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picturing time:

visual techniques for teaching the concepts of yesterday, today, and tomorrow

By Julia Weinberg

“Apple, apple, apple...red, red, red...” The sound of those words rang in my ears 16 years ago as I listened to our early intervention worker speak and sign them to Shana, my vivacious toddler, day after day, week after week, during home visits. Shana and I enjoyed these visits, but at times I felt so pessimistic. How would we ever have deep conversations about friendship, theater, and all the other topics that I daydreamed about sharing with her?

I began learning sign language immediately after adopting Shana when she was 7 months old, and she began wearing hearing aids by age 1. Like most other hearing parents of deaf children, I was faced with the challenge of learning a second language simultaneously with teaching it to my child, but I used speech and sign language with her as best I could. We participated in home- and school-based early intervention programs, and she subsequently attended a preschool for deaf children. Nonetheless, I could sense the growing gap between her active curiosity about the world and her delayed language development. I was determined to find a solution.

Today, Shana is a mainstreamed junior in high school who takes for granted that we will have long conversations into the night about her relationships, the books she reads, the theater we share, and, of course, her aspirations. Although I attribute my daughter’s progress to a number of factors, the first and most critical step was finding a way to ensure that she did not miss out on **incidental learning**.

A considerable amount of learning, especially in the early years, is incidental learning (Marschark, 2000). What is incidental learning? It is learning that occurs simply through exposure to our environment—what we hear, see, and experience. It takes place in the natural course of events, without intentionally directed instruction about how or what to learn (Calderon & Greenberg, 2003). For example, think about how you learned that grass is green at certain times of the year. You probably cannot remember learning that information because

Calendar photo courtesy of Julia Weinberg



you learned it incidentally, i.e., by exposure to green grass over some period of time. It is now well-established that background knowledge is a substantial factor in developing literacy, and the breadth of your child's background knowledge depends largely on incidental learning (Snow, Scarborough, & Burns, 1999).

Incidental learning includes factual information as well as abstract concepts such as categories, cause and effect, symbols, and time.

Hearing children have the opportunity to absorb the meaning of many abstract concepts after hearing or overhearing countless

repetitions of those concepts in the meaningful context of conversation (Levy & Nelson, 1994). However, deaf children of hearing parents do not have the same access to incidental learning due to more limited access to language, both spoken and signed (Calderon & Greenberg, 2003). Parents (and other adults doing caretaking) are

generally not fluent enough in sign language early in their child's development to go about their business and yet ensure that their children are exposed to these terms anywhere near the same extent as hearing kids. Sign language can't be easily parallel processed (despite peripheral vision), i.e., if the child is truly looking elsewhere or distracted, he or she won't absorb the terms. Early on, hearing parents aren't as skilled as deaf parents at communicating so that the juxtaposition of language and situation is maintained (Spencer, 1998). Similarly, even if the child begins to read speech and/or hears with aids, he or she is not going to catch every use of these words the way a hearing child would (Braden, 1994). Also, keep in mind that while hearing children can benefit from overhearing spoken language regardless of who is speaking, deaf children are often in the presence of people who are not even attempting to communicate with them effectively.

I asked myself why Shana's learning had to be held back by her delayed pace of language development. I feared that her intense curiosity would be slowly extinguished. Moreover, as a psychologist evaluating deaf children, I frequently detected behavioral health problems attributable in part to their impoverished language development, particularly with respect to abstract concepts about time and causation. If a child wants something to occur and cannot understand any concept more specific than "later," his or her frustration will eventually lead to passive, impulsive, or aggressive behavior.

Incidental Learning Doesn't Have to Be Incidental

I resolved to devise visual methods for my daughter and other children to engage in "incidental" learning about abstract concepts and background knowledge despite the impediment of



delayed language. I developed InSIGHT Visual Learning Strategies, which are visually based techniques that can be implemented by parents or teachers without elaborate training or special materials. These techniques afford deaf children the same benefit hearing children derive from incidental learning. For many years, I

have shared these techniques with parents in my psychology practice and also presented workshops to early intervention professionals and teachers.

I applied these techniques to the abstract concepts of *yesterday*, *today*, and *tomorrow*, which are concepts of **conventional time**, i.e., systems of time that our culture has created and which only have subjective definitions, making them difficult to teach directly (Friedman, 1978). Children generally learn these concepts through contextual experience accompanied or followed by spoken language. For example, research has demonstrated a relationship between mother-child conversations about future events and the development of young children's understanding of future time (Hudson, 2006).

In a nutshell, my approach creates simple, routine opportunities for exposure to readily available visual materials that represent a distinctive experience that the child had yesterday or today or will have tomorrow, accompanied by your use of the applicable spoken or signed word. These techniques for teaching time are based on two kinds of visual materials: photographs and calendars. Both types of materials lend themselves to presenting pictorial sequences. The child learns the abstract concepts for time through repeated exposure to these visual sequences, in a clear context, accompanied by language referring to the abstract concepts of *yesterday*, *today*, and *tomorrow*.

Photographs

This is the simpler of the two techniques, and the easiest to implement. This technique also lends itself to collaboration with your child's early intervention or school program. It is based on an experience that differed (by design) yesterday from today, and will differ tomorrow. You select the experience to photograph, or ask your child's teacher to photograph it. The experience could be one as simple as which color shirt your child wears. For

example, if your child wore a blue shirt yesterday, is wearing a red shirt today, and you ensure that he or she wears a yellow shirt tomorrow, the context will lead to learning the concepts of *yesterday*, *today*, and *tomorrow*. Each time this technique is used, you would show your child one, two, or three photos, signing and/or speaking the appropriate reference to time. The context, in which the particular photo could only be of one of those days, will lead to learning. Incidental exposure to such concepts in context is how hearing children pick up these abstract concepts.



Materials needed:

- Digital camera and printer OR
- Camera phone

How to use the photos:

1. Select the type(s) of experience you want to use in the photos, one your child would easily recognize. (See the list below for examples.) Keep in mind that you need to ensure that the experience will not be repeated over each of the three days, or that it will vary enough to be very distinctive without additional explanation or description. For example, if your child visited Santa Claus yesterday but your home is filled with decorations that show Santa Claus, the visit would not be a good experience to use.
2. Take photos yourself and/or ask your child's teachers to send photos home.
3. Find a brief quiet time to sit with your child, showing the photo(s) and signing/speaking the applicable time



designations: *yesterday*, *today*, *tomorrow*. Feel free to use only one or two, or even all three. For some children, bedtime is an appealing opportunity to look at these photos.

4. Repeat step 3 whenever you have another opportunity.

Examples of experiences to photograph:

- Clothes worn
- Special events (pleasant or not)—party at school, in bed sick
- Regular activities for fun—play activities at home
- People—relatives, baby sitters, play dates
- Foods eaten

Calendar

Visual techniques can also be applied to more complex concepts such as *sequence* and *organization*. Your child can learn from this calendar even before mastering language skills—it is not necessary to know spoken, written, or signed language, nor is it necessary to know the days of the week or months of the year. Like the photos described above, this calendar is designed around your child's actual experiences.

Examples of what can be represented on the calendar:

- School days
- Special events (pleasant or not)—party, in bed sick
- Regular activities for fun—play activities at home, playground, museums
- Visits to the doctor or other appointments
- People visiting or visited—relatives, baby sitters, play dates
- Foods eaten and/or restaurants visited
- Holidays
- Clothes worn

Materials needed:

- Large blank office wall calendar, with large spaces for each day and with pages that can be torn off easily—big enough to see from across the room
- Colored markers to use for simple line drawings
- Stickers representing various routine activities, special



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activities, medical appointments, holidays, interests (e.g., favorite toys or foods)

- Brochures and magazine pictures of activities, restaurants, and other community landmarks that your child has visited or will visit—use logos, objects, signs
- Small photos cut out that show the faces of relatives and friends

How to use the calendar:

Try to prepare materials ahead of time in batches so that you can use them promptly. Hang the calendar on a wall at your child's eye level in a location where your child will see it frequently, but also make sure that you can remove it easily to work on or to share with your child at a table or on the floor. Whenever you have an opportunity, refer to the pictures using the terms *yesterday*, *today*, or *tomorrow*. Try to make the calendar a fairly regular part of your daily routine. If possible, encourage your child to attach some pictures with your assistance. Even after the month has passed, save the calendar to enjoy later.

Once you get going, the calendar can be fun for your family to maintain. Avoid approaching this activity with rigid expectations of yourself:

- Do not concern yourself with neatness or artistic quality.
- Do not worry about consistency in representing every important event or in the way you represent something.
- Do not worry if you skip some days.
- Even if you don't represent something ahead of time, you can still do so after the fact.
- Remember, this is not a calendar you are using for scheduling.

When to Use these Techniques

There is consensus among developmental psychologists that the understanding of time concepts (although not the telling of time) typically develops between ages 3 to 6. Since the concepts of *yesterday*, *today*, and *tomorrow* are learned incidentally, the typical learning process takes place over a longer period than some other concepts. In other words, it occurs through

extensive, frequent exposure to adults' use of these terms in context. Although most toddlers won't develop mastery, they can begin to learn the concepts. Unlike some other concepts such as *truth*, concepts of time do have some physical correlates that a toddler can absorb from context even though a verbal explanation would typically be too convoluted. Since the objective of my techniques is to compensate in part for insufficient incidental exposure, it is advisable to begin as early as the child is capable of briefly attending to the visuals. However, remember, it is never too late to start.

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- Resource**
- Hyerle, D. (1996). *Visual tools for constructing knowledge*. Alexandria, VA: Association for Curriculum and Development.
- Source for Materials**
- Dover Catalogue is a good source for stickers.