DIY Open Pedagogy: Freely Sharing Teaching Resources in Psychology

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Editors' Commentary

The philosophy of Open hinges on the simple act of freely and fearlessly sharing one's creative works in service of the greater good. This intent is recognizable even when not accompanied with the formal adoption of an open license. In this chapter, author Jessica Hartnett describes the origin story of her 'not awful and boring' blog, dedicated to the teaching of statistics and research methods. In doing so she discusses some of the limitations of traditional outlets for sharing pedagogical innovations, provides practical tips for those looking to follow her lead, and comments on the career implications of this approach.

Many of the contributions to this book have involved large scale sharing of open resources, the likes of which still involve large organizations (Open Science Framework, Noba, etc.). But there are simple, easier ways to contribute to the free sharing teaching ideas without publishing your own open textbook. In this chapter, I'm going to share with you my experience with two relatively easy ways to share resources about the teaching of psychology. Mostly, I'm going to talk about my blog,[1] dedicated to the teaching of statistics and research methods, but I will also talk some about my experiences as an editor at the Teaching of Psychology Idea Exchange.

Origin Story

I didn't set out to be a blogger about the teaching of statistics. Upon graduating with my PhD in 2009, I started teaching many sections of Psychological Statistics (essentially, Introduction to Statistics but from the perspective of someone with training in psychology) at Gannon University, a small liberal arts university in Erie, PA. I started with two sections per semester and now teach three statistics classes a semester, including Honors and Online versions of the class. Becoming a better statistics instructor is an important professional goal. One way that I wanted to improve upon the class was by incorporating modern, real life examples to reinforce statistical concepts. This approach worked for me across a variety of other psychology classes (Social, Developmental, Introduction) and while Psychological Statistics is quantitatively different (har-har) than other psychology courses, I still wanted to incorporate this teaching technique. Finding examples was easier than I expected: Once I had this goal to find relatable statistics examples, there were everywhere I looked. I'm a news junkie and a Facebook junkie, and statistics and data are enjoying a zeitgeist. For instance, look at the attention and criticism in October 2015 following the World Health Organization's reason classification of processed meats and red meats as carcinogens.[2] While on the surface, this is purely a global health story, but with a little digging, it becomes an example of relative versus absolute risk (What is one's likelihood of developing different kinds of cancer? Do most people consume a serving of processed or red meat per day?), operationalizing a variable (Do Spam and bacon really belong is the same category?), and whether or not proper research methodology was used (WHO made a casual claim based on largely observational research).

One can easily find stories like the bacon story by following certain entities on Facebook and Twitter, like Nate Silver, io9, Pew Research, etc. and paying extra attention to news websites for stories incorporating data. So, I managed to accumulate a bunch of fun examples but no evidence that they were enhancing student learning. As I was on the tenure track, I wanted to provide 1) evidence of teaching efficacy as well as 2) get a scholarship of teaching publication or two under my belt.

My very first foray into the scholarship of teaching and learning was a manuscript published in the journal *Teaching of Psychology* entitled 'Stats on the Cheap'.[3] It contained four original, empirically supported lessons for the teaching of statistics using free or inexpensive internet resources including http://www.gapminder.org/ and https://docs.google.com/forms. However, these four ideas represented just a few of the internet based resources I had found for teaching of statistics. Looking for statistics teaching resources had become a chronically accessible goal for me, and I soon found that I had resources and news stories and examples from a wide variety of largely pop sources, including the Huffington Post, Last Week Tonight, The New York Times, The Daily Show,

The Colbert Report, A.V. Club, Bloomberg Business, National Geographic, The Economist, and Mother Jones, just to name a few.

And my list of resources was quickly outgrowing the Google Document that I was using to organize them. I needed a better way to archive all of my materials. Additionally, the publication of Stats on the Cheap convinced me that there is interest in my approach to the teaching of statistics and I wanted to better serve my profession by sharing my teaching ideas more widely. I am a helper by nature, and I intimately understand the challenge of teaching statistics. Whether your statistics classes are aimed at just psychology majors or a broader student population, you are actively combating math anxiety when you get in front of your classroom. And you aren't just teaching statistics, you are teaching a framework for approaching scientific inquiry, lessons that are desperately needed in a world where statistics and research and polls are increasingly used as forms of rhetoric and persuasion. What we are doing is hard and important. That doesn't mean it can't be engaging and not awful.

So, in February 2012, I established my blog 'Not Awful and Boring,' featuring (to date) 167 free ideas/resources/news stories/web sites/etc. Note: While I don't teach research methods, I think it is impossible for a psychologist to divorce the research methods from statistics, hence, I advertise the website as serving research methods instructors as well. As of November 2015, the blog has been accessed over 70,000 times by users in 192 different countries.

As my blog has grown, I've come to believe that free sharing of teaching ideas via the internet may be the only way to keep up to date with the sharing of teaching resources. I think that because of a) I'm not convinced that every single teaching example needs to be rigorously assessed, b) the sheer volume of statistics resources available online, and c) the limitation of paper textbooks.

Publications are not always necessary for the sharing of 'small' teaching ideas

I believe that the scholarship of teaching is not as well respected as the more traditional scholarship of discovery. I think it is just as valuable and I think it is necessary. Before anyone implements large-scale changes in the way we think about pedagogy, student motivations, and ideal teaching methods, teachers need good science to backup best practices. For a strong example of why such efficacy research is very important, I suggest reviewing the 'learning styles' theory, one that has been disproven but is still widely taught.[4] More good examples for the necessity of teaching efficacy research can be found in the book 'Make it Stick,'[5] which is an in-depth review of the most effective ways in which people learn (interleaving, retrieval practice) and a rebuke against widely used methods (re-reading, highlighting texts) that are not as effective.

In this spirit, when I write scholarship of teaching manuscripts, I tend to concentrate on the assessment of larger, more formal lesson plans that I have used successfully across multiple semesters. Creating the manuscripts is a large time commitment, every bit as rigorous as the more traditional scholarship of discovery. If anything, scholarship of teaching can often time take longer, especially if an entire school year has to lapse in order to collect data from a control class as well as an experimental class.

However, I don't believe that I need to perform efficacy tests in order to demonstrate that each of my 187 blog postings aids in student learning. There aren't enough hours in the day to do so. But practicality is a lazy argument. Instead, I would argue that (1) overarching course assessments provide support for the small examples I provide and (2) teaching ideas are already being shared in public platforms without overly rigorous peer review.

Most universities are under increased pressure from accrediting organizations to formalize assessment and outcome measurement for individual courses. As such, I think that assessment of an individual meme or news story is included as part of the assessment of a class' efficacy. If learning outcomes for an individual instructor's class are met, and that class happens to include a few examples from my blog, then I think that speaks in a small way to the usefulness of the materials I share on my blog. Do I deserve congratulations for the hours of prep and grading and teaching that went into that class's success? Absolutely not. But did I maybe help a bit? I think so.

Another argument against the necessity for formal peer review for every possible teaching idea lays in the fact that there are already avenues for sharing teaching ideas that do not require extensive peer review and revisions of presentations.

When I present my pedagogy research at conferences, it is evaluated by a conference chair or a group of my peers, but not in the same, exhaustive manner that my publications are judged. I have never been asked to make revisions to any of my conference publications. Heck, I've given invited talks at prominent conferences that received absolutely no review.

Another reason that I would argue against the necessity of peer review is because it could also mean that useful, timely learning examples would be withheld from instructors and students. This is especially an issue with the teaching of statistics, because stats are hot right now.

Statistics is enjoying a zeitgeist, and I suffer from an embarrassment of riches.

Statistics is hot right now. Data storage is cheap, many of our social and financial transactions take place in ways that are easily quantified (shopping online, social media website, text messages, phone calls) leading to much data mining via 'big data.' More and more organizations are seeing the potential in data-driven

decision making, which in turn leads to more and more popular sources writing about data and statistics at level that is accessible to an undergraduate. As statistics gets an increasingly extensive treatment from accessible sources, it is less and less feasible to vet every example. Most of the examples I provide address very specific issues related to statistics, but typically within a context that invites further debate about real life issues related to our use of data. For example, a recent posting from fivethirtyeight.com did a fantastic job of illustrating the balance between Type I and Type II error using not abstract ideas, but instead using parole decisions made by the Pennsylvania Department of Corrections. If you make your standards for parole too high, you are going to continue to imprison folks that would not have reoffended (false positive). If you make your standards for parole too lenient, you are going to release repeat offenders (false negative). So, this example illustrates a fundamental concern for all research scientists, but makes it more pertinent to our students by using a concrete example that can spur further discussion about social issues.

Additionally, even without popular sources, there is a lot of news happening in statistics. Use of p-values to determine statistical significance is increasingly under fire, up to and including being rejected by several large research journals. The replication crisis is another source of a lot of writing in statistics and research methods.

Text books take time to write and publish.
Also, copyright issues.

Another way to share instructional resources would be via an edited text. However, many of the resources I suggest are proprietary and perhaps cannot be shared via text book for legal reasons. Additionally, given how long it takes to create a text book, many of the current events that demonstrate an application of statistics will not be current events by the time a book is published. Which leads to a loss of potential teaching aids.

So, those are my arguments for the free sharing of teaching resources. Now, I will provide some practical advice on how to actually do so. My blog has been a success, because I make it easy on my readers and on myself.

Sustaining a teaching blog

Give the people what they want

Presumably, you would like a readership for your blog. Easier said than done. It is difficult to make an impression in the blogosphere. There are already plenty of bloggers out there who share psychology content. Many of them have thousands of Twitter followers, some of them are rock stars in our field. Trying to

add more to that noise may not be the best way for you to spend your time if you are motivated by the possibility of blogging to gain some free advertising/notoriety.

How have I sustained my blog and increased my audience? I provide a specific resource to college and high school teachers of statistics. My audience is largely overworked and they appreciate a one-stop repository that they can return to when they want to add content to a course or lecture. Not only do I have many examples to share, but they are organized by topic, making it easier for my readers to quickly find what they are looking for.

My regular readers also count on me as a consistent resource. I update my blog every single Monday, and sometimes more frequently. I also share additional links/retweets via the Twitter account associated with my blog.

In order to stay up to date with the blog, I give users the options to follow the blog via email, Google+, LinkedIn, and I maintain a Twitter account that is used solely for the purpose of announcing new blog posts and sharing tweets related to the teaching of statistics and research methods.

Make it easy for yourself

To make blogging about teaching easy, I need to return briefly to one of the ways of making your blog easy on your reader that also makes life easier for a blogger: Do not try to compete against pre-existing resources. Instead, figure out what unique, helpful contribution YOU have to make to serve your peers. I spend too much time on the internet. I enjoy helping and connecting with others. I love following the news. I teach a bunch of statistics classes. Finding material for my blog is not a chore. Frankly, it just means that I'm awake and probably need to spend less time on Facebook.

Because I know who I am and what I am good at, I have a pretty narrow focus and narrow audience. I'm not trying to be the biggest psychology blogger out there. I'm not wearing myself out by expanding my scope in order to increase my number of pages views. Perhaps this is limiting in some ways, but it keeps my work focused and allows me to serve my colleagues better. Again, I have been an overwhelmed statistics instructor, struggling to make my class relevant in the eyes of my students. As such, I have a sense of what my readers will like and what they will ignore (a sense that is informed by user data that Blogger collects). I also deeply believe that statistics are a very important topic for everyone to learn. If you are considering a blog, I would strongly suggest the advice from above: Figure out who you are and what you passionately desire to share with your colleagues. What unique skill or knowledge do you have to pass along? While I didn't do this, it may also be useful to see what other competition there is for your specialty area. For example, you may be very enthused about the teaching of social psychology, but can you realistically

compete/create an audience/offer something unique and different from Jonathon Mueller's CROW website?[6]

So, don't reinvent the wheel. Similarly, use any and all technological shortcuts that you can. While my blog has become a way for me to share ideas with my peers, the origins of this blog are not entirely altruistic. I tried and failed to list all of my teaching resources is a big old Google Document. That became unwieldy and I decided to move all of my ideas into a blog, using the blog host Blogger.[7]

The decision to go with Blogger was based purely on the fact that I was already a Google user and Blogger is affiliated with Google and I was not motivated to do an exhaustive search for the very best blogging host on the internet but I am motivated to have one less password to memorize.

Another reason I went with a blog is because I did not want to create a website. I didn't want to learn HTML, or how to use an HTML editor, or work within the confines of a free website with the limited resources/advertising heavy. I didn't want to overly concern myself with aesthetics. I did not want to pay a web designer. So a free blog was a more reasonable format for me. Additionally, as I update this resource weekly, and every new resource is shared as a new blog post.

Another nice feature of Blogger is the ability to easily create and edit drafts of my blog posts. Let's say that I see an interesting Tweet from FiveThirtyEight. I copy the URL into a new blog post and I can save the post without publishing it. There are typically another two or three drafts and edits before the resource is ready for sharing. Sometimes, I use screen grabs from the original resource (when applicable) to illustrate why I think this is a useful resource to share. Then I queue up the blog post. Typically, I have about ten blog posts that are scheduled and ready/nearly ready for publication and another five or six that still require a fair amount of editing. This is especially nice when I know I'm going to be busy in at specific times in the future. For instance, I'm currently pregnant with my second child and I have several blog posts ready for publication right around his due date and for several weeks following his arrival.

Another motivation for blogging is the fact that I am comfortable with shameless self-promotion. I've been able to 'advertise' my own scholarship of teaching and learning publications, conference presentations, and a co-authored book. Rest assured, upon publication, this book will also be shared via the blog.

Alternative to a dedicated blog

There is a good chance that my recommendations for blogging your teaching resources actually convinced you to never, ever want to start a blog. Good on you for knowing yourself. However, this doesn't mean that you don't have resources to share.

There are other ways to provide service to your profession. I do so as a contributing editor to the Society for the Teaching of Psychology's Teaching of Psychology Idea Exchange.[8] My main contributions there are in Industrial-Organizational Psychology, a class I only teach every other year (and, thus, does not constitute a chronically accessible goal). As with statistics, many of these ideas come from news stories related to course content, such as a recent and highly publicized decision made by a large consulting firm (Accenture) to do away with annual evaluations.[9]

While I concentrate on I/O contributions, ToPIX includes contributions for every specialty area within psychology and each area has several categories (In the News, Audio/Visual, Classroom Lesson Ideas).

Anyone can apply to submit resources (email the editor at TOPIX@TeachPsych. org for instructions on how to do so). If you apply to submit resources, and do so frequently enough, you may be invited to become an Assistant Editor. This distinction is especially important for those of us on the tenure track, as there are many, positive ways that open sharing can demonstrate either scholarship or service to one's profession.

Career implications for open access teaching resources.

In addition to organizing my thoughts, sharing with my peers, and self-promotion, my blog and work with ToPIX serve my broader career goals. My employer recognizes and rewards the scholarship of teaching and learning. My blog meets my university's requirements that teaching scholarship must be professional, communicated, and peer-reviewed. Now, we know what these requirements look like when it comes to a traditionally edited and published manuscript (a presentation at a juried professional conference or a peer-reviewed article in a journal).

My blog is certainly communicated to the public. I have the Google Analytics data to demonstrate my growing readership. The content of my blog make it professional. No pictures of my dog or my fancy dinner whilst on vacation, just statistics. Additionally, if you peruse my Twitter following, you can see that the majority of my followers are scholars of data science and psychology. Finally, I have elicited peer evaluations for my blog. As such, I 'count' my blog as scholarship of teaching. However, you should proceed carefully. There are probably still people on your promotion and tenure committee that will have a negative knee-jerk reaction to you listing a blog on your application for advancement if you don't explicitly explain how your blog is a professional contribution.

My work as an Assistant Editor for ToPIX and the Society for the Teaching of Psychology is recognized as national service to my profession. Additionally, I have served on multiple committees for the Society for the Teaching of Psychology, which creates a cohesive narrative of the service I have provided for my profession.

Alternately, a teaching blog could also be considered national service to the profession. However you feel comfortable presenting you work for the purpose of promotion and tenure, I suggest you quantify your argument. I have Blogger as well as Google Analytic data about my blog. In addition to simple page views, this data demonstrates that my readership has increased over time as well as the fact that my blog has a global audience. I also have Twitter data that can demonstrate number of followers.

Conclusion

Teaching is hard. Teaching statistics is really hard, but made easier with engaging examples. We live in a time where many such examples are available freely and easily accessible via the internet. I have focused my efforts on sharing such examples that are relevant to the teaching of statistics, but there are plenty of other areas of psychology that could use a focused blog.

Notes

[1] Not Awful and Boring, n.d.
[2] WHO, n.d.
[3] Hartnett, 2012.
[4] Willingham, Hughes & Dobolyi, 2015.
[5] Brown, Roediger & McDaniel, 2014.
[6] Mueller, n.d.
[7] Blogger, n.d.
[8] ToPix, n.d.
[9] Cunningham, 2015.

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