The core of my teaching philosophy is the belief that students construct their meanings and knowledge through their experiences. I believe that students can produce more productive meanings in an environment where they are actively engaged in activities and discussions. The experiences students have in these situations create opportunities for them to share their thinking not just with me but also with others in the class. The sharing of ideas requires that I foster an environment where contributions are not immediately shot down or rejected for being "wrong". Rather the contributions are discussed and constructively critiqued, including mine.

Such a classroom environment can be difficult to establish and maintain with large numbers of students. The first activity that I do with any statistics class is one that I developed to instill two needs in my students: first, the need to collaborate with others, and, second, the need for data. The activity first appears like a standard icebreaker in that students move through the room introducing themselves to each other and finding out about each other's backgrounds. As students do so, they are to draw candy (or tokens) from bags placed around the room. After a few minutes, I stop the class and announce that certain members have become "ill" and to remind them that they need to mingle and move around the room. After a few more minutes, I stop the class again, announce now who is "ill" and who has "died". With the announcement of students getting sick, and then with people dying, students are already thinking that this is not a regular icebreaker. After announcing "rules" about the "dead" talking to the "living" (they can't), the students are "hired" to 1) figure out what is going on, 2) come up with a way to prevent more people from getting sick and dying, and 3) implement their solution. The team that comes up with an accurate solution wins extra credit. However, I warn the students that the longer they take, the more of them will die; if everyone dies, then no one gets extra credit. This activity is based upon John Snow's analysis of the data from London's 1854 cholera epidemic. This activity goes a long way to creating an environment of open sharing of ideas and to simply try out their hypotheses and potential solutions.

To help ensure that more students participate and share their ideas, I often have students break into small groups for discussions and activities. While the students are working, I move between the groups and ask members what others have shared. I'll bring the class back together and ask the groups to share. This allows the whole class to see a variety of strategies and think about the merits of each. For example, while in the unit on descriptive statistics I ask students to work in groups to develop their own statistics to measure the variation between individual objects within any collection. Each group has to first decide what they mean by "variation" and thereby conceive of an attribute of the collection that they can then measure. Once each group has operationalized "variation" and developed their own statistic, they are given sample data sets to apply their statistic to. While some of the data sets contain numeric values, others contain character values. In deciding how to handle these character values allows for the groups to discuss various strategies and propose methods to the whole class, in addition to comparing/contrasting each group's statistic and operational meaning for "variation".

In order to best design discussions and activities to best support my students in their learning, I need to know where my students are. Beyond using their answers to summative and formative assessments, I record each class session using screen capture and an audio recorder. I make the videos available along with any slides available to my students. I watch these videos to critique myself and build models for how students appear to be thinking. This allows me to identify spots where I need to provide clarification or to create new activities to address problematic ways of thinking. The character value data set is an example of an activity designed to address problematic thinking that only numerical data sets could have measureable variation.

My teaching philosophy can be summarized as the following

I believe that…	**Therefore I will…**
Students learn through experiences.	Design and implement a variety of activities, guided discussions, and projects that support the students in building productive meanings for statistical concepts and constructing connections between those concepts.
Participation is necessary for learning.	Stress that merely attending class is not enough to build rich meanings. The brain is just like any other muscle and that usage is necessary for development. Participating in in-class discussions and activities are vital for building student understanding. Completing homework and projects allow for that participation to continue beyond the time constraints of class.
Communication is essential.	Challenge my students not only to carry out statistical analyses but to also write and talk about their findings so that their audience can understand what they found.
Thinking critically is necessary in the statistics classroom.	Stress that knowing *how* to use an algorithm or program is only one small part of statistical knowledge; knowing *when*, *why*, and *what the results mean* are vital for using statistics.
Learning teams are beneficial for all.	Create opportunities for cooperative learning, stressing that teaching others and discussions allow students to improve their own understandings.
The goal of education is to inspire individuals to work hard and chase their dreams.	Encourage students to strive for their dreams, to think critically, and to develop their autonomy.
All students are unique and have the ability to learn.	Recognize different learning styles, personalities, strengths, and needs of my students.
Learning never ends.	Foster the development of self-assessment strategies in my students and the belief that they can continue to learn new things after leaving the classroom.