Psicología y Educación: Presente y Futuro

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Teacher’s Discourse in the Classroom and the Development of Children’s Cognitive Skills

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The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates.

The great teacher inspires.

William Arthur Ward

Teaching and learning is a reciprocal process in which the teacher and students learn from each other. Research and child development theories suggest that a rich and engaging curriculum along with high quality adult-child interactions promote children’s cognitive and language development. When thinking is the foundation of students’ learning, and it is visible, children are better at developing habits of mind, learning how to learn, and self-regulating their emotions and behaviors. Consequently children develop executive functions that take control over their learning and life.

Adult-child interactions are vital to the cognitive, linguistic, and social-emotional development of the child. A teacher’s discourse in the classroom responds to the adult’s image of the child: the adult’s expectations of children as thinkers and learners. Teachers who value children’s thinking are most likely to engage them in good thinking and provide them with crystallizing experiences. The use of thinking routines promotes good thinking and enhance the learning experience. This presentation draws from Harvard Project Zero Visible Thinking framework to explore how adults can support, or hinder, students’ thinking. The presenter will emphasize the teacher’s discourse in the classroom, particularly the type of questioning used and implications for children’s cognitive engagement.

Keywords: Cognitive development, executive functions, questioning, visible thinking, Word-Gap
“El discurso del profesor en el aula y el desarrollo de las habilidades cognitivas en los niños”

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_El maestro mediocre indica. El maestro bueno explica. El maestro superior demuestra. El gran maestro inspira._

William Arthur Ward

El enseñar y aprender es un proceso recíproco en el que el maestro y los niños aprenden el uno del otro. Las investigaciones y teorías de desarrollo infantil sugieren que un currículo rico y motivador con interacciones de calidad entre el adulto y el niño promueven el desarrollo cognitivo y del lenguaje. Cuando el pensamiento es la base del aprendizaje de los estudiantes y se lo hace visible, los niños tienen la habilidad de desarrollar hábitos de la mente, aprender a aprender y auto-regular sus emociones y conductas. Consecuentemente, ellos desarrollan funciones ejecutivas que tomarán control de su aprendizaje y su vida.

Las interacciones entre el adulto y el niño son vitales para el desarrollo cognitivo, lingüístico, y social emocional del niño. El discurso del maestro en el aula responde a la imagen que él tiene del niño, incluyendo sus expectativas sobre el pensamiento. Cuando el maestro valora el pensamiento de los niños, él los envuelve en pensamiento de alto nivel y les provee experiencias cristalizadoras. Para Howard Gardner, una experiencia cristalizadora ocurre cuando el niño hace conexiones con algo que involucra su curiosidad y estimula su exploración. Esta presentación surge de investigaciones sobre marco de Pensamiento Visible de Proyecto Cero de la Universidad Harvard y los Hábitos de la Mente como base para explorar cómo los adultos pueden promover o inhibir el pensamiento de los estudiantes. La conferencista enfatiza en el discurso del maestro en el aula, particularmente, el tipo de preguntas que utiliza y las implicaciones en la actividad cognitiva de los niños.

**Palabras claves:** Funciones ejecutiva, pensamiento visible, hábitos de la mente, desarrollo del pensamiento, brecha de palabra.
Teacher’s Discourse in the Classroom and the Development of Children’s Cognitive Skills

A four year-old girl was honored as “Student of the Month.” When her grandmother asked her what she had done to earn this award, the girl answered, “I don’t talk.” This story provokes several questions: Where is wonder? How do adults (teachers and parents) promote or hinder students’ thinking? Do we really teach thinking? What are the benefits of thinking in children’s learning and life? Although humans are born with a natural capacity to think, the social environment plays a critical role in nurturing children’s thinking. For Vygotsky (1978) children grow into the intellectual life of those around them. Later research (Snow, 2003, The Economist, 2014) suggests that experience in the early years and the number of words that the child has in his or her vocabulary determine academic success and IQ later in life. Word-Gap research (Hart & Risley, 2003, Snow, 2003) shows the difference between children from low-income homes and their more economically advantaged peers in terms of vocabulary development and later success in school and life. Minimal and poor quality adult-child interaction along with less life experiences create a word gap. The problem is not asking adults to talk to children, but having something to talk about. The result of poor or low quality interactions with adults and experiences is a limited vocabulary. This research provides powerful insights to rethink curriculum and adult-child interaction.

Teachers need content that will elicit diverse language and complex language structures. Teachers can create cognitive engaging experiences by selecting thoughtful, meaningful and generative topics and maintain a high-quality discourse in the classroom. The teachers’ discourse in the classroom is characterized by adult-child interactions that provoke thinking and generate the desire for children to talk about the world. Meaningful experiences in everyday classroom experiences enhance cognitive development and thus language development.

The interplay between language and cognition draws our attention to opportunities that nurture children’s thinking and learning. When adults nourish children’s thinking, children naturally develop language.

I focus on the teacher’s discourse in the classroom, highlighting the importance of quality child-adult interactions, and the benefits of a cognitive, engaging and meaningful curriculum that provides children with learning experiences that provoke conversations between children and adults. I find Ritchhart’s typology of classroom questions (2016) powerful to create teachers’ awareness of their discourse in the classroom. I also briefly discuss the elements that determine a high-quality curriculum and visible thinking, a research-based approach that developed strategies to cognitively engage children in thoughtful and meaningful conversations for deep understanding. The readers will learn about a few strategies that scaffold higher-order thinking, thus, language development in young children.

Teacher’s discourse

In their discourse, teachers often reflect their image of the child; their expectations of children as learners determines the quality of their discourse in the classroom and learning experiences. In an action research project that I conducted with a group of practitioners who were my graduate students (Salmon & Pane, 2013) students reflected on their shifts in their discourse in the classroom and children’s responses. In her reflective journal, one of my students wondered, “How can teachers teach students how to think if they are not thinkers themselves?” Thinking about thinking is a critical element in the teaching and learning. This metacognitive perspective will help teachers understand how children think in order to scaffold children’s thinking and learning. When children know the type of thinking they use to learn, they are learning to learn. For Perkins (1992), learning is a consequence of thinking, therefore the curriculum and pedagogy should be designed with thinking in mind. Questioning is an important way of thinking. For Perkins (1992), quality questioning advances both students’ and teacher’s thinking. Good teaching is about finding the right questions.
Reflection is another important way to develop and maintain high-quality adult-child interaction. It is important for teachers to continuously revisit their image of the children and document their interactions with them. After reflecting on her discourse in the classroom, another graduate student (Salmon & Pane, 2013) recognized that a shift in her discourse in the classroom better supported her students’ learning. In her story of learning she said, “My expectations of the students have changed and they are able to live up to this expectation.” I have many similar documented experiences and reflections, which call us to reflect on the teacher’s questioning in the classroom.

Harvard Project Zero Visible Thinking is a research-based initiative that provides educators with resources and thinking strategies, called “thinking routines,” to engage students in deep thinking (Ritchhart, 2015). He identifies five types of questions in teacher’s discourse:

- Review: Recalling and reviewing of knowledge and information (terminology, procedures, content);
- Procedural: Directing the work of the class (going over directions and assignments, clarifying, checking for attention, task completion, etc.).
- Generative: Exploring the topic (authentic questions or wonders that teacher doesn’t know the answer to, essential questions that initiate exploration of a topic).
- Constructive: Building new understanding (extending and interpreting, connecting and linking, orienting and focusing on big ideas, evaluating).
- Facilitative: Promoting the learner’s own thinking and understanding (requesting elaboration, reasons, evidence, justification, clarifying and uncovering, perspective taking)

Like Ritchhart (2015), I noticed that classrooms are dominated by “review” and “procedural” questions. For the latter (2015) if we want students to have richer and more thoughtful experiences, teachers should use more “generative,” “constructive,” and facilitative questions. I frequently see how teachers working with young children spend a significant time of the day, mostly during circle time, using review and procedural questions that disengage children and without any quality learning.

In a study of teacher’s discourse (Salmon & Barrera, in review), my research team used Ritchhart’s typology of questions to engage a group of teachers in action research. We provided coaching with special attention to these questions during adult-child interactions. We documented these interactions and periodically invited the teachers to reflect on their discourse. The teachers recognized a strong connection between their image of the child and the type questions that they were asking. Initially, since the children were young, the teachers’ expectations were low, so their questioning remained in review and procedural. As they began to review their curriculum and plan the use of thinking strategies, the children surprised the teachers with unexpected answers. The teachers then changed the curriculum that generated puzzling questions and ideas that were later supported with generative, constructive and facilitative questions from the teachers’ side. In this new story, the children were highly engaged and constantly elaborated complex ideas.

Quality Curriculum

Children are curious by nature; they enter the world ready to engage. In his poem, “The Hundred Languages of Children,” Malaguzzi (in Edward, et al. 2011) points out that children are born with an incredible capacity to question, see the world from many perspectives, and explore the world in many ways, with a hundred hands, thoughts, and ways of thinking, playing, and speaking. Malaguzzi finished his poem saying that the child has a hundred languages… but adults steal 99.
It is critical to revisit our role in children’s lives and be alert when we interfere with children’s thinking, creating a box that prevents them from following their natural and creative instinct to learn. So let’s think of crystallizing experiences. For Gardner (1983), a crystallizing experience is when the child connects to something that engages curiosity and stimulates further exploration.

A quality curriculum creates opportunities for children to be engaged. Engagement happens when children are actively involved in meaningful experiences. Neuroscientist Immordino-Yang (2016) claims that we come to the world with predispositions and ready to make meaning; the meanings we create are shaped by our culture. We learn from information that has cultural relevance. For that reason teachers should shape the curriculum from an appropriate social, cultural and developmental perspective. It is important to ask ourselves what we want children to understand by the time they are ready to take the lead in the world. For Perkins (2016), a fundamental question is “What is a life-worthy learning?” What learning really matters for today’s learners? Perkins recommends that we focus on learning that matters and reach for big understandings. Cognition, emotions, and language are interdependent. Life-worthy learning is meaningful for children but it is not only the content that matters, but also how teachers engage children in questioning, understanding, and innovating.

Returning to my introductory discussion of Word-Gap, Snow (2013) maintains when content is well designed, language will take care of itself. Curricular topics that are good, solid, and powerful are the ones that engage children. When children are curious about a topic, they will ask questions, formulate hypotheses about the world and solve the problems that they encounter.

Cognitively Engaging Strategies

The art of teaching requires teachers to be creative not only in providing children with rich and cognitively engaging opportunities, but also when scaffolding their thinking into new directions. The Visible Thinking initiative provides teachers with research-based strategies, called “thinking routines.” The thinking routines are easy-to-follow strategies, they are goal-oriented to provoke different types of thinking in children. Thinking routines are powerful because they create zones of proximal development (Vygotsky, 1978). For example, a see/think/wonder routine asks children to slow down and observe an image, after uncovering children’s prior knowledge connected with an image, they are asked to think (predict, hypothesize, imagine) about the image, then they are asked to wonder what they interpret and think, beyond the seeing. This is just one of many thinking routines that also help teachers engage their students cognitively. In this way, adults can use information from children’s ideas as indicators of what they should be talking about. In my practice I always see how children benefit in many ways from x, y and z, especially children who don’t speak the language, are introverted, and children with autism. Just by asking what do you see, children share knowledge from different experiences; this helps children develop vocabulary as they name objects.

Another thinking routine is a simple question: What makes you say that? This routine encourages children to reason with evidence. When children’s thinking is pushed, they need to explain their thoughts. This type of experience also provokes the need to use vocabulary to externalize their thinking. The thinking routines, like the ones shared above, help teachers enhance their curriculum and help them produce generative, constructive, and facilitative questions. They help children dig deep into understanding life-worthy topics.

Conclusions

Word-Gap occurs when children do not have enough exposure to language because adults have a hard time finding a conversation due to their own limited life experiences. If we want the early childhood settings to be places where there are ample opportunities to learn, then we will have to think about instructional quality that present chil-
children with opportunities to learn about the world. Instructional quality is often the big challenge. In order to prevent Word Gaps in school, educators should give children every chance to be curious, creative, and innovative. Creativity is a step on imagination and innovation. Children who are curious drive their own learning and are intrinsically motivated. Thus, when education helps children take control over their learning, children develop executive functions, a key element for self-regulation and resilience.

High quality teacher’s discourse and an engaging curriculum can close the Word Gap in early childhood classrooms. In a well-designed curriculum, teachers will have material to talk about. In addition, high-quality teacher discourse will flow smoothly if teachers are responsive to children’s communicative efforts, their past knowledge, questions, and imagination. Children need the opportunity to understand their world and be prepared for the kinds of lives they are likely to live. Perkins (2016) states that it is important for children to develop self-understanding, empathy, ethics, collaboration, and good thinking.

Talking to children in productive ways presupposes listening to them. Teachers should be reflective about the characteristics of high quality teacher talk and reflect on how to incorporate constructive and facilitative questions.

In conclusion, a high-quality curriculum, visible thinking strategies, and the use of generative, constructive and facilitative questions are critical to promote children’s thinking and language development. Good practices accompanied by coaching and teacher reflection are essential to improve the quality of teachers’ discourse in the classroom and therefore will lead to higher outcomes in child and language development.
References


