

## **FLIPPING THEORY: WAYS IN WHICH CHILDREN'S EXPERIENCES IN THE 21<sup>ST</sup> CENTURY CLASSROOM CAN PROVIDE INSIGHT INTO THE THEORIES OF PIAGET AND VYGOTSKY**

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### **ABSTRACT**

Although established in the last century, the theories of two well-known psychologists, Jean Piaget and Lev Vygotsky continue to be used throughout the world to prepare teachers and caregivers of young children (ACEI/Wortham, 2013). From an historical perspective, their theories provide insight regarding children's growth, development, and learning. Beyond a general understanding however, in what ways do the theories of Piaget and Vygotsky impact 21<sup>st</sup> century pedagogy, and what might the implementation of those theories look like in today's classrooms? Observations of children's experiences in two constructivist oriented classrooms help to provide connections between practice and theory. One classroom draws upon the work of Charlotte Mason, a pioneer of early childhood education in the late 1800's and early 1900's and considers the relevance of constructivist education as children examine themselves and develop high moral standards. The second example provides examples of constructivism from a more traditional kindergarten classroom, but one where a teacher uses principals of constructivism to guide developmentally appropriate practices for young children. The purpose of this article is to show how using examples of practice in early childhood classrooms can provide the means for learning about theories of learning and development. Rather than professors using practice to help students understand abstract theory, we flip this pedagogical practice to show how theory can be used with intentional reflection to help teachers understand the practice they see in their classroom. Recommendations for preservice and in service teacher education are provided.

**Keywords:** practice, theory, Piaget, Vygotsky, constructivism

### **INTRODUCTION**

In a small community school nestled within a larger metropolitan city, constructivism looks, and sounds like many open-ended questions accompanied by gentle guidance aimed towards helping children find their own solutions to real world and academic challenges. Children are in multiage classrooms, with one teacher per approximately eight to ten students. In addition to their primary teacher, some students change classrooms throughout the day so that they can participate in discussions on each subject at their individual developmental level. The school follows the principles of Charlotte Mason who believed that children are born with all the curiosity they will ever need and that it will last a lifetime if they are fed upon a daily diet of ideas (Mason, 2008). The teachers at this intimate school are helpful and provide guidance by asking questions that

encourage imagination and the construction of knowledge. An “I don’t know...” question from a student is often met with, “Let’s think about what we do know about this topic and see if we can figure out...” (1<sup>st</sup> grade teacher, 2017).

Students in constructivist themed classrooms are empowered to find their own solution among many acceptable options. Students are given time to work at their own pace, and answers are not simply right or wrong; students are asked to explain the thought process that lead to the answer given. Self-correction, when needed, is not only accepted, it is encouraged. Students are also given many opportunities throughout the day to hone their auditory processing skills and express themselves orally as they retell parts of stories or passages read aloud from books on selected topics. “I wonder..., I notice..., it reminds me of...,” are phrases that invite discussion and encourage active participation and exploration of ideas.

Within a community of learners, Piaget’s belief that children construct their own knowledge, and should be supported in the development of moral and intellectual autonomy, peacefully coincides with Vygotsky’s views on the impact and importance of culture, as well as scaffolding provided to children to help them learn more than they could on their own. The teachers’ philosophic beliefs regarding the importance of autonomy can be seen in the way in which they reflect on the children’s actions and communications, and support the children’s development of both intellectual and moral autonomy. Additionally, a blend of children from various ethnic, religion, and socio-economic backgrounds speaks to a cultural appreciation at the familial level, leading to an acceptance that spreads throughout the school community, positively impacting the growth and development of children.

On the other side of town, within the walls of a kindergarten classroom in a moderately-sized suburban elementary school, constructivism is also evident in the interactions between the children and their teacher. Questions such as, “I wonder what will happen next in this story? What can you tell me about this picture? What might they be doing?” help children to think more completely about their responses. Children are also encouraged to talk about things that they “notice.” Child: “I noticed that the pattern [of the text] changed.” Teacher: “That is right! Can you tell your friends what you noticed?” Following the child’s verbal observation, the teacher expands the explanation to reinforce the use of recurring pattern and repetition in the story.

During a review of the monthly calendar we see the same process of child action and communication followed by teacher reflections and action. The teacher asks, “What number should be written next? Who agrees? Anyone disagree?” The discussion shifts to determining how many days they have been in school. “How did you get that answer? Does everyone agree? No, show me how you arrived at your number. Hmmm, I see what you were doing. Now that you have counted again, would you like to change your answer?” The teacher explains, “I want my children to know that our classroom is safe. We may come up with different answers to questions,

but we can work them out. Changing our minds to a different answer is always acceptable.” Through the exchange of viewpoints and opportunities to explain and defend their thinking, children are supported in the construction of knowledge and development of moral and intellectual autonomy.

### **Children’s Experiences and Teacher Reflections**

In both school environments children were expected to derive their own answers in all curriculum areas, frequently supported by both peer and teacher scaffolding. Children often worked collaboratively to solve problems, which was very helpful when working on math concepts in particular. During mathematics instructional time, children frequently explained concepts that were not readily understood to their peers; sometimes they sought the guidance of the teacher. If numbers were written backwards, questions such as, “How can you fix that?” were asked and children were given the opportunity to reflect on their answer, consider how it might be incorrect, erase, and re-write it. The understanding of concepts was verified through supportive questions from the teachers such as, “Tell me how you thought about that....”

During literacy learning, children were encouraged to write and to create stories with illustrations. Phonetic spelling was supported so that the focus was on the story itself. Children took turns presenting their stories to their classmates and the questions and suggestions offered from their fellow students provided another avenue for peer scaffolding. Within the time allotted for teacher planning, as well as within the classroom setting itself, teachers were in a continual process of reflection, in an effort to better scaffold children’s learning. Both settings provided multiple examples of theory meeting practice, resulting in more refined and intentional responses from the teachers in an effort to support children’s learning and development.

### **Integration of Theory and Teacher/Child Interactions**

Although Piaget is often remembered for his initial work describing developmental stages (Lourenco & Machado, 1996; Piaget, 1964/1972), and Vygotsky is associated with the concept of the zone of proximal development (Vygotsky, 1934/1978), the theories of both men are much deeper and broader; and many ideas from both Piaget and Vygotsky have direct teaching implications. Reflecting on the experiences of the children in the two classrooms described above provides a unique opportunity to explore the theories of Piaget and Vygotsky in greater detail. With the flipped theory idea, an alternate teaching strategy is to use child observations with teacher reflections and integration of theory to better help teachers and caregivers provide guidance in the classroom (see Figure 1).

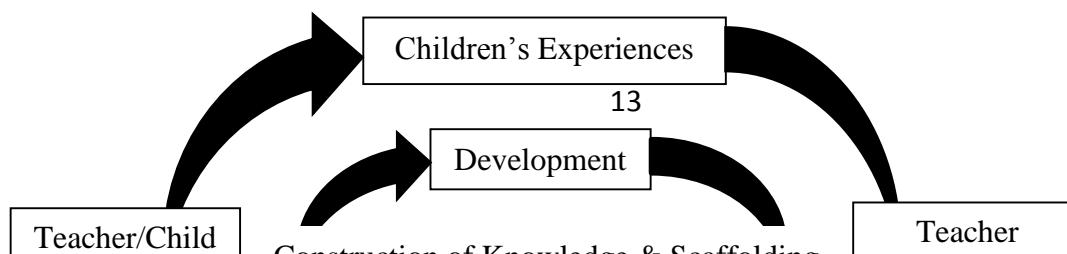


Figure 1: Intentional teaching: relationships between pedagogy and theory

In a discourse entitled *Development and Learning* (Piaget, 1964, 1972), Piaget discusses two types of experience: physical learning through direct interaction with objects, and logical-mathematical learning that results from actions taken upon objects. Multiple opportunities for both of these types of experiences existed in the observed kindergarten and first grade classrooms. For example, activities such as building with blocks, creating with art supplies, and role playing with costumes and props are among the multiple ways children have opportunities for physical experiences. Blocks became roads and bridges which sometimes had to be rebuilt resulting in the children understanding more about the importance of balance. Children also had logical-mathematical experiences in the classrooms as they used things such as dominos, die, and number/picture cards for opportunities to construct the idea of number and the concepts of addition and subtraction.

Within these classroom examples, some children would be classified by Piaget as being developmentally in the pre-operational stage; whereas, others would be classified as entering the concrete operational stage (Piaget, 1964, 1972). During a math game designed to help children think more about the concept of “one more” and “one less,” the children used cards with both numerals and picture symbols to represent numbers from one to ten. Upon choosing a card, some children appeared to immediately recognize the number and proceeded to add or subtract according to the rules of the game.

From a Piagetian standpoint, these children have constructed the idea of number and therefore are demonstrating skills present at the concrete operational stage. Others in the class, however, appeared not to recognize the number on a card and counted the pictures below to determine the number's value. These children would be classified as being in the pre-operational stage. Interestingly, the children in the pre-operational stage were observed to draw multiple cards with the same number, and each time they counted the pictures at the bottom to determine the value of

the number, further illustrating a pre-operational level of reasoning. The distinctions in the stages of thinking, perceiving, and reasoning were also demonstrated when children used their fingers to help them solve a mathematical problem. When asked to show “6,” children who had already constructed the idea of number responded by extending all five fingers on one hand and one finger on the other hand. When asked the same question, children who had not yet constructed the idea of number counted all the fingers on one hand before moving to the next to determine how many fingers to extend. The teacher’s intentional questions and flexibility in allowing children to use items such as their fingers or counting markers as they constructed number concepts underscores important connections between theory and daily classroom practices.

The teachers’ intentions to encourage constructivism and social learning also included oral and written language expression. The children varied in their abilities to recognize words and to read with fluency. Literacy development was supported through best practices such as read alouds with teacher modeling think alouds, shared reading, retelling, book choice, paired reading, and independent reading. Additionally, the children each had their own book box that they filled weekly with a combination of books that were on their independent reading level, as well as those that were more challenging and on an instructional level. During free choice reading time the children selected books from their book box to read with a friend. If a child came across a word that he/she did not know, often their partner could help them figure it out. The teacher also used this time to work one-on-one with children to scaffold their emerging reading skills. Working together, either with another friend or the teacher, children were able to function developmentally at a higher level than they could independently. Vygotsky described this concept as working within a child’s zone of proximal development (ZPD).

Vygotsky’s ZPD concept has profoundly influenced education, and when applied to a child’s individual performance, ZPD assures the child is learning in his/her true comfort “zone,” the one in which learning is most likely to occur (Gambrell, Malloy, & Mazzoni, 2014; Kozulin, Gindis, Ageyev, & Miller, 2003; Lyle, 2000; Manning, Manning, Long, & Wolfson, 1987). This foundation for literacy best practices begins by observing each child, determining what she already knows, recognizing her strengths, and meeting her right where she is (Allington, 2005; Clay, 2014, 2015; Vygotsky, 1962).

Listening to the conversations around the tables as children worked on their math assignments provided a unique opportunity to also observe aspects of children’s language development. Children talked with each other, if for instance they needed an item that was out of reach, or perhaps if they had a question about a particular problem. Additionally, children talked to themselves, conversing out loud but without expectation of a return answer. This second type of speech was labeled by Vygotsky as egocentric, strictly for one’s own purposes (Vygotsky, 1929). Vygotsky further hypothesized that although in general the transition from egocentric speech to inner speech takes place when the child enters the social school environment, when children are

faced with difficult situations their egocentric speech increases (Vygotsky, 1962). This was readily observed in the classroom when children were faced with completing math problems that they found challenging. The teacher's reflection on this process and integration of theory was reflected in the intentional way in which both the learning environment and the type of experiences provided, afforded the children opportunities to construct knowledge for themselves.

### **Letting the Children Guide Instruction**

Constructivism as observed in the two school settings extends beyond traditional academic subject areas into the domain of social-emotional development and behavioral self-regulation. There are no external behavioral management strategies, such as the use of charts, within the classrooms. The children are encouraged and guided by the teachers to work out their differences on their own. For example, a group of four children had a disagreement regarding which pair had laid claim first to a coveted study area in the classroom. The teacher monitored their discussion from a distance and permitted them to resolve their own conflict, rather than settling the disagreement for them. Additionally, there are natural consequences for actions, rather than teacher imposed punishments, and children are encouraged to discuss differences of opinion respectfully and directly (Albaiz & Ernest, 2016).

When necessary, guidance is provided in an effort to clarify communication between the students so that they can resolve potential conflicts before they escalate. In one such instance the teacher stopped a class discussion about a book they had been reading when she noticed that two children in particular seemed to be having a conflict. As she asked questions to gain a better understanding of the situation, she began to sense that one child had misunderstood something another child had said. She provided an opportunity for each child to express his/her point of view and offer clarification as necessary. Encouragement of this kind of dialogue between students, results in peaceful classroom environments filled with children who are empowered to solve their own difficult issues. From a Piagetian standpoint, the behavior management strategies and manner of dialogue between teachers and children demonstrate the support provided towards children's development of moral autonomy (Kamii, 1984; Piaget, 1959). In contrast with some of Piaget's experiments wherein children were asked to give an opinion based upon two invented stories, the situations in these classrooms arose organically, thereby giving children an opportunity to construct moral autonomy for themselves.

In many of today's classrooms, a concerted effort is made to globally support cultural diversity. Vygotsky not only recognized vast differences between nations, he saw the importance at the local and familial level (Vygotsky, 1934/1978). In regard to self-regulation and the construction of moral autonomy, the perspectives of Piaget and Vygotsky are critically important. One's perception of ideas that are morally right are both constructed from a Piagetian perspective, and, fundamentally influenced by one's familial, social, and national culture, from a Vygotskian perspective.

## **Applications for Intentional Teaching and Connections to Theory**

Multiple observations from both constructivist oriented classrooms illustrate connections between pedagogy and theory. The teachers' understanding, embracement, and incorporation of Piaget's and Vygotsky's theories results in intentional teaching practices that support children's construction of knowledge and development of autonomous thinking. The teachers use of "I wonder," and, "it reminds me of..." language invites children to look more deeply for connections, relationships, and ways to solve difficult questions or challenging situations. Applications for intentional teaching practices can be seen across the curricula when, for example, open ended questions such as, "Tell me how you thought about that..." are followed by extended pauses to provide ample time for children to think about, and then explain, the thought processes that led to their answers. This type of exchange elucidates children's level of understanding, and provides beneficial insight so that additional experiences can be offered, as necessary, to further support children's construction of knowledge in the various content areas.

Rather than a one directional relationship between development and learning, Piaget's and Vygotsky's theories often complement each other and together provide a more encompassing view of development and learning. From Piaget's perspective, development is tied to embryogenesis and precedes learning (Piaget, 1964/1972). Piaget's theories regarding children's construction of knowledge within each of his identified four stages of development, sensorimotor, pre-operational, concrete operational, and formal operational, as well as the development of moral and intellectual autonomy, provide a solid foundation for the pedagogical intentionality demonstrated in today's constructivist classrooms. From Vygotsky's perspective, learning precedes development (Vygotsky, 1934/1978). Through social interactions with peers and adults, and scaffolding supports, children are guided to discover or learn skills or concepts that they could not yet have learned alone; the end result of which is a new developmental level.

When teachers use intentional reflections to observe in the classroom, children can be encouraged to work in pairs or groups, as necessary, to support learning objectives. Whether children are engaged in a difficult math problem, or reading a challenging book, what is difficult for one child becomes a teaching opportunity for another. In these 21<sup>st</sup> century constructivist oriented classrooms, the theories of Piaget and Vygotsky can be seen to work well together (Piaget, 1962). Constructivist experiences can be the foundational elements grounding children's experiences with teacher reflection, integration of theory, and teacher/child interactions. When children are taught in such a way that they become self-governed and cooperative (Albaiz & Ernest, 2016), then children develop "a love of learning and self-discipline" (Kamii, 1982, p. 86).

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