Controversies in disciplines are useful!

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School curriculum is organized by subjects, and subject content is decided by subject area experts. In that sense, we teachers become dependent on experts. If experts change their mind or disagree with each other, it leaves us in a dilemma. Who do we agree with? This leads to even more vexatious important questions: What do we teach? Why? This is a fictional conversation between two teachers trying to answer these questions.

Ira: Can't these expert historians make up their mind about one historical event? History is being written for centuries now, and these people argue over the smallest things.

Some historians say the battle of Haldighati was inconclusive, while other historians say Rana Pratap won the battle. To top it all, this textbook states both views, and explains the evidence which implies that Rana Pratap won the battle. Until now, we have been teaching that Rana Pratap fought hard but retreated from the battle. He did not lose the battle, but he did not win either. This changed textbook says we should teach something else.

Anubhuti: Aah, the autocracy of textbooks. It is not textbooks but people who expect us to follow textbooks unquestioningly. Textbooks change and everyone expects us to change too. As if the written word is law, and teachers are mere pawns, not autonomous thinking humans. If a teacher is an unquestioning follower, how can she teach to develop a child into an autonomous, creative, thinking human? We should see textbooks as mediums rather than authorities.

Anyway, is this new textbook introducing any new facts?

Ira: Not really. Some events after the battle which could lead to the conclusion that Rana Pratap won, are reiterated. This is a different interpretation of the same events. History cannot be interpretations, history is facts and events that children can remember. Now they expect us to teach children how to connect facts, interpret them and agree with one of two opposing conclusions.

Disciplines change, disciplines develop

Anubhuti: That is a historian's job, and hence a history teacher's responsibility. Historians go through archives and determine events that happened in the past. They connect the events and build a narrative. Later they might find an event they did not know of, or they think of a different way of interpreting an event. They check if it fits into the earlier narrative, and if not they change the narrative. This revised chapter on Rana Pratap seems to be doing that. Historical narratives evolve over time.

Ira: You mean history keeps changing because historians keep looking at the same events, and disagree over interpretations! We are at the mercy of historians. You are lucky you teach physics. Theories in physics are not going to be contested by other physicists. As if any scientist would say gravity doesn't exist anymore.

Anubhuti: But scientific theories could change too. Our experience of gravity may not go away, but our understanding of gravitational force could change. Physicists might find some new things that changes what they thought was the cause for gravitational force. Then they could give us a new theory, which we teachers then have to teach.

Ira: I don't believe this. Have scientific theories ever changed?

Anubhuti: For a long time, people said that about history too, but see how narratives change. In fact we can distinguish between different historians based on the view they bring into a narrative. Similarly there are contestations in science too. Ptolemy had developed a very good model of the geocentric theory and circular orbits that was accepted for hundreds of years. Copernicus contested this theory with the heliocentric theory which explained more natural phenomena than Ptolemy's theory explained, and much better. But then it took over 350 years and numerous experiments for Copernicus's theory (with some changes) to be accepted.

Ira: Ok, but we now know heliocentrism is true. Surely, this will not change.

Anubhuti: Actually, it is not entirely impossible. Scientists can, and do, discover situations in which an accepted theory does not work. Other times they discover previously unknown natural phenomena that contradict an accepted theory. Then they examine the methods they used to arrive at the theory, and re-verify the theory. They could either find a fault in the method used earlier, or a mistake in the way the theory was derived. This could change either the method or the theory.

That's why Karl Popper recommended a change in the way we do science. For a long time science was based on the idea of verifiability (the job of scientific method was to verify if a proposed theory was correct or not). Popper argued that the scientific method should check for falsifiability (the scientific method should consider possible situations when a theory could be determined to be false). Falsifiability expresses the limits of a theory's veracity and allows the opportunity for it to be proven wrong. That is how disciplines develop. Similar changes happen in other disciplines, history too.

Relationship between disciplines

Ira: Disciplines are so closely related to each other, and they keep changing. If disciplines keep changing then some day history will become social science, history could become geography. Who knows!

History and social science are so closely related, they are inseparable. When we enquire into the past, we do social science of the past. We find out how people lived, how society was structured, how monarchy worked, how early democratic societies functioned etc. We do the same in social science for the world today. How can we even say history and social science are distinct and independent of each other?

Anubhuti: Well, that is a problematic statement. Questions we ask of the past might come from social science of today. We see caste-based prejudices in our society today. Some historians ask, was caste there all the time in India? When did it begin? How did it work centuries ago? So social science might provide questions we ask of the past, but when we start enquiring about the past we do history, not social science. History is study of the past, whereas social science is study of the present. The method of social science could inform historical method, but finally to study the past we need the historical method. We cannot use the social science method to determine history. This is the way mathematics is necessary for science, but mathematics is not science. We cannot use the scientific method to determine mathematical theories.

Ira: New disciplines keep coming up, methods and questions asked by a discipline change, experts in a discipline keep fighting with each other. What do we educate children in?

Beyond the politics of knowledge

Anubhuti: That is the question we need to ask ourselves. Are we educating children so that they understand disciplines and possibly become experts in some of them, or do we want to train them in politics of knowledge? If we see controversies as politics of knowledge, then we would teach them to take one stand or the other. If we do that we are reducing education to training or politics. But education is neither. An educated person has to know about all disciplines, and be trained experts in some.

Ira: That is interesting, but how does that help me deal with this changed history textbook?

Anubhuti: This history chapter you spoke of is presenting two different theories both using the methods of writing history. Students are bound to think, how do historians know that Rana Pratap won the battle? Why do other historians think the battle was inconclusive? This provides a great opportunity for us to teach students the method of history.

Ira: Alright, that is what you mean to say. I get it. I can use the controversy about the Haldighati battle to teach children how historians find out about events, the methods they use to verify them and how they arrive at a narrative. Then we show how different historians come up with different narratives, each of them based on true events but different ways of interpretation.

You know, there could be much more to this battle than is written in the textbook. How did historians find out why Akbar attacked Rana Pratap's kingdom again? What is the definition of winning and losing? What did winning mean to Rana Pratap and Akbar? We need to know the historian's method, their sources and their way of interpretation, so that we can teach children history rather than just a laundry list of facts that our favourite historian says.

As teachers we should be unbiased and lead children into disciplines. That way they will not be at the mercy of experts. But it feels quite strange that disciplines are so closely related to each other, they depend on each other, some of them like geography and biochemistry are a combination of two or more disciplines. What is the logic? Were they products of academic politics?

Anubhuti: "Well, some politics definitely happens among academics, but separation of disciplines was not always the result of bad politics. Just 500 years ago, all knowledge was called philosophy. When humans learnt more about one area, they realized that much more work needs to be done and we need different concepts and methods. Natural Science was the first to separate, initiated mainly by Galileo's work. At some point later social science became separate, then psychology. These are disciplines related to human beings. Gradually knowledge branched into many disciplines."

To organize knowledge for the curriculum, we do not have to follow this history of disciplines or their politics. Paul Hirst, a philosopher of education, pointed out that human knowledge is organized in seven different forms. The seven forms are mathematics, natural science, human sciences, religion, ethics, aesthetics, and philosophy. Some of them sound like disciplines but they are not. Some of them map to multiple disciplines. Some disciplines map to multiple forms of knowledge.

These seven forms of knowledge are distinct from each other. They have distinct objects of study, concepts, and methods. A good curriculum has theories determined in each form of knowledge, in the initial years. In higher grades, concepts, conceptual relationships and methods of each form of knowledge are introduced. Then they are segregated into disciplines where students are trained in particular disciplines.

We teachers have to know the difference between different forms of knowledge and keep that in mind when we teach children, even in earlier grades.

Ira: This makes teaching and learning disciplinary controversies productive and exciting. But I have many questions about forms of knowledge. What are concepts, conceptual relationships? How are methods different in different forms of knowledge? Why? Why can't we get rid of these and just go with a theme based curriculum?

Anubhuti: Yes, we need to understand this better. Let's talk when we meet tomorrow.

To be continued…

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