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Sitting Down with Connie Kamii

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Those who attended the ACT conference in Virginia in October, 2003, had the opportunity to hear Dr. Constance Kamii deliver the keynote address on the first day. Dr. Kamii spoke of Piaget's unique contributions to education. Her perspective on Piaget's work is distinctive because of the years she spent in Geneva working with Piaget. Educators worldwide look to Dr. Kamii as a leading expert in the field of constructivist education. I was privileged to sit down recently and ask a few questions about her research and her ideas about the world of education today.

KR: In a constructivist classroom, the teacher bases instruction on the scientific research of Piaget. If a person spends time in a constructivist classroom and a traditional classroom, what differences would be observed? In the students? In the teacher? In the social atmosphere?

CK: In a traditional room you would probably see neatly arranged desks, neatly obedient children, probably lots of worksheets. That keeps kids very neat and quiet and well behaved. In a constructivist classroom you will probably see lots of movement, if not noise, especially when they play games. (The students) will certainly be talking a lot and arguing back and forth. Their opinions will be asked, and the kids will challenge each other. There will be lots of spontaneity and what I like to see, but it's hard to produce, children who are thinking. Thinking takes various shapes, and arguing is one way. You also see children who are deeply involved with trying things out with their hands or some other thing. You can tell when children have an empty head and an empty expression and when they are really thinking. That's what I like to see, and that's what I often see in a constructivist classroom.

KR: After you completed your doctoral work, you went to Geneva, Switzerland. I happen to know that this was more than a trip to the place of your birth. Could you talk about that?

CK: Why did I go to Geneva? I was in preschool education. This was for compensatory education to help teach low-income children, and we knew that we were looking for a better cognitive foundation than what they usually come to school with and yet in terms of classroom education, I just could not figure out how to conceptualize objectives, so I literally spent a year going through every piece of library material I could find about preschool education methods and also psychologists' research about classification, etc., etc., and I could not come up with objectives for preschool education. I wanted to go beyond the vague objective of cognitive development, and Piaget was not directly useful, but that was the only thing that I could find that gave me some hope of finding something. That is why I started to study Piaget's theory, and then I went to Geneva to hear this guy. I was surprised that I caught his last lecture, and I could understand what he was saying whereas I had been reading his books and they were impossible to understand. That's when I found out that written Piaget is one thing, and spoken Piaget is something else. That's where I made up my mind that I wanted to study under him, so that's how I got there.

KR: How long did you stay?

CK: I stayed for a year, and then three years later I went back for another year, and that was not enough; so I stayed for another year. I ended up going back and forth for 15 years all told.

KR: If you had not made that trip to Geneva, not studied with Piaget, how would your life be different today?

CK: I was at that time very much interested in improving the educability of children of low-income African-American families. I firmly believe in public education and I think that for lower class minority kids education is the hope, and yet I also knew that education was not reaching those children, and so I would probably have stayed in that realm but with the usual fluff that educators are doing or had been talking about. Those tend to be very specific and isolated, and that is still the battle that I'm fighting now. There are standards now for preschool mathematics, and those consist of specific things like teaching children how to count, how to sort things – the red things, the blue things the circles and the squares-- and manipulating geometric shapes, get in line first, second, in front of, in back of, etc. These are very specific things. That's how preschool math educators think, and that's not cognitive development in my opinion. Cognitive development is much richer, much deeper, much more complicated than these itty-bitty things, one thing after another. That's probably what I would be doing (had I not gone to Geneva to study with Piaget).

KR: Piaget is best known for his conceptualization of four stages of development: sensorimotor, preoperational, concrete operational, and formal operational (Campbell, 1976). What is the most misunderstood aspect of Piaget's work?

CK: I think there is a whole mystique to think of Piaget's theory as a maturationist theory. In other words, when children are seven, concrete operations are believed to kind of flower and unfold, and when they get to be sixteenish, formal operations unfold. I think that's the most misunderstood thing. It is a misinterpretation. Plus, I would say that I don't know many people who even understand conservation. (Conservation refers to "our ability to deduce, through logical reasoning, that the quantity of a collection remains the same when its spatial arrangement and empirical appearance are changed" (Kamii, 2000, p. 6). There are lots of textbooks about Piaget's theory and developmental psychology in general, and when I see a new one, I always go to conservation, and usually it is wrong. Usually the authors don't know about logico-mathematical knowledge or that there is a difference between logico-mathematical knowledge and physical knowledge. They don't even know that, so they cannot possibly understand conservation. (Piaget distinguishes between three types of knowledge. Social knowledge is knowledge that has been created by people. An example of social knowledge is the knowledge that American Independence day is celebrated on July 4th. Physical knowledge is knowledge of the physical attributes of objects. The color and weight of an object are physical knowledge. Logico-mathematical knowledge are the relationships that are formed by individuals in their own minds. Noting that there is a difference between a red ball and a blue ball is an example of logico-mathematical knowledge. The difference does not lie in the balls. The relationship is formed mentally by the observer (Kamii, 2000).

KR: Schools of education have come under fire recently. What could be done to improve teacher education?

CK: To improve teacher education, I think the best education is to have future teachers in the classroom to begin with and to have them generate questions about certain problems and what to do with certain problems and to start reading and teaching from those questions. I think that what is wrong, at least from what I have seen, is that generally (students of education) are now stuffed with words and theory and so teachers come out thinking that theory is irrelevant and useless. They are going through these theories without relationships to the classroom situations, and so all that means nothing whereas if they generated their own questions and were then sent to theories, education would be much better. On the contrary, future teachers are often told good, useful principles, and they go into public school classrooms and see flatly contradictory, bad practices. That is the reality of teacher education. Schools of education tend to be much more theoretically advanced than the usually awful classroom situations. (Future teachers) have to be very lucky to end up in a constructivist classroom for student teaching. Those things should be improved, but that is much harder to do in reality.

KR: What words of encouragement could you offer educators in our "test happy" environment?

CK: There is just no end in capitulating. If your score gets higher, the principal is going to want higher and higher scores. All that for whom? Not the kids. My recommendation is: Do what's best for the kids.

KR: What is your latest area of research?

CK: I am doing two things. One is baby stuff – the development of logico-mathematical knowledge in physical knowledge activities. I am working with day care teachers in Japan. In playing with objects making an incline with a block and a board, and then imitating the teacher who rolls down a cylinder at age one, two and three and how they improve in this imitation. They make better and better relationships, and these relationships are interrelated. As they make progress in spatial reasoning, they make better categories, and that is what I am trying to prove. Those categories do not come out of those stupid sorting tasks.

The other thing I am working on is why "length times width" is hard. It is now taught in fourth grade, but I can get you the data to show that it's too hard in eighth grade and ninth grade regular math sections. The only kids who can do these things are the eighth graders and ninth graders in advanced sections. All of this is related to formal operations. Piaget says, for example, if you show squares to do "length times width", that's super easy, and that is how kids are taught now.

If the rectangle has a grid inside and kids are asked what is the area of this rectangle, it is only about 60 percent of seventh graders who can give you the right answer. All they have to do is count those squares, and they can't do it in seventh grade. The question is why can't they do it, and Piaget is the only one who offers an explanation about it. He says that those squares are easy to do multiplication with, but area is not those discrete objects. Discrete objects are easy. Discrete object conservation is easier than continuous quantities, and he says that to understand area, you have to understand why one uni-dimensional continuous quantity times another uni-dimensional continuous quantity results in two dimensional space and to be able to understand how this two uni-dimensional thing results out in a surface you have to be able to understand the infinitely close parallel lines without which you just cannot think about surface area out of two linear measurements. Nobody has seen infinity. Formal operational kids can think about it, and that is why only the advanced kids can understand that stuff. That is what I am working on.

KR: What topics would you like to investigate but have not?

CK: I have an endless amount of things. I am continuing that research that showed that to get children to be fluent in subtraction, you have to get them to be fluent in addition. That is the research that I did in a constructivist school, and now I want to go to a traditional school where the teacher has demanded worksheets and "facts", and I bet we will get the same results even if you insist on memorization. That is my hypothesis. My other things that I would like to do are estimates. Kids cannot estimate, and estimates are very unnatural for kids. That is what I would like to prove. Elapsed time is very hard, teachers have told me, so I want to study that so elapsed time would not be required on tests. Kids have trouble dealing with coins, too. That is the list I have for now. I always have a list.

References:
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