

Teaching As Research March 7, 2022



Elizabeth A. Stuart, Vice Dean for Education, Professor Mental Health



Gundula Bosch,
Senior Scientist, W.
Harry Feinstone
Department of
Molecular
Microbiology and
Immunology



ME Hughes, Associate Scientist, Population, Family and Reproductive Health



Roza Selimyan, Associate Scientist, Biochemisty and Molecular Biology



Maggie Wear,
Assistant Scientist,
W. Harry
Feinstone
Department of
Molecular
Microbiology and
Immunology

The material in this video is subject to the copyright of the owners of the material and is being provided for educational purposes under rules of fair use for registered students in this course only. No additional copies of the copyrighted work may be made or distributed.

Teaching as Research

- a toolbox -

Part 1: Introductory Workshop

Offered by the BSPH Teaching Council

Motivation for Scholarship in Teaching and Learning

Opportunities!

- Look at your teaching in a systematic way
- Make informed decisions about what goes well and where you need to tweak
- Help nurture a culture of teaching excellence
- Evolve your teaching philosophy
- Publish your work and gain visibility
- Join a community of dedicated educators

Yes, it take some time and effort, but: IT IS TOTALLY WORTH IT!

What elements of my teaching can be used as the basis for educational research?

- Learning theory
- Needs assessments
- Curricula (program outlines, course concepts)
- Instructional designs / educational methods, modules, assignments
- Strategies to enhance DEI, interdisciplinarity, feelings of belonging and student wellbeing, etc
- Assessments and outcomes
- Implementation guides
- Recommendations for best practices
- Integrative work

Without data collection

Descriptions

- Reports
- Perspectives
- Essays / op-eds
- Reviews
- Books & chapters

With data collection

RESEARCH!

=> Rigor, Evidence

- Learning theory (data supported)
- Needs assessments
- Evaluation and assessments
 of learning outcomes
 (courses, programs,
 educational methods)
 - Formative
 - Summative
- Assessment instrument validation
- Meta-analyses



With data collection

RESEARCH!

- Educational Research can involve human subject data!
- May require Institutional Review Board (IRB) approval
- Contact your IRB officer in the planning phase!
- For first time consultations:
 - BSPH IRB Navigator Tobey
 McGuinness (IRBNav@jh.edu)
 - Resources slide

JHU Policies on enrolling students in educational research

Upcoming:

Stay tuned!

Dean's Teaching
Workshop on Ethics
Requirements in
Educational Research

Dr. M.E. Hughes

- I am brand-new to Teaching as Research
 - Though I've been interested in the idea for several years
- First step: identify project
 - Revision of 2-credit course required of all MPH students
- Second step: reframe existing revision process as TAR
 - View revisions holistically
 - Think like a researcher

- Current step(s): structured approach to revisions
- Project addresses course concepts and instructional design
- Identify current issues, desired outcome and challenges for each
 - What aspects of concepts/design should be changed? Why?
 - What do I want the revisions to achieve?
 - What are the obstacles to these changes?

- Theory
 - O How do write about the development of a course?
 - Special Issues, Identify a unique aspect of your course
 - Theory COSL
 - Publication experience
 - Less likely "reviewer #2"
 - Opportunities, limitations
 - Open ended, lots of versions
 - No data, just theory
 - Where in the stage of the TAR continuum is that project located?
 - Conceptual, Best Practices, DEI enhancement, Student well being
 - What are the next steps?



TEACHING IN A TIME OF CRISIS

January/February 2021 Volume 22 Issue 1 ev22i1.2537

Critical Online Service-Learning Pedagogy: Justice in Science Education

R. Tyler Derretha,b and Maggie P. Wearc,d

^aSOURCE, Community Engagement and Service-Learning Center at Johns Hopkins University, Schools of Public Health, Nursing, and Medicine, Baltimore, Maryland, USA

^bHealth, Behavior and Society Department, Johns Hopkins Bloomberg School of Public Health, Baltimore Maryland, USA

^cMolecular Microbiology and Immunology Department, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

^dR³ Center for Innovation in Science Education (R³ISE), Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

ABSTRACT in the year 2020 the world changed dramatically. We went from busy lives spent largely away from home to spending most of our time at home while daily facing deepening national crises. With the violent, needless death of George Floyd, the simmering tensions around race in America boiled over, sending thousands into the streets to protest racial injustices. The world of science education has largely avoided discussing racism in our classes, but we can no longer ignore it. The events of the spring and summer have highlighted our need to integrate conversations and reflections on justice into science education. In this work we argue that service learning can build this understanding from both theory and experience. Utilizing a critical online service-learning framework, we have developed a service-learning course that incorporates dialogic communication, cross-contextual reflections, and positioning oneself as an ally. This perspective allows science and the community to prioritize relationships, humanity, and reflect on our roles as professionals, utilizing the online interacting space. This course, taught at the beginning of the pandemic, focuses on critical online service-learning pedagogy online, and the compounding issues brought on by the pandemic fisted.

Received 20 November 2020 Accepted 5 February 2021 Published 31 March 2021

Section: Teaching in a Time of Crisis.

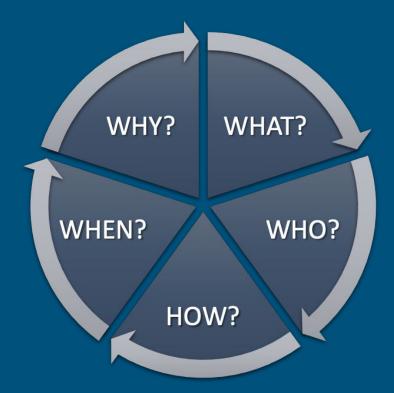
DOI: https://doi.org/10.1128/jmbe.v22i1.2537.

[†]Supplemental materials available at http://asmscience.org/jmbe.

Copyright © 2021 Derreth and Wear. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International license.

- Data
 - O Data about your course share it with the world!
 - Evaluations (3 years, n=21) before and after
 - Determining key areas of student development
 - Reflections and how they change perspective
 - Collaboration can be very helpful
 - Opportunities, limitations
 - Sharing your data and learning experiences
 - Builds on theory but requires much more proof
 - Where in the stage of the TAR continuum is that project located?
 - Assessments/Evaluations, Learning outcomes, Interdisciplinary
 - What are the next steps?

Program evaluation

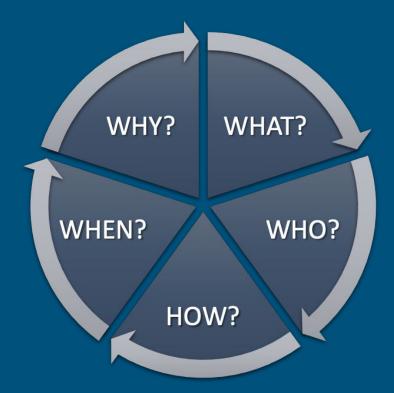


- Program evaluation: Dickeson's Prioritization Model (1999)
 - 1. The history, development, and expectations of a program
 - 2. External demand for the program
 - 3. Internal demand for the program,
 - 4. Quality of program inputs and processes
 - 5. Quality of program outcomes
 - 6. Size, scope, and productivity of the program
 - 7. Revenue and other resources generated by the program
 - 8. Costs and other expenses associated with the program
 - 9. Impact, justification, and essentiality of the program
 - 10. Opportunity analysis of the program

Program evaluation: The QPC Model (Comstock & Booker, 2009)

Quality	Potential	Cost
External validation	National and local demand	Total student credit hours produced per major
Faculty and student inputs	Internal impact	Discount rate
Student outputs	Essentiality to mission	Cost per student, credit hour
Curricula and program factors	Other justification, future opportunities	Contribution margin (net tuition revenue minus direct costs per program)

Program evaluation





Where can educational work be published?

Journals
with or without
education focus

Public Health

- Society for Public Health Education https://www.sophe.org/journals/
 - Pedagogy in Health Promotion: The Scholarship of Teaching and Learning
 - Health Education & Behavior
 - Health Promotion Practice
- Frontiers in Public Health -PH Education and Promotion



Where can educational work be published?

Journals
with or without
education focus

Life Sciences

- CBE Life Sciences
- Journal of Microbiology Education
- mBio
- Am. Soc. for Biochemistry and Molecular Biology
 - Education sections
- also Science, Nature, eLife, etc

Medicine

- The Medical Teacher
- Academic Medicine

Some more examples

Where can educational work be published?

Monographaphs & chapters

Educational News Outlets, Websites, Online Education Communities

Chronicle of Higher Education

https://www.chronicle.com/

Inside Higher Ed

https://www.insidehighered.c om/

Times Higher Education

https://www.timeshighereduc ation.com/

The Teaching Professor

https://www.teachingprofesso r.com/

JHU Press

Springer, Taylor & Francis, Jossey Bass

Teaching as Research is for everyone!!

- Students / Teaching assistants
- Faculty and staff of all levels!
- Join a Community of Practice!
 - BSPH Teaching Council
 - o CTL
 - JHU Teaching Academy
 - CIRTL

Teaching as Research is for everyone!!

- What is next?
- Any muddy points?
- How can we best help you get started?
- A teaching chat?
 Another workshop?
 Individual consultation?
 Else?



References and Resources

IRB-related resources:

- JHU Policy on Enrolling Students in HSR: JHU Policy on Enrolling Students in Human Subjects Research Policy (GEN011)
- Use of Student Education Records in HSR: Research in Schools: Use of Student Education Records in Research (IRB FERPA guidelines 2020)
- Protection of Pupil Rights Amendment (<u>PPRA</u>)
- Bosch G, Casadevall A. Graduate Biomedical Science Education Needs a New Philosophy. mBio. 2017 Dec 19;8(6):e01539-17.
- Bosch G. Train PhD students to be thinkers not just specialists. Nature. 2018 Feb 15;554(7692):277.
- Derreth RT & Wear MP (2021): Critical online service-learning pedagogy: Justice in science education. JMBE 22(1). ev22i1. 2537
- Fitzgerald A & Bosch G, The Health Scholar's Toolbox, Springer 2022. in press
- Lambert M (2012): A beginner's guide to doing your education research project. SAGE Publications Ltd. ISBN-13: 978-0857029812
- Laverty C (2018). Educational Research: A Practical Guide. Queens University, Center for Teaching and Learning; https://ctlt-cirtl.sites.olt.ubc.ca/files/2020/05/Educational_Research_Guide-May-2018.pdf
- Resnick BA, Mui PC, Bowie J, Kanchanaraksa S, Golub E, Sharfstein JM. The COVID-19 Pandemic: An Opportunity to Transform Higher Education in Public Health. Public Health Rep. 2021 Jan/Feb;136(1):23-26

Chat with us - Building Community!



Gundula Bosch gbosch2@jhu.edu Office: E5139 Molecular Microbiology and Immunology Department



ME Hughs
mehughes@jhu.edu
Office: E4648
Population, Family
and Reproductive
Health



Roza Selimyan
rselimyan@jhu.edu
Office: W8507
Department of
Biochemistry and
Molecular Biology



Maggie Wear mwear1@jhu.edu Office: E5622 Molecular Microbiology and Immunology Department