

# Critical Education

Volume 13 Number 1

February 25, 2022

ISSN 1920-4125

---

## *(Re)Considering STEM Education Sustaining critiques and new directions*

Mark Wolfmeyer  
*Kutztown University of Pennsylvania*

John Lupinacci  
*Washington State University*

Citation: Wolfmeyer, M. & Lupinacci, J. (2022). (Re)Considering STEM education: Sustaining critiques and new directions. <i>Critical Education</i> , 13(1), 83-85.
--



Readers are free to copy, display, and distribute this article, as long as the work is attributed to the author(s) and *Critical Education*. More details of this Creative Commons license are available from <https://creativecommons.org/licenses/by/4.0/>. *Critical Education* is published by the Institute for Critical Educational Studies and housed at the University of British Columbia.

Welcome to the third and final issue of our themed series (*Re*)*Considering STEM education*. As co-editors, many thanks to the anonymous reviewers and leadership and editors of *Critical Education* for sustaining the critique of STEM Education and supporting our collective inquiries into a better vision for curriculum and practice that matches 21<sup>st</sup> century social and environmental challenges. This final issue builds and extends work from the first and second collections of articles, appearing as Volume 8 Issue 15 (2017) and Volume 9 Issue 16 (2018), respectively. As in all issues, we aimed to offer a space for clear critique of the false and empty promises of mainstream STEM Education scholarship, from its unwavering belief in superiority of STEM over other knowledges to the vain utterances of equitable STEM instructional goals, and its countless other pitfalls. In this issue we provide three new pieces that continue to push STEM Education outside its mainstream discourses from authors who live within but push at the boundaries on a daily basis.

The issue begins with Bazzul, a science education theorist, who directly confronts one of mainstream STEM education's primary pitfalls. He articulates and confronts science education's refusal to engage in politics, suggesting that this status quo furthers systems of power and oppression including but not limited to white supremacy, heteronormativity, ableism, social class hierarchies, and neoliberal ideology and practice. Bazzul suggests pathways forward to interrupt such a "political occlusion" in our work that, in reality, is highly political for its maintenance of social relations as they are. He also critiques the shortcomings of so-called progressive tactics that fall short in interrupting STEM's too often apolitical and highly consequential politics before providing potentialities for a political imagination that STEM can realize in the future. Although Bazzul's article focuses directly on science education, the work speaks to all aspects of STEM. As two mathematics educators, we know all too well that our work has often been rejected because, to readers in the mainstream, it appears to prioritize politics over mathematical content.

As the second article, Riggs-Stapleton offers on-the-ground realities of what it means to work in mainstream STEM education. Again, specifically as a science educator, she provides a feminist, embodied analysis of her experiences in the academic landscape. Interpersonal moments as empirical data bring to light what we theorize and feel through our work, that STEM education continues status quo social relations of power and oppression. We expect readers to resonate with her narrative inquiries and analyses on academic moments like the academic job interview and her feminist framing pointedly directs our attention to challenges that exist for scholars in the field. Giving empirical support to Bazzul, Riggs-Stapleton also analyzes moments when her politics, what she terms "humanist science research," are openly rejected by others in the discipline.

The final piece for our issue is our own contribution, bringing what is known about STEM Education's shortcomings to our collective lived-realities of the global pandemic. The pandemic has proved to be a polarizing, highly controversial, and prolonged situation. To be clear, we are by no means reinforcing vaccine hesitancy and refusal; our title calls attention to the current historical moment and STEM Education's contribution to it. Primarily we focus on how this moment reveals that even amidst the undeniable victory of science to provide a quick vaccine as strong defense to a worldwide threat to life—its structural problems, lack of access to high quality interdisciplinary and culturally relevant STEM content, as well as the curricular, pointing for example to STEM's refusal to incorporate other ways of knowing—such as diverse Indigenous knowledges—as we face social and environmental problems today. We suggest pathways forward that prioritize teaching what STEM is, as a project valuing peer-reviewed knowledges always tied to healthy skepticism that enables us to value and trust scientific consensus in our decision-making, and our everyday capacities to recognize what it is not, superior knowledge for elites to decide is important

and the masses to follow. We hope this will open the door for further thinking and critique on the ways that STEM can be seen both as a complex problem and a much-needed solution, and that the public deserves much improved opportunities to understand its real potential.

Although this will be the final issue of our special series here, we do hope that STEM scholars continue to seek out opportunities with *Critical Education* to critique STEM as well as open up its new pathways to sustain critique and offer new directions in other spaces as well. The projects we have started, as a collection of 14 articles across the three issues, are but initial developments in highly influential work to advance STEM Education for what it needs to be in these 21<sup>st</sup> century times. Thanks again to all author contributors over the past 4 years of the series and to all readers as we continue together, what we know and expect you all to agree, are the *most valuable* efforts in the discipline.

# Critical Education

[criticaleducation.org](http://criticaleducation.org)

ISSN 1920-4175

## Editors

Stephen Petrina, *University of British Columbia*  
Sandra Mathison, *University of British Columbia*  
E. Wayne Ross, *University of British Columbia*

## Associate Editors

Abraham P. DeLeon, *University of Texas at San Antonio*  
Adam Renner, 1970-2010

## Editorial Collective

Faith Agostinone-Wilson, *Aurora University*  
Wayne Au, *University of Washington Bothell*  
Jeff Bale, *University of Toronto*  
Jessica Bacon, *Montclair State University*  
Grant Banfield, *Flinders University*  
Dennis Beach, *University of Gothenburg*  
Amy Brown, *University of Pennsylvania*  
Kristen Buras, *Georgia State University*  
Paul R Carr, *Université du Québec en Outaouais*  
Lisa Cary, *Murdoch University*  
Antonio J. Castro, *University of Missouri*  
Erin L. Castro, *University of Utah*  
Alexander Cuenca, *Indiana University*  
Noah De Lissovoy, *University of Texas at Austin*  
Gustavo Fischman, *Arizona State University*  
Stephen C. Fleury, *Le Moyne College*  
Derek R. Ford, *DePauw University*  
Four Arrows, *Fielding Graduate University*  
David Gabbard, *Boise State University*  
Rich Gibson, *San Diego State University*  
Rebecca Goldstein, *Montclair State University*  
Julie A. Gorlewski, *University at Buffalo, SUNY*  
Panayota Gounari, *UMass, Boston*  
Sandy Grande, *Connecticut College*  
Todd S. Hawley, *Kent State University*  
Matt Hern, *Vancouver, BC*  
Dave Hill, *Anglia Ruskin University*  
Nathalia E. Jaramillo, *Kennesaw State University*  
Richard Kahn, *Antioch University Los Angeles*  
Ashwani Kumar, *Mount Saint Vincent University*  
Ravi Kumar, *South Asian University*  
Harper Keenan, *University of British Columbia*  
Kathleen Kesson, *Long Island University*

Saville Kushner, *University of Auckland*  
Zeus Leonardo, *University of California, Berkeley*  
Darren E. Lund, *University of Calgary*  
John Lupinacci, *Washington State University*  
Alpesh Maisuria, *University of East London*  
Curry Stephenson Malott, *West Chester University*  
Gregory Martin, *University of Technology Sydney*  
Rebecca Martusewicz, *Eastern Michigan University*  
Cris Mayo, *West Virginia University*  
Peter Mayo, *University of Malta*  
Peter McLaren, *Chapman University*  
Shahrazad Mojab, *University of Toronto*  
João Paraskeva, *UMass Dartmouth*  
Jill A. Pinkney Pastrana, *Univ. of Minnesota, Duluth*  
Brad Porfilio, *San Jose State University*  
Marc Pruyn, *Monash University*  
Lotar Rasinski, *University of Lower Silesia*  
Leena Robertson, *Middlesex University*  
Sam Rocha, *University of British Columbia*  
Edda Sant, *Manchester Metropolitan University*  
Doug Selwyn, *SUNY Plattsburgh*  
Özlem Sensoy, *Simon Fraser University*  
Patrick Shannon, *Penn State University*  
Steven Singer, *The College of New Jersey*  
Kostas Skordoulis, *University of Athens*  
John Smyth, *Federation University Australia*  
Beth Sondel, *University of Pittsburgh*  
Hannah Spector, *Penn State University*  
Marc Spooner, *University of Regina*  
Mark Stern, *Colgate University*  
Peter Trifonas, *University of Toronto*  
Paolo Vittoria, *University of Naples Federico II*  
Linda Ware, *SUNY Geneseo*