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## Shut Up and Listen! How Experiences as a Learner and a Culture Shock Shifted my Focus of Teacher Knowledge in a Science Classroom

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### Abstract

When pre-service teachers transition into service many revert back to the experiences they had as a learner. This can be an issue if the teacher did not receive "best practice" when they were engaged in the K-12 experience. This autoethnography will take the reader through the experiences of a teacher who did not receive an education where his teachers utilized a pedagogy promoted in Tertiary schooling. He will describe an experience with his poverty-stricken students that made him realize that his didactic style of teaching was not effective.

### Keywords

Behaviorism, Constructivism, Hegemonic Masculinity, Conceptual Change, Cognitive Dissonance

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# **Shut Up and Listen!**

## **How Experiences as a Learner and a Culture Shock Shifted my Focus of Teacher Knowledge in a Science Classroom**

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*When pre-service teachers transition into service many revert back to the experiences they had as a learner. This can be an issue if the teacher did not receive "best practice" when they were engaged in the K-12 experience. This autoethnography will take the reader through the experiences of a teacher who did not receive an education where his teachers utilized a pedagogy promoted in Tertiary schooling. He will describe an experience with his poverty-stricken students that made him realize that his didactic style of teaching was not effective. Keywords: Behaviorism, Constructivism, Hegemonic Masculinity, Conceptual Change, Cognitive Dissonance*

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In this autoethnography I will write about how my views of education, specifically the knowledge that teachers value, were warped by some detrimental school experiences and how those incidents affected my personal life. Most of my teachers had a positivist orientation where they believed in universal truths and behaviorist pedagogy based on stimuli and rewards. Later an experience with one of my less fortunate students helped me realize that the path I was on was not helping my students reach their full potential and was not achieving happiness in my personal life. The names of the people in the story have been changed to protect their anonymity. To give my story an authentic voice, and to relate it to everyday experiences teachers and learners have, I will present this essay as an autoethnography. I will briefly explain the basis of an autoethnography below for readers who are not familiar with this genre.

### **Autoethnography**

Autoethnography is an approach to research that seeks to describe and analyze personal experience in order to understand cultural experience. Jones (2008) describes autoethnography as "A state of flux and movement - between story and context, writer and reader, crisis and denouement" (p. 207). A critical distinction between an autoethnography and a biography is that an autoethnography has theoretical foundations that the author's personal story is built on where a biography is the author simply telling their story. The genre emphasizes cultural analysis and interpretation of the researcher's behaviors, thoughts, and experiences in relation to others in society. Autoethnography is an ethnographic inquiry that utilizes the autobiographic materials of the researcher as the primary data.

### **Elementary Experiences**

We will start all the way back in kindergarten at J Elementary. I was a shy kid and was very nervous about going to school five days a week. In 1983 there were not many pre-school options in my small rural town so kindergarten was my first real school experience. As noted earlier, I did not have a good school experience, but kindergarten was not the problem. Mrs. S. was my teacher, a kind-hearted woman who greeted us each day with a hug and a smile. She had the stereotype qualities that come to mind when you think of a "good" kindergarten teacher; sweet, hardworking, creative, and made you feel special. I can still fondly remember playing

games of “duck-duck-goose,” singing songs to learn counting, drawing pictures of pilgrims on Thanksgiving and countless other ways that Mrs. S made learning fun and personal. If this was what school was going to be like, I was in! Mrs. S seemed to care about my ideas and she helped formulate ideas as I made discoveries in the classroom. Unfortunately, Mrs. S’s passion for creativity and personalized learning did not spread down the hall into first grade as I entered my second year of school.

When I entered 1<sup>st</sup> grade I expected a similar experience as I did in Kindergarten. How could any teacher not follow the successful approach Mrs. S did? Unfortunately, my 2<sup>nd</sup> year of formal schooling introduced me to Mrs. W. Think Miss Viola Swamp from Harry Allard’s children’s book *Miss Nelson is Missing*, but with a twist on the classic tale; we had the strict teacher every day and would breathe a sigh of relief if a substitute walked in the door. The thing that bothered me the most about Mrs. W was not her strict, military-style, behavior management strategies (I was a shy kid who did not say much so I never got in trouble) it was her lack of pedagogical diversity. Mrs. W was an uncompromising behaviorist who delivered her lessons solely by Direct Instruction (DI). Behaviorism associates learning with changes in either the form or frequency of observable performance (Watson, 1930). The key elements of behaviorism are the stimulus, the response, and the association between the two. No attempt was ever made by Mrs. W to determine the structure of the student’s knowledge nor to assess which mental processes was necessary for them to use (Winn, 1990). “The learner is characterized as being reactive to conditions in the environment as opposed to taking an active role in discovering the environment” (Ertmer & Newby, 1993, p. 55). Mrs. W viewed us as empty vessels, or a *Tabula Rasa* according to John Locke (1970), who she could manipulate by providing the correct stimulus, typically a threat about the importance of the test and how we would not be ready for second grade. If we scored poorly on a quiz the only possible solution was we were not paying attention or we were lazy, “You are never going to amount to anything if you don’t know your multiplication facts!” or “How do you expect to get ahead in life with penmanship like that” were common fear stimuli Mrs. W used when we did not meet her standards. Like Pavlov ringing his bell (1928) Mrs. W. felt she could classically condition us to learn her unarguable facts because of a fear of not being successful in this strange place called “the real world.” There was no consideration of how we interpreted the information because in Mrs. W’s mind the curriculum was infallible and a student’s worth was measured in how quickly and accurately they could recite it back to her.

Aligning with her theoretical framework of learning, Mrs. W. chose an instructional approach that required students to be passive learners and focused all attention on her. DI allowed Mrs. W to perceive that she had control over our learning, a common belief of behaviorist learning theory (Watson, 1930).

Mrs. W. never asked us what we thought about the lessons and when asked questions an exact “right” answer was the only acceptable response. The bright, colorful, exciting world Mrs. S. allowed us to live in was transformed into a dark world of concrete facts. This epistemological view of teaching has been shown to reduce creativity in children (Land & Kenneally, 1977) and made school a dull and boring place for me.

I wish I could tell you my second and third grade experience was better, but my teachers were not much different than Mrs. W. Like Mrs. W these two teachers did not seem to notice or care about what we thought about the subject. Similar to what Freire describes as a “banking” educator my teachers treated me as a receptacle for knowledge and when I did not accept their deposit I was scorned for not caring about my education. Freire (1972) lists an attribute of a banking educator as: “The teacher knows everything and the student knows nothing” (p. 54). My disdain for school grew out of the suppressive nature imposed by my teachers. My mind was racing with questions, but my creative spirit was dulled by the standardized learning agenda that took precedent over authentic inquiry.

In third grade I was introduced to a new stress: test anxiety. For the first time my classmates and I took a national standardized test. I remember practicing filling in bubble sheets, and being told how important these tests were. Not only would the results show how well I could display skills that are important for the real world they would go on an equally mysterious place: my permanent record. I became more frustrated in class, rejecting the “Banking” model and yearning for a return back to a time when learning was enjoyable. I never had any behavior problems, but my grades were slipping and I consistently received comments in the behavior section of my report card that reassured my parents I could be a “smart kid” if I tried. My parents never pushed me and always told me words of encouragement, I shudder to think what would have become of me if I had additional pressure to from home. Even with supportive parents I started to feel anxiety that I was not smart and I began to give into the positivist outlook of universal truths. As much as it did not feel right, I began to fall in line and accept that academic answers are always in simple black and white terms and in order to survive in this environment I needed to curtail my thinking that way.

Near the end of third grade I became increasingly truant. I had all the tricks down, hold the thermometer up to the light bulb, wrap the heating pad around my head before mom came to check on me, and the fake scratchy voice. My mom actually took me in to the hospital to get checked for ulcers because she could tell that I was nervous anytime I had to get on the bus.

Even though I forced myself to believe the behavioristic model to learning my subconscious was bothered by the fact that my teachers did not seem to care about questions I had. My thoughts were like a hundred moths trapped in a lampshade, praying for someone to shut off the light and let me be free to think and explore. But the all-important curriculum was that bright shining light that kept me stuck in an endless cycle of boredom. I understood I needed to learn some basic facts, and I am grateful that I learned how to multiply, divide, write proper sentences and spell, but the unimaginative world of drill and kill worksheets seemed to make my dendrites torpid rather than excited. Any questions I had were met with contempt; “Ok, I guess we will waste more class time and go over this again, but this time pay attention,” were commonly echoed throughout the walls of the classroom. Poor marks on exams were more welcome than the public humiliation of being the one who “didn’t get it.” According to Black (2005), students who suffered from school related anxiety tended to be consumed with feelings of anxiousness, worthlessness, and/or fear in regard to their academic achievement. Anxiety can produce a physiological hyper-arousal, interfering with students’ mental processes and debilitating their ability to function during a test, as well as in the days and weeks leading up to a test (Stober & Pekrun, 2004). In addition to the adverse effects on cognitive processes, anxiety can produce physiological hyper-arousal, negative emotional responses, as well as behavioral problems in children.

Just when things were starting to look the bleakest I met one of the most influential and important people in my life, my fourth grade teacher, Mrs. S. I can still remember the first day of school when she asked us “What do you want to learn about this year?” Most kids sat frozen confused by the question thinking, “What do you mean *want* to learn, don’t you just tell us *what* to learn?” I quickly jumped at the opportunity; “Mrs. S, do you think we could learn some science? We haven’t done much of that.” The entire year was filled with projects, investigations, and a consistent question of “What does this mean to you?”

Mrs. S used constructivist learning theory as a guide to her teaching practice. Constructivism has been defined by some as a type of learning theory that explains human learning as an active attempt to construct meaning in the world around us (von Glasersfeld, 1989 p. 162). Lunenburg (2011) points out “One foundational premise of constructivism is that children actively construct their knowledge, rather than simply absorbing ideas spoken to them by teachers” (p. 3).

Miraculously my ulcers disappeared and for the first time ever I had perfect attendance during a school year. I left the school year thinking “Wow, this is what school can be like.” At parent-teacher conferences my parents told Mrs. S that I was a happier child and I did not dread coming to school for the first time since kindergarten.

A key component in my rejuvenated motivation was Mrs. S’s daily emphasis that her students’ ideas matter. Each lesson began with her collecting student knowledge through discussion, concept maps, or KWL charts. She then used this knowledge to construct curriculum that fit our needs. If she felt we had a strong understanding of a concept, she would challenge us with advanced questions. If she felt we were lacking in an area, she stepped backwards and taught us more remedial information. Mrs. S did not let the pre-determined curriculum what was going to be taught in her classroom, she let the students guide her lessons.

I remember the excitement of entering class each day, not knowing what we would do. One afternoon we had to write a letter to an alien explaining how to make a peanut butter and jelly sandwich. Then Mrs. S. actually attempted to make the sandwich based on our instructions. The complete failure of our writing was not a form of public humiliation but instead a way to show us that is ok to make mistakes (and a really fun way to teach explanatory text). The alien PBJ assignment is an example of how Mrs. S could take a writing standard and turn it into something fun, exciting, and safe enough for us to take risks on the assignment. Instead of treating us like we had unchangeable writing traits that were to be judged; Mrs. S sent us the message that we were developing learners and she was interested in our personal development.

I wish I could say that the rest of my elementary and middle school teachers followed Mrs. S’s lead. After that wonderful year I returned to more classrooms wrapped in behaviorism where daily routines felt like factory work. My teachers were not bad people, they simply viewed students’ minds as things that needed to be controlled and filled with facts. Unlike Mrs. S, the majority of my teachers seemed to focus on content knowledge and the experiences and ideas I brought into the classroom were inconsequential. I clamored for an instructor who was interested in my schema and even though I was performing better, academically, in school I did not find much joy in it.

I became increasingly frustrated with my teachers bypassing my knowledge and moving directly into content knowledge I was losing the battle and slipping back into the mindset I had in third grade that the world is a place of concrete facts and those facts were the currency I needed for college and eventually a good job.

My tertiary experience was not much better than my high school one. I had a couple of really excellent professors that showed me what good teaching looked like, but most chose lecture as their primary mode of communication (I always found it ironic when an instructor used didactic teaching to introduce us to constructivist learning theory). As much impact as my Kindergarten, 4<sup>th</sup> grade, and the few professors had on me the repeated experiences of the “Banking” model influenced my teaching as I began my career as an in-service teacher.

### **The Turkey Day**

I began my teaching career in Houston, Texas as a 5<sup>th</sup> grade science teacher in a large urban school district. I don’t know if it was culture shock, lack of experience, or simply nerves, but the few good experiences I had as a learner did not make their way into my classroom. I was unfortunately becoming the same teacher that I loathed for most of my primary, secondary, and tertiary experience.

During my first two and a half years of teaching I really struggled to find ways to relate to my students. We had almost nothing in common; I was a white Iowan who grew up in a middle class home with two great parents. Nearly all of my students were poor minorities and

many were being raised by a single mother. I was excited about the challenge of teaching students in their situation because I felt they needed good teachers more than anyone. I also vaguely remembered that magical year in Mrs. S's class and knew I wanted the students to feel the same joy that I did. Unfortunately, the culture of my school did not allow me to fully embrace my pedagogical desires. In 2002 the No Child Left Behind Act was passed into law and new measures of teacher accountability were enforced. Rod Paige, the secretary of education under President George W. Bush was a former superintendent from the Houston area and modeled the law after the framework already established in Texas. I learned to dehumanize my students and put them in groups based on targets to pass the standardized test at the end of the school year. At staff meetings administrators would give us a breakdown of how our students performed on practice tests. Curriculum directors would explain how I had a certain percentage of African-American or Hispanic students who needed to improve their scores to meet proficiency. The target list of students was composed of kids whose practice test score was close enough to proficient so administrators felt with enough extra tutoring they could meet the cut-off score. Once those students were identified I was to focus all my time on those kids. I didn't realize it but the culture of the school had turned me into everything I hated growing up; the oppressive banking educators of my elementary experience. Freire (1972) describes the oppressor consciousness as something that tends to view everything into an object that can be dominated (p. 40). He wrote: "Humanity is a "thing" and they possess it as an exclusive right, as inherited property. To the oppressor consciousness, the humanization of the "others," of the people, appears not as the pursuit of full humanity, but as subversion" (Freire, 1972 p. 41). After a practice test students who passed were given extra recess and popsicles, while students who did not had to sit against the wall and watch the other kids play. Behaviorism was back, and I was a part of the problem. Just like the teachers of my past, I had no interest in my students' knowledge, instead I focused on getting them to assimilate to me.

During my third year at the school I was chosen to run the Parent Teacher Association. One of my duties was to organize the school's "Turkey Drive," a program where we collected canned goods and asked grocery stores to donate turkeys so we could give food boxes around Thanksgiving to the extremely needed kids at the school. The last day before Thanksgiving break parents would come pick the items up and take them home. Some parents had no means of transportation so another teacher and I delivered the boxes to them. A Hispanic girl in my classroom belonged to one of the families who received a food box but did not have the means to pick it up. The other teacher and I drove to the apartment complex the girl lived in and carried the box of food up a flight of stairs and around a group of young men covered in gang-related tattoos, playing dice, and openly smoking marijuana. When we knocked on the door were greeted by four children and a mother who all lived in a one-bedroom studio apartment that couldn't have been more than 600 square feet. The girls huddled around the food box like it was a pot of gold and the mother tearfully told us "gracias" over and over. As my colleague and I walked back down the stairs through the cloud of marijuana smoke I said to him "I just yelled at that girl today because she is on my target list and she couldn't recite Newton's Three Laws, what is wrong with me?" The Turkey Day experience was the first time poverty was contextualized for me. I left the apartment thinking: "Why should she care about Newton's Three Laws, they are completely insignificant to her life."

This experience spawned a change in the way I viewed knowledge in my classroom. My experience as a learner and the culture of my school fostered a belief that content knowledge was the most important type of knowledge a teacher should possess. The notion that teachers possess different types of knowledge, and that having mastery of these diverse knowledge bases is required for effective teaching, has been studied extensively. A typology of these knowledge bases was put forth by Shulman (1986, p. 8) when he described a framework for Pedagogical Content Knowledge (PCK), these include: Content knowledge,

general pedagogical knowledge curriculum knowledge, knowledge of learners, knowledge of educational contexts, knowledge of educational needs, PCK. Shulman would claim that effective teachers must obtain evidence of all these knowledge bases to meet the needs of their learners.

If I were to create a PCK map of my teacher knowledge at the time of the “Turkey Day” experience, I would have been very heavy in content knowledge and light in knowledge of learners. Observing the home environment of those children forced me to re-evaluate the hierarchy of my personal teacher knowledge base. A change needed to be made and my level of knowledge of learners needed to improve. From that day forward I began each lesson by asking my students to share their ideas and background knowledge. This knowledge then became the point of reference for my curriculum plans. Investigations changed from pre-planned kits to addressing authentic questions the students had about the content. Even assessments evolved from standardized quizzes to write-to-learn experiences where students expressed how their understanding changed. I believe that my students’ desire to learn increased after my recognition that knowledge of the learner an essential component to quality teaching and I know that my attitude as a teacher drastically improved because of it.

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