

Response to: The Past, Present, and Future of the IBL Community in Mathematics

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The Inquiry Based Learning Community seeks to be as inclusive as humanly possible. Every single person I know in this community actively tries to make the IBL experience an important positive contribution to education for all. The goal of the current IBL community is not in question. The challenge this paper raises is how to deal with history that we wish were different. It is difficult enough to change the future. It is impossible to change the past. So what should we do?

One of the most basic strategies for solving problems is to work on them—and to enjoy difficulties. Inquiry Based Learning helps students to think more clearly not only in mathematics, but in everything they do. So the IBL community has a golden opportunity to face head on and to model a constructive approach to one of the challenges that confronts humanity frequently, namely, how to deal with unsavory features of history. Specifically, how do we deal with historical figures who made positive contributions in one area while also holding beliefs, taking actions, or having personal traits that were odious?

One of the most effective strategies of problem solving is to understand both the question and all features of the issues with as much depth and nuance as possible rather than being content with summary statements that gloss over details. When we teach students about statistics, for example, one of the most important conceptual goals of the lesson is that a one-number average—a mean or a median—does not tell the whole story of a distribution. The mean salary of employees in a company does not necessarily indicate the experience of most workers. When leading politicians seem satisfied with one-word summaries of complex issues, thinking people should be appropriately concerned.

Examples of complex features of history are the people involved. Every person embodies a whole constellation of traits. Taking the trouble to try to understand historical figures (or, indeed, living people) with more nuance tends to have a moderating effect—extreme adulation or extreme opprobrium may be tempered by the knowledge of circumstance. We can still respect or disrespect various qualities of people, but the reality of strengths *and* weaknesses tends to dampen enthusiasm for viewing any person as a god or a devil.

The case of the current IBL community and R.L. Moore is a great example of the challenge of dealing with an historical figure with a whole spectrum of qualities, good and bad. There is no mystery about where Moore's racism came from. Moore was born in 1881 in Texas—just 16 years after the conclusion of the Civil War. Moore was inculcated into the opinions of the nineteenth century South starting at birth, and certainly his given names Robert Lee (after Robert E. Lee who commanded the Confederate Army) suggest the strength of opinion of his family in their sympathies in regard to the Civil War. So it is not surprising that R. L. Moore had social opinions consistent with those of his family and the local culture of his time. Yet Moore's unwillingness to change his own biases over time presents us with a great object lesson, namely, all of us would do well to continually doubt our own opinions and to be willing to change.

One feature of IBL instruction is that it promotes independent thinking. And independence of thought has a self-correcting effect. Students of Moore did not adopt his political opinions. They learned independence. So even though Moore himself never allowed a Black

student in his classes, Moore's first Ph.D. student (at Penn), J.R. Kline, was the Ph.D. adviser for two of the first three mathematics Ph.D.s awarded to African Americans in the United States.

In one of those delightful ironies of history, some of the recent studies of Inquiry Based Learning methods suggest the possibility that the student-centered methods that are evolving from strategies of instruction that Moore is famous for may be especially effective in nurturing the mathematical potential of those same groups that Moore himself was biased against.

The history of the evolving methods of instruction under the IBL umbrella is complex and continuing. R.L. Moore obviously played a seminal historical role in how IBL methods of today came to be. But his methods evolved from previous instructional strategies. We could trace the history to Socrates, but more recently, the history includes the laboratory method of instruction that E.H. Moore (no relation to R.L. Moore) used at the University of Chicago. Over the last few decades, many of us in the IBL community have been developing a whole range of interactive strategies of instruction that effectively help students to learn to think for themselves. These methods include features that were not part of Moore's strategies, such as collaboration and the use of technology. And none of us thinks that we have reached perfection. Perhaps it is sufficient to acknowledge the historical reality and learn from it, and then to celebrate and encourage the ongoing adventure of creating even better, more attractive and inclusive teaching and learning methods.

As mathematicians, we understand that challenging problems are frequently not solved instantly. Genuinely difficult problems often require a series of attempts and failures on the road to success. So I hope both currently active participants in the IBL community and others who are not yet actively involved will together take this opportunity to demonstrate creative problem-solving skills for which IBL is known and discover and implement effective responses to the problem of dealing with undesirable history that are not only good for the IBL community, but can be applied elsewhere as well.

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