts to develop at age four, continuing on into adulthood. As a result, primary school children aged of seven to ten still have difficulty coming up with effective questions from scratch.

However, a recent study conducted by the Max Planck Research Group iSearch | Information Search, Ecological and Active Learning Research with Children shows that four-year-olds are already able to tell which of two questions is more informative and thus more effective. In other words, they have the cognitive ability to tell which question will get them closer to the answer they are looking for. “Our findings suggest that three- and four-year-olds already have the necessary basic skills to develop successful and adaptive questioning strategies,” says Azzurra Ruggeri, head of the iSearch Research Group.

A total of 268 children aged between three and five years old took part in the study, with each child participating in just one of the study’s four experiments. In all experiments, the children were shown a storybook about a monster called Toma, who has been late for school several days in a row. The children were also shown the reasons for Toma being late—for example, that she had overslept, been watching TV, or not been able to find her jacket.

In the actual test situation, the children then saw two of Toma’s friends. Each friend asked a question to find out why Toma was late to school again: One friend asked a question covering various possible reasons—for example, the question “Toma, were you late because you couldn’t find something?” covered the possibilities that Toma was late because she could not find her backpack, her jacket, or her shoes. The other friend asked a question that tested one specific hypothesis, such as “Toma, were you late because you couldn’t find your jacket?” The children were asked to select the monster they thought would be the first to find out why Toma was late for school again—that is, the one who asked the most informative question. Across the four experiments, the researchers varied the frequency and likelihoods of the reasons presented for Toma being late.

Whereas previous studies have concluded that children prefer questions testing one specific hypothesis, these new findings show that preschoolers are already able to choose their questions strategically: They select different kinds of question depending on how effective they
are in the given situation, choosing the most informative one—the one that leads to the correct answer in fewer steps.

“In future studies, we would like to find out how we can help preschoolers to formulate effective questions from scratch, and which rules of thumb they use to assess the effectiveness of given or self-generated questions,” says Azzurra Ruggeri.

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