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The new school year opens with the instructor cheerfully announcing to the students on the first day, "Good morning, class! Welcome to the fun of a new language called *algebra*". He continues, "Today we are going to have a conversation about your success in this classroom. First, is the area of mathematics called *algebra*, necessary for your future?"

None of the students responds.

Looking casually around the room, the instructor happens to notice a student in the last chair of the middle row and asks him, "Young man in the back of the room…what is your name, sir?"

The student responds, "My name is Albert…" and then promptly inquires, "What is your name? "

Taken back momentarily by the brassiness of the student's tone, the instructor contemplates the best way to respond to the disrespectfully asked question. He determines he will give the student the benefit of the doubt and cordially replies, "Oh! I am sorry, let me introduce myself, my name is Mr. Baty".

The student, feeling a need to share his opinion of the situation, quips, "Well! I do not like even being in this class. I do not like math!"

Not intimidated by the student's outburst, the instructor rephrases the question he earlier had directed to the class and asks, "Albert, do you think *algebra* is necessary for your education?"

Pondering the question, the student retorts honestly, "I do not know that answer." He then stands up and moves to leave the classroom.

Attempting to delay the student's departure and desiring to avoid an incident, the instructor asks, "Oh, uh, Albert would you like to sit down and get your new book".

Intrigued, Albert complies and sits down but immediately inquires, "Okay. Where is that new book? I only got an old book".

Sensing he has the student's interest, the instructor says," Come get this newer addition."

Albert obeys, and receives a brand new copy of the mathematics book.

"Albert, now sit down and I will continue our conversation!" asserts the teacher.

Acting in accordance with his teacher's request, Albert sits down.

Relieved, the instructor proceeds with the lesson.

The next week, the scene replays itself. "Albert, sit down. Albert, sit down," the instructor loudly but wearily commands. Once he had finished saying that phrase, the one he already had repeated multiple times even though school began just a week ago, the determined instructor embarked to teach the lesson of the day. "As we know from previous lessons, our conversations indicated algebraic terms look and sound strange to us. Can anyone tell us the new terms that were included in last week's studies?" Choosing that particular moment to stand up and move around the room, Albert comes to the teacher's attention once again.

Albert, where are you going? Albert ignored the question.
Albert, sit down.

Failing to detour Albert's steady movement toward the door, the teacher adopts a new strategy and says, Okay, Albert, tell us how these terms might help us today. To the instructor's surprise, Albert replies, "Well, Batty [Albert frequently called Mr. Baty, Batty], I copied all those things down and here is my copy. Would you like to see the terms?"

Pleased with the effort Albert had put into last weeks lesson, Mr. Baty still felt compelled to ask, "Albert, please tell me what are you doing in this class? It is third period and you have algebra first period". [Mr. Baty already had assumed Albert has had another eviction notice from yet another English class and had selected the algebra class as a safe place to hide.]
Instead of responding, Albert sits down, although not for long. The unending battle for authority quickly resumed as Mr. Baty commanded, "Albert, sit down! Albert, please SIT DOWN!"

The command failing to catch Albert's attention, Mr. Baty bellowed, "Albert, what are you doing now!"

Strangely, instead of ignoring Mr. Baty, Albert sat down without requiring any further directives and stayed in his seat the rest of the period. Class continued.

How many Albert's are in your classroom? Join with Mr. Baty in this adventure of addressing the particular demands and pressing educational concerns of Albert and other similar students. Using action research as a tool, may throw some light on the Albert experience.

First, teacher's action research conceptions depend on whether they put the accent on <u>action</u> or on <u>research</u>. When the accent is on <u>action</u>, there is an assumption the primary purpose is to modify their practice in some way (Fedman & Minstrell, 2000,). Second,

when the accent is on research, there is an assumption the teachers purpose is merely observation of practices. With Albert, the accent was on action.

Albert influenced an idea [teaching through conversations] that broke teaching "out of the box", leading to a classroom of students producing together. Classroom conversations with Albert influenced other student's performances and perhaps enhanced their motivation by providing a level of understanding that connected mathematics to the student's lives.

Overall, teaching Albert placed an emphasis on instructing students to learn the language of mathematics in a manner that exceeded merely learning the content. Albert forced the use of 'action upon objects' as a teaching strategy so understanding could emerge (Connell, 2003). Using activities as objects to act upon and thus promote increased learning, included having the students work in teams solving carefully selected problems at the dry erase boards. The teams shared knowledge with each other as they worked through the steps needed to solve the problem before presenting it to the class. The approach forced students to apply their knowledge and use the language of mathematics. By allowing only a brief amount of time [Albert's focus was short-term] to complete the task, this kept the class moving forward. It did not matter if the teams finished the problem; the instructor finished them as a way to emphasize key concepts targeted for mastery.

The strategy of forcing the students and Albert to identify quickly what they knew, and discover what they did not know, expanded their skills for acting upon a mathematical problem. The students written steps for solving problems they completed at the board, their drawings that illustrated key components of the problem, and their oral explanations served as "records of action" that traced their learning. For Albert and the students in the numerous algebra classes he visited, requiring "records of action" opened the door for facilitating students mental processes needed to resolve the mathematical problems. A "record of action" that documents students thought processes serves as an informal assessment method. In particular, it can be a way of assessment that assists students understanding (Connell, 2001).

I recall the time Albert walked to the front board and provided several changes in the way I was presenting linear equations. His comments bridged the language gap between the cultural language that Albert and the students used, and the 'private language of mathematics'. Using his own language, Albert offered a unique piece of understanding that resolved the student's mental confusion about standard equations. Albert drew pictures on the board to transform abstract equations into familiar concrete experiences. He translated terms and symbols into meaningful concepts as the students assisted him in making calculations to complete the drawing. After seeing the story told in pictures, the students made the mental connection between linear equations and the data needed to create an equation. It worked! Afterwards, the students routinely drew pictures to enable the creation of equations from word problems. Translating the private language of mathematics into

meaningful symbols, and then into meaningful concepts, empowered the students. Albert's "record of action" opened their minds enough for them to recognize how much they already knew.

The transformation of both the teaching pedagogy and the organization of the activities, promoted the total engagement of the students in cognitively complex conversations about tasks as they worked. Albert's learning style created a need to cluster students together in small groups to produce specific mathematical products. Likewise, unique conversations with Albert aided designs for in-class cooperative group activities. The students' enhanced "verbal-intuitive exposition" skills, made it possible for them to understand, discuss, and draw mathematical procedures effectively. As Gallimore and Tharp (1995) wrote, language that accompanies joint productive activity is the major vehicle for the development of higher cognitive processes necessary for comprehension.

The story of Albert is a call for a modification in teaching pedagogy and organization of activities. Each of us has had an Albert. Do we fully understand how much Albert's learning depends on us? What effects, if any, did this teaching strategy have upon the many other students on a daily basis? How did it provide better learning for Albert?

Through the implementation of a 'record of action' as an instructional strategy with Albert and the other students, greater achievement gains on end-of-the course standardized tests of comprehension occurred. Passage rates on the end-of–course tests increased from 27% to 46% over a two-year period. High stakes test passage rates for the high school mathematics department increased from 17% to 87% passage rate over three years as more and more of the teachers implemented 'cognitively complex conversations' about the mathematical concepts as they were teaching their students.

Passage rates increased because the first conversation with Albert and the many other students that occurred on a daily basis, forced me to wonder and drive myself to make sense of my teaching experiences. I self-observed the changes Albert made in my style of interactions with him and with the other students. I developed an increased awareness of student's learning differences and how each one coped with the modern-day expectations of moving from their cultural experiences into the culture of mathematics.

After becoming familiar with Albert's learning style and frequently reviewing mentally our conversations, I gathered enough data to make conjectures about my new teaching and curriculum strategies. I can report listening and attention to each student's differences closes the achievement gap. All the Albert's in the schools across the nation need similar changes to occur in current teaching methods. As we observe and make the changes in ourselves, we become teachers! (Craig, 2003).

This short conversation about using action research demonstrates the progress Albert and I made. Using action research produced insights about what it takes to become a teacher 'who does make a difference'. Oddly enough, I now have Albert in my college mathematics classes. The research continues.

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