

Socrates and Education: Bussing

Plato presented philosophical arguments in the form of dialogues, which follow a question-answer format that focused on concrete examples of abstractions like justice. The goal was to test abstractions against the concrete examples to see if there was a discrepancy and therefore an adjustment that was needed in the interpretation of the abstraction. The dialogue would proceed in small steps, ruling out various competing possibilities until the truth was clear and the traditional interpretation of the abstraction was in rubble.

Plato's principle agent was Socrates, the gadfly who stung those who argued for venerable beliefs with penetrating questions and impudent displays of logic. His adversaries were sophists, members of a highly educated group who used canned arguments and rhetorical recitations to justify various practices and philosophical interpretations. Sophists were the mouthpiece for the establishment. Socrates was the champion of the truth, and for him, the truth was far more important than conventional wisdom.

We live in an age of modern sophists who reside in corporate structures and other large organizations. Possibly the greatest density of sophists is found in education, where some form of misconstrued abstractions support every aspect of the field from research to training teachers and creating new instructional programs. So the time seems right for Socrates to return to champion science and logic and to expose what another iconoclastic philosopher, David Hume, described as "sophistry and illusion."

Scene: A coffee shop

Characters: Dr. Gibbs, prominent professor of education and Socrates discussing learning.

Dr. Gibbs: Learning is extremely complicated and influenced by a host of factors, including motivation and parental attitudes. The point I try to make to my students is that every child is an individual who learns according to his or her time table, and in his or her unique way.

Socrates: You give us a lot to think about. But is there some fact or rule that describes *all* learning?

Dr. Gibbs. Of course not. The learner is what the learner does and what the learner has inherited. Learning is not some kind of cut-and-dried process. The most specific thing one could confidently say about all learning is that it occurs in a series of predictable stages, which have been described by Piaget and others.

Socrates: If there is nothing more specific about all learning, how is it possible to teach children that $1+3=4$?

Dr. Gibbs: I thought we were discussing all learning. Your example tells only about rote learning. Any universal property would have to be shared by spontaneous learning and sophisticated or higher order learning.

Socrates: Are you saying that nothing we can say about learning $1+3$ applies to these other types of learning?

Dr. Gibbs: (Thinks) I don't know exactly what you're trying to get at. The same person who learns $1+3=4$ learns other things. That's about as close as I can come to saying how this math fact relates to the thousands of other things the child learns. How do you think all learning is the same?

Socrates: I would rather have you discover the elements of sameness than simply tell you.

Dr. G: I am a strong proponent of discovery. So go ahead.

S: Could somebody learn this simple math fact without being taught?

Dr. Gibbs: Of course, they could learn it through discovery or through rote instruction.

Socrates: When you say they could learn, do you think it is likely that they could learn the symbols, their names, and the form of the equation without some form of instruction or modeling?

Dr. Gibbs: They could learn the idea that one thing and three other things are units that could be combined, and that's the idea behind the equation.

Socrates: Yes, the idea, but what about the other details that have to be learned. Could children learn both this idea or concept and the names of all the symbols and what the symbols mean if they received no teaching, even casual incidental teaching?

Dr. Gibbs. It may be possible but it's not very likely.

Socrates: So is it true or false that all learning can be taught through discovery?

Dr. Gibbs: I can't view learning as categories of either/or. Some things are learned more appropriately through discovery.

Socrates: So is it true that some form of teaching is required for some things children are expected to learn?

Dr. Gibbs: I could live with that. But I thought we were discussing how all learning is the same. Now you're talking about how all learning is not the same.

Socrates: An astute observation. But if it is safe to say that not all things that students learn are best left to discovery, we have agreed that this would be a false statement: All things are learned best through discovery. Do we agree?

Dr. Gibbs: I'm not sure. I think so, but I would have to give it more thought.

Socrates: Do you think a young child would learn about $3+1=4$ if the teacher presented this example and told the student the names of the symbol only one time?

Dr. Gibbs: No, more practice would be required for most students.

Socrates: How much more practice would it take for the average child? Four trials? Twenty four trials? What number?

Dr. Gibbs: I can't give you a number. It would vary from one child to the next.

Socrates: True. Which child would require more practice—the child who had a history of learning new things very slowly or a child with a history of learning things fast?

Dr. Gibbs: The slower child of course.

Socrates: So do we agree that this statement about learning is false: Learning occurs at the same rate for all children.

Dr. Gibbs: Yes.

Socrates: And we agree that some details of what is to be learned are not well served by discovery and may not be learned without adequate instruction.

Dr. Gibbs: Yes.

Socrates: Is it true that instruction should occur on a level that is appropriate for the children?

Dr. Gibbs: Absolutely. That is one of my strongest beliefs.

Socrates: And is it true that if instruction is not attuned to the student's level of understanding the instruction will fail?

Dr. Gibbs: Categorically yes. Learning accommodations are not possible unless there is a match between the children's level of cognitive growth and the instruction. But I don't see how any of the things you've

been asking help clarify what is the same about all learning. If you're trying to say that all learning presupposes an appropriate level of cognition, it's already been said and I would certainly concur.

Socrates: Are you saying that that this principle holds for all learning, not simply things that are being taught?

Dr. Gibbs: Absolutely. But this is nothing new. I can't imagine anyone who has studied education not being aware of this principle.

Socrates: So it is a well known principle. Would you say that educators who are aware of this principle would recognize situations in which it applies?

Dr. Gibbs: Well, I can't assert that all would do it, but I would guess that well over 90% would.

Socrates: Would you say that any experienced educational advisor would be aware of this principle?

Dr. Gibbs: Absolutely.

Socrates: And would they be able to apply it in a situation that required it?

Dr. Gibbs: I don't see any reason they wouldn't.

Socrates: And do you think that these experienced advisors would also recognize that some things are not best left to discovery?

Dr. Gibbs: Well, I suppose that if the application is fairly obvious, they would. What kind of things did you have in mind?

Socrates: Simply skills that are normally taught, like math, spelling and reading.

Dr. Gibbs: I would say yes without reservation, they would recognize that structured teaching is required, at least for the majority of students.

Socrates: It seems that we are in agreement about the importance of matching the instruction to the students skill level and avoiding

discovery for skills that require some form of structured instruction. But I'm not sure that educators always know when to apply it. Here's an example. In the 1960s and 70s, educators supported the plan to busdisadvantaged Black children to suburban schools. Did that plan fail or succeed?

Dr. Gibbs: In one sense it failed. But it succeeded in furthering integration.

Socrates: But in terms of promoting children's learning did it succeed or fail?

Dr. Gibbs: I hate these either/or dilemmas, but I would have to say it did not achieve the level of success that was hoped for.

Socrates: If educators knew about the simple principles we've been discussing, why didn't they stand as a united group and protest the insanity of this bussing initiative?

Dr. Gibbs: I don't know how to answer that question. Bussing seemed like a reasonable initiative, breaking the mold of segregation and isolation that had characterized the history of Blacks in this nation.

Socrates: What you observe is reasonable, but we are not discussing history, simply an initiative that was supposed to promote better learning for blacks. Did this initiative provide for matching children's cognitive performance with what they would be taught?

Dr. Gibbs: I don't know how to answer that. Students were placed in the same grade they were in their inner city school, and this integration scheme was based on data.

Socrates: What data?

Dr. Gibbs: There was data that black students who were in racially integrated schools performed far above the level of students in segregated, all-black schools. So if inner city students were bussed to

integrated schools, it made sense to assume that they would perform like other blacks in integrated schools.

Socrates: Do you believe that placing these black students in integrated classrooms would *cause* them to perform at the level of the whites?

Dr. Gibbs: Yes, and no. Possibly not immediately, but in time.

Socrates: You endorse the integration argument, but would you endorse this one:

Small children ride small bikes.

Big children ride big bikes.

Therefore, placing small children on big bikes will cause them to become big children.

Dr. Gibbs: That's an absurd argument. It's pretty obvious that placing a small child on a big bike won't cause the child to become big.

Socrates: True. But will placing a low performing child in a high performing classroom cause the child to become a high performer?

Dr. Gibbs: It seemed possible that the inner city child wouldn't catch up right away, but that in time the child would catch up.

Socrates: Ah, but can't you say the same thing about the small child on the big bike? If the small child is on that bike long enough, the child will be big. Did placing him on the bike cause him to grow?

Dr. Gibbs: Of course not. He matured. And that could happen with the integrated children. In time they could mature and catch up.

Socrates: Are you saying that it is entirely the responsibility of the children and their maturation processes to bring about this possible change?

Dr. Gibbs: No, they would be in a setting that would promote learning. A learning ethic would be modeled by the children's classmates,

and of course, the teacher or a student partner would work with them when necessary.

Socrates: Are you saying that they would be bussed to an integrated school so they could be segregated when the teacher worked with them or demeaned when their student partner tried to teach them?

Dr. Gibbs: You make it sound absurd, but I can't see why it couldn't be done in the spirit of helping the students acclimate to their new learning environment.

Socrates: But was there an explicit plan for matching their level of performance with what they were to learn and for providing teaching for the things they would not likely discover on their own?

Dr. Gibbs: Not that I know of.

Socrates: So would it be safe to say that educators did not apply basic principles of learning to this situation?

Dr. Gibbs: I think that is overstating it.

Socrates: As I understand it, bussing came about in response to a report—the Coleman report—which provided a great deal of evidence that the fourth graders who were bussed were often two years behind their suburban classmates in reading and math. So wouldn't you expect this poor match between children and expectation to be discussed?

Dr. Gibbs: I...I don't really know whether that was discussed.

Socrates: Wouldn't it also be necessary to discuss the fact that much of the information the inner city children lacked is not well learned through discovery, but would require direct teaching?

Dr. Gibbs: Again, I don't know, but possibly they didn't...

Socrates: Did they consider it appropriate to take second-grade white suburban children and place them in 4th grade?

Dr. Gibbs: No, not that I know of.

Socrates: But if they didn't consider doing it with white second graders, why then did they apparently believe that it would be appropriate for black children who performed at the second-grade level?

Dr. Gibbs: I don't know that they addressed the instruction in those terms. I think they were more concerned about the precedent that was being established and the long-term effects the initiative could possibly generate.

Socrates: But do you agree that the educators ultimately did not apply universal principles about learning and discovery, and they apparently didn't see that these principles applied to this situation?

Dr. Gibbs: I see your point, but I think you've taken these decisions out of the context of desperately wanting to do something immediately to change the practices for educating blacks.

Socrates: But wouldn't sagacious educators want to change practices so that universal principles about instruction applied to these students?

Dr. Gibbs: Certainly. In retrospect, it seems that they should have taken more time and considered the options more carefully.

Socrates: Possibly so, but the fact seems to be that they didn't apply the principle about matching the performance level of what they are expected to learn or the principle about not leaving some things that should be taught to discovery. Earlier, you indicated that any experienced educational advisor would not only know these principles but know where to apply them. So are we to believe that the educational advisors involved in making plans for bussing were inexperienced, unqualified, or simply not as perceptive as most educational advisors?

Dr. Gibbs: I think you're creating a false dilemma. You're completely overlooking the possibility that over time, the students would catch up.

Socrates: Let's examine the possibility that they could catch up in time. Would you judge that experienced educational advisors know math?

Dr. Gibbs: Of course, to earn a Ph.D., they would have had to learn a great deal about math and statistics.

Socrates: Do you think experienced educational advisors would have difficulty solving this problem: Biker A is 2 miles behind biker B.

Biker B is going 10 miles an hour. How fast would Biker A have to go to catch up to B in one mile?

Dr. Gibbs: I don't understand the point, but the problem is quite elementary. Biker A would have to go 30 miles per hour to catch up in one mile.

Socrates: The point is this: How likely would it be that biker A could catch up if biker A has never been able to go faster than 6 miles per hour?

Dr. Gibbs: It would be impossible unless biker A somehow got a lot faster.

Socrates: Exactly right. Now consider the learning parallel. Child A is 2 grade levels behind B in reading performance. If B continues to learn at the rate of one grade level per year, how fast would child A have to learn reading skills to catch up to B in one year?

Dr. Gibbs: Child A would have to learn at the rate of three grade levels per year. But that does not seem very likely, off hand.

Socrates: Doesn't this math problem describe the learning problem that was to be solved by bussing? The students being bussed were often two years below the norm of the suburban children. For them to catch up in 1 year would require them to learn three times as fast as the higher performers. They have never learned faster than 6/10 the rate of the higher performers. Do you see the parallel?

Dr. Gibbs: Yes, you're very clever. But who said the Blacks would catch up in one year? Possibly it would take more than two years, but it could happen.

Socrates: Yes, and it could happen that the biker who has never been able to ride faster than 6 miles per hour would get faster. But the core issue is how could biker A catch up without going faster than biker B?

Dr. Gibbs: True. At some time that would have to happen.

Socrates: And what would you say the probability of that occurring would be: 100%, 80%, 60%?

Dr. Gibbs: Clearly, I don't know. I would guess probably that the chances are less than 50%.

Socrates: And what would you estimate the probability that biker A would be able to perform at a faster rate long enough to catch up to B?

Dr. Gibbs: I don't know. Possibly never. Certainly not more than 5 or 10%.

Socrates: Would you say that the probability is great enough to place a bet on bikerA catching up ?

Dr. Gibbs: Not really.

Socrates: If a sensible person would not bet on it occurring, and if educational advisors bet that it would happen, how sensible are those advisors?

Dr. Gibbs: Okay, okay. What do you want me to say, they were idiots? Yes, they should have considered the probabilities more carefully. They didn't. But they certainly were not the only ones who didn't. The list of highly educated people who endorsed the initiative would be very long. So the educators were certainly not alone.

Socrates: Aha. But who should have presented the educational arguments: lawyers, politicians, concerned citizens, or educators?

Dr. Gibbs: Mmm. Well, maybe we can continue this discussion some other time. I have a class to teach in eight minutes.

Socrates: What is that class about?

Dr. Gibbs: Instructional methodology and human dynamics.

End