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The Hungry Mind
Keeping Kids Inspired and Curious
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It turns out that like many delicate plants, in order to flourish, curiosity needs to be cultivated. – Susan Engel

There is overwhelming empirical support for the idea that when people are curious about something they learn more and they learn better. Susan Engel is curious as to why this is so. A developmental psychologist in the Department of Psychology at Williams College, Dr. Engel is also the founder and director of the Williams Program in Teaching. In her book, The Hungry Mind: The Origins of Curiosity in Childhood, she clarifies the essential and beneficial role curiosity plays in preparing young minds for a lifetime of engaged learning.

CURIOSITY RESTS ON TWO PILLARS OF INDIVIDUAL DIFFERENCE

- Emotional Openness (Temperament)
- Intellectual Ability

Taken together, these two dimensions help us understand why curiosity seems so ubiquitous and adaptive in infancy, but then quickly begins to take on the characteristics of an individual as they get older. Intelligence and temperament come from within, are fairly impervious to outside influence, and quite stable. Curiosity is, by definition, a dynamic bond between a person's drive to know, and the environment around her. No matter how intrepid or eager for novelty, a child can wonder only about things he encounters. The mind must have a real world to figure out and explore. Our job is to present the world in a way that puts curiosity at the center and encourages children's natural eagerness to learn.

FOUR THINGS THAT INFLUENCE A CHILD'S CURIOSITY

- 1. Security** – A baby's eagerness to launch herself into the world around her hinges, paradoxically, on her sense of safety. She needs an anchor – and the anchor is, typically, her mother. Studies by psychologists Bowlby and Ainsworth found that babies who had the chance to form an attachment with a caregiver were dramatically different from those who did not. Human relationships are a key ingredient in the child's ability to investigate the physical environment. A series of experiments have shown that children with greater emotional and self-governing resources exhibit more curiosity as they get older.
- 2. Interest and Opportunity (and time alone)** – An early language environment is a strong predictor of school success. Children growing up in poverty hear far fewer total number of words, have a harder time learning to read, and ultimately are less likely to do well in school by the time they are in third grade. Studies show that the child who asks questions that get answered, and hears others asking questions, not only learns to ask questions, but also develops the disposition to wonder about things and to actively seek answers from others. Inside the classroom, children need access to books with good language and complex characters, fish tanks, terrariums, complex machines and gadgets and conversation about the unseen and unseeable. Outside the classroom, Dr. Engel stresses the importance of time spent alone, which gives children a chance to tinker, collect, read about things that interest them and explore their own thoughts.
- 3. Encouragement** – Studies have shown that as children get older they ask fewer questions and explore the physical environment less avidly. However, once everyday experiences become familiar, some children begin paying attention to subtler surprises and unexpected details. Between ages 3 and 11, children seem to either develop an appetite for knowledge and the habit of inquiry, or they don't. The difference lies, partly, on the adults in the child's life. In one study, the best predictor of the child's curiosity was the mother's curiosity – which showed a strong positive association. Parents' expressions of interest and pleasure in their children's behavior were positively associated with their children's attentiveness, active manipulation and information offering. Additionally, teachers, regardless of the age of the children, who smile and talk in an encouraging manner, create classrooms where curiosity is expressed. Conversely, studies also show that anxiety is a powerful moderator of exploration and teachers can be one source of such anxiety.
- 4. Role Models** – Teachers need to be curious themselves. A teacher's thirst for finding out should be evident in what he or she has done or in how he or she behaves. Sometimes a teacher has done research or spent years studying some topic or personal interest. Sometimes teachers' curiosity is expressed as an urge to know more about their students. Either way, the teacher who knows what the itch to find out feels like is in a better position to foster that itch in students.

CULTIVATING CURIOSITY

- **NOTICE A CHILD'S INTERESTS** – At a very early age, humans are capable of feeling particular interest about particular things. Moreover, children learn more when they have greater interest in the material. For example, the five year-old who becomes obsessed with dinosaurs becomes amazingly knowledgeable. Studies show that young dinosaur aficionados, when performing experimental tasks *using dinosaurs*, employed memory strategies that ordinarily seemed impossible for children their age. Teachers and parents need to notice what interests their particular students.
- **ENCOURAGE DISCUSSION** – Creating an environment that is friendly to conversation begins with noticing the children's conversations. A skilled teacher, listening to a conversation, could learn quite a bit about the specific curiosities of children. Noticing the questions children ask, and the things that stir their interest need not lead to specific curricula. Rather, by noticing what particular children are particularly interested in, and how they express their curiosity, teachers are likely to encourage it without any deliberate changes in the activities they introduce in the classroom.
- **FOSTER AGENCY** – Agency is a psychological state having to do with thinking about your own learning. Agency is the child's ability to act upon the world, guide and monitor their own learning and make decisions about what and how to learn. The purest example of intellectual agency is the child who wants to know something, knows she wants to know it and thinks about how to sate that curiosity. All of which begins with the child, rather than the adult, asking the question.
- **INVEST TIME** – Developing mature forms of curiosity takes time. In order to help children build on their curiosity, teachers have to be willing to spend time doing so. An example is Mr. C, the first grade teacher who kept a boa constrictor in the classroom. When he explained to the kids that they would have to feed the snake small rodents every week or so, a little girl named Beth asked (with a slightly anxious look on her face), "What happens to the mouse once it's in him?" "Good question," said Mr. C. "How could we find out?" "We could feed him a mouse, then cut him open and look," offered one of the other students. "We could, but then what would happen?" said Mr. C. "Rufus (the snake) would die." "Yes, so what else could we do?" Mr. C put the children into groups and invited them to figure out how to learn what happens to a mouse once it is inside a boa constrictor. The project ended up requiring thirty-five minutes on several successive days. They did not follow through on any of the plans. After several days of debating the various proposed methods of inquiry, they looked the answer up online. But the children had a memorable and extended lesson in planning how to get an answer to a difficult question.
- **CHOOSE COMPLEXITY OVER SIMPLICITY** – Children are as interested in complexity as adults. In one study, teenagers were given passages to read. Some of the passages were straightforward, with clear language and structure – they used 'transparent' language. Other passages contained more 'opaque' language – language that could distract a reader with the sound or connotations of the words or the way the words are put together. These opaque passages also contained ambiguous information – phrases that were unclear or details that didn't seem directly relevant. The researchers discovered that the teens remembered the complex, less straightforward passages better than the transparent ones. Books are not the only place students can find subtlety and opacity. In a classroom, it is the dynamic places that fascinate students – the places where unexpected and irregular things could happen, such as near the aquarium. Living things are always more interesting than inanimate objects. Playgrounds need to be natural, complicated and messy places to play. Several studies show that when children are exposed to natural environments with a lot of variety and detail, their subsequent learning is enhanced. Topics themselves need to be framed with mystery, controversy and uncertainty. Given a topic may not be of equal interest to all children, certain kinds of uncertainty can be built into the material in a way that incites curiosity and leads to better learning. The more unfamiliar a topic, and the denser with details its presentation, the more it may invite learning. Pulling items slowly out of a brown paper bag without discussion can pique a child's interest. Introducing a sense of drama and surprise into a classroom can transform a learning activity.
- **USE THE INTERNET** – Teachers can develop activities that invite or require students to figure out what they want to know and then seek answers. One way is by using the Internet. Children need to feel the satisfaction that comes from having the chance to satisfy curiosity and get information even when it is not in the service of a teacher-driven task, or one that will result in a grade.
- **WATCH, LISTEN AND LEARN** – Teachers need to watch themselves and count and categorize the number of questions students ask. They need to notice individual students' level of interest, the number of exploratory gestures students use when encountering materials or objects and the duration of each student's engagement with one activity. By counting questions, teachers can see how many occasions they created for students to figure out what they wanted to know – and pursue answers. Teachers can use the question-counting data to discover what kinds of things individual students are curious about, who asks lots of questions and who never asks even one.