Hacking the curriculum: How to teach data reporting in journalism schools

BY SAMANTHA SUNNE
PUBLISHED 10/13/16 7:08 AM

Journalists and educators largely agree at this point that by the time journalism students graduate they should have some experience with data. The Dow Jones News Fund, one of journalism's most prestigious education programs since the 1950s, debuted a data internship this year. Data has become a more common topic at education convenings, and NICAR, a community devoted entirely to data journalism, is one of the fastest-growing organizations in the industry.

"It happens every year, just the same. Papers are posted to a board at NICAR seeking journalists with tech skills; journalists tweet encouragements that any young person wanting a job in journalism should learn data and coding," USNews data editor Lindsey Cook wrote in a paper called "Why journalism students don't learn Computer Science." "This is what the young whippersnappers should learn! If only there were more of this!"

The reality for most schools, Cook acknowledged in an interview, is they can't easily make the kind of sweeping changes this would require. Schools might not have access to the right people, or the funds to take on new faculty, or even the freedom to get a new course approved by higher-ups.

> **"**
>
> *Schools might not have access to the right people, or the funds to take on new faculty, or even the freedom to get a new course approved by higher-ups.*
>
> **"**

For this report, we interviewed more than a dozen reporters, editors and educators and identified three foundational ways to overcome these obstacles and incorporate data journalism into J-school teaching. The following sections will describe the pros and cons of these approaches and how others can adopt them.

Last year, the Columbia Journalism School conducted a review of 113 journalism programs and found that 40 percent didn't have a single class with a data component.

The study found that, rather than adding data to the curriculum via its own class, it should be integrated into many journalism classes, starting with the course that first introduces students to the basics of reporting.

"Our central recommendation is for journalism schools to treat data and computation as core skills f

"Our central recommendation is for journalism schools to treat data and computation as core skills for all students," the authors wrote. "Data journalism must be taught as a foundational method in introductory classes, a distinct theme in media law and ethics, a reporting method suitable to any specialized reporting course, and a subject in which interested students can pursue advanced coursework or a concentration."

> **"**
> *Rather than adding data to the curriculum via its own class, it should be integrated into many journalism classes*
> **"**

This is a separate endeavor from the data used in classes like web design or web analytics, which tackle different digital foundations like HTML and viewer counts. The truth is, more and more data is being released into the world, and sources and consumers alike are becoming more adept at handling it. MaryJo Webster, who teaches a data course for undergraduates at the University of Minnesota, said data should be seen as a basic checkbox for journalism education, just like conducting interviews or reading documents.

"I'm worried that if we're not teaching them in the beginning, then they're starting to develop bad habits," she said. She gave the examples of taking a PR rep's word without question, or accepting a summary report rather than forming a conclusion on one's own. "We're training them to give up," she said. "Too many of my students, who are seniors when they get to me, have already got those habits when I get to them."

Moving data into the introductory classes would expose students to the power of data early on, even if they're just learning the basics when it comes to technology. This approach to teaching would also avoid some of higher education's biggest obstacles, like finding new staff, or acquiring approval to alter a whole curriculum. This paper will outline some solutions to these obstacles, and explore some ways forward to reach a point where all journalism students leave school with some data skills.

This paper explores some ways to make sure all journalism students leave school with some data skills. 🐦

Option 1: Hire temporary staff

Perhaps the biggest challenge universities face is that the staff they have on hand aren't as skilled in data as their students need them to be.

Teaching teachers to use data, University of Illinois professor Brant Houston said, may not be the best approach. There are a few, he said, who take it upon themselves to learn and pass the learning on to their students. One of them is Dustin Harp at the University of Texas-Arlington, who took a lynda.com

course so she could teach her students in turn.

But many, Houston said, have achieved full, successful careers by the time they come to teach, and in some cases, may be close to retiring themselves. "I think it's more difficult to go that way," Houston said. "You have a lot of really good journalists who never did data, who are teaching in journalism schools."

So how can schools teach data, if their teachers can't? The most popular route seems to be hiring outside staff on a non-permanent or even volunteer basis.

Dean Sheila Coronel said Columbia University has had success with hiring TA's and former students fill in. For example, one of Columbia's best professors asked a former student to come talk about data in her food writing class. To make sure these student teachers are up to snuff, Coronel said they are paired with professors and slowly given more responsibility. Many guest lecturers are recent grads, Coronel said, but another option would be to find adjuncts from the professional world.

That's the approach taken by the New School in New York. True to its name, the New School's journalism program is only two years old, and doesn't have the alumni network that other schools have. Instead, the New School "embeds" data reporters in each of the three core journalism courses. The visiting staff lecture for a total of about 10 hours a semester. These guest lecturers find ways to work data into what the students are already learning.

> "
> *The New School 'embeds' data reporters in each of the three core journalism courses.*
> "

Ryann Grochowski Jones, for example, dug up census data to contribute to a class project on gentrification in Harlem. This data, she said, could indicate changes in a neighborhood over time, just like going and talking to people on the streets in Harlem could. This data component is part of the school's first course, and for many students, their very first experience with journalism.

"I wish I had been introduced to data as an undergraduate student, like how these students are now being introduced," said Jones, who works full-time as a reporter at ProPublica. "Students should at least be aware of data and what it can do for your reporting."

Heather Chaplin, who designed the program, said the New School had the "tremendous advantage" planning its entire curriculum around what journalism looks like today. "We felt you just can't approach contemporary journalism without a data component," she said. "We didn't want things like data to be 'ghettoized.' We wanted a more holistic approach."

Rather than depending on an alumni network, Chaplin leaned on her professional network of

journalists in New York City. The New School faces the same challenges as Columbia in making sure these outside staff — many of whom do not have teaching experience — are a good fit in academia. T first year, Chaplin said, they were too ambitious in how much the data embeds could teach.

"It's a lot of work for the professors and the embeds to create an experience that feels holistic, rather than fractured, for the students," she said. "We're just constantly iterating."

But most schools aren't in New York City, one of the biggest media meccas of the world, and don't hav this kind of access to skilled data reporters the next door down. "We're in central Illinois," Houston said. "There's not a whole lot of newsrooms around us doing data."

He went on to say the local paper does do some data projects, but they don't have time to come teach Every once in a while, Illinois can get a professional to make the 140-mile trip down from Chicago.

The University of Missouri faces a similar dilemma in Columbia, more than 100 miles from the neares big city. "Different schools are going to have different challenges," data professor David Herzog said. "For us, it's been recruiting full-time faculty to teach."

Herzog acknowledged that many journalists who are skilled in data are busy with lucrative and fulfilling professional careers. Missouri has run a few experiments — such as recruiting alums to teac weekend workshops — and has settled on piping one in digitally.

> "
> *Missouri has run a few experiments — such as recruiting alums to teach weekend workshops — and has settled on piping one in digitally.*
> "

Chase Davis is the deputy editor for interactive news at The New York Times, a Missouri graduate and an adjunct professor teaching Python, a programming language. He prerecords some lectures, which the students listen to on their own, then holds a class session via a software called Adobe Connect. Each approach to temporary staffing is going to pose its own challenges, and a digital lecturer poses some technical issues.

Missouri settled on Adobe Connect, for now, because it's stable and reliable. Davis can share his screen, write a script live or hold a discussion in the comments section. The school also started experimenting with Google Hangouts last year for a more seminar-style class. Hangouts allows for multiple people to be online and having a discussion at once.

"One reason Mizzou has a strong emerging data journalism curriculum is because leaders of the industry happen to be alums," Professor Mike Jenner said. "I've been able to talk them into sharing what they've learned with students."

These approaches to hiring outside staff — recruiting TA's, visiting speakers and digital lecturers —

have worked, or at least are works in progress, for many of these large schools. They're able to tap int
rich networks like alumni and professional connections to convince skilled reporters to teach on the
cheap.

Many other colleges, though, lack these kinds of resources, and might want to look into having their
students teach themselves, or recruiting help from a national organization, as is discussed in the thir
option, "Self-training."

Option 2: Collaborate with other departments

Most schools have some kind of computer science program. Some educators have proposed partnerin
with these departments.

One of them is Houston, at the University of Illinois. He said he hasn't crafted a course that combines
journalism and computer science, but he has offered credit for journalism students who take comput
science courses, or had some CS professors stop by for guest lectures. "You can reach across campus
get people who do more advanced or sophisticated things," he said.

Lindsey Cook organized one such course while she was a student at the University of Georgia. "It
wasn't continued after the semester I tried it, which was the one before I graduated," said Cook, who
now works at USNews. "It did convince me that such an approach could work, though."

She said one challenge educators face with this approach is convincing journalism students that
computer science skills really do apply to them. She quoted what she called the "lazy stereotype" of
journalists being bad at math. She said that throws up barriers for students who "have been told by
everyone (they) admire in journalism that you don't need math, when that's not the reality of the
field."

> **"**
> *You can reach across campus to get people who do more advanced or
> sophisticated things.*
> **"**

Jones, who teaches at the New School, said she makes a point of explaining how she came to love
these tools. "I think a lot of the students are really afraid of data and the numbers, and I, too, was on
like that," she said. "They'll leave having had exposure to data terms and, I hope, leaving with at lea
the knowledge that this is a really important skill that anybody can learn."

This is the main benefit to such an approach: exposure. "Students don't necessarily get exposed to
data unless they take a data class as an elective or it's part of their interest area," said Herzog, at
Missouri. "There's still slightly a mindset that data is for people with more tech skills as opposed to

Missouri. "There's still slightly a mindset that data is for people with more tech skills as opposed to journalists who want to deepen their research skills. ... It really does take a lot of evangelism."

Matt Waite is the data evangelist at his school, the University of Nebraska-Lincoln College of Journalism and Mass Communications. He said one of his goals is simply to expose journalism students to the possibilities with data, carrying out a campaign for "hearts and minds."

The core journalism classes at UNL don't include a data component, Waite said, but they do have a math component for calculations like percent change. "My thought was, 'Let's just extend that a little bit further,'" he said. "Let's use a spreadsheet instead of a calculator."

Waite holds regular open labs that he calls Maker Hours, open to any student at the university — not just journalism students. He said the attendees vary from week to week, but the purpose is the same: to provide students with an outlet to experiment with technology. "It's just kind of free-form and open," he said.

Coronel said Columbia also makes a special effort to provide students with office hours, usually held by TAs or volunteers. "You only have so much classroom time to look at specific problems," she said. Office hours let the students work out kinks and keep them from falling behind in class.

Cheryl Phillips, one of the authors of the Columbia report and a professor at Stanford, suggested a J-school could also partner with a CS department just for a project, like a map or other visualization. "They just have to figure out how to tailor it to journalists," she said. "I think there's a lot of opportunity there."

Option 3: Require self-training

Hiring part-time staff, collaborating with Computer Science departments and holding open labs won work for every school. Luckily, there's a wide array of resources available to students — and their instructors — who want to learn on their own.

"It's gotten much easier to get a foothold as a student," said Houston, in Illinois. "The doors are open much much wider."

The Knight Center for Journalism in the Americas, for instance, produced an online course in data journalism designed to help reporters teach themselves. The course had almost 5,000 registrants from 150 countries, Knight Chair Rosental Alves said. It remains their most popular MOOC, or massive online open course. "The idea is to bring knowledge and journalism skills to people all over the world," Alves said.

The following organizations offer data journalism training for little or no cost:

- IRE/NICAR

- ForJournalism

- SPJ

- Knight Center

- Poynter

- Reynolds Journalism Institute

Most of this training is online, but some groups are willing to arrange in-person training, like SPJ's Journalism Training program. There are others: "civic hacking" groups have the goal of creating projects for the public good, but often work with journalists because they have similar goals. Open data groups in London, Johannesburg and elsewhere offer free training to journalists. Code for America is an umbrella group with chapters in many cities, and similar groups exist elsewhere.

And other opportunities can be created: they only need the catalyst of someone at the school reachir out. Hacks/Hackers, a global organization for bridging journalism and technology, holds weekly sessions at Missouri. The sessions take the form of open labs, similar to Waite's Maker Hours in Nebraska, where any student can come work on a project, get help with a technical issue or just hang out. James Gordon, who organizes the meetup, sometimes recruits journalists or developers to come talk about their projects.

The main challenge with this approach to teaching is that it only reaches self-motivated students. Waite, for instance, said he offered extra credit to students who used data for a class project, but had few takers among students who weren't already assigned to learn data.

Another challenge is deciding how much to teach. The Columbia study, for example, found that MOOCs and other online courses are "best at offering introductory exposure, but one should not expect to reach in-depth knowledge."

> **"**
>
> *The main challenge with this approach to teaching is that it only reaches self-motivated students.*
>
> **"**

Steve Doig, who teaches at the University of Arizona, found a happy medium between the two by including an assigned data module in each introductory journalism course. He recorded a short vide explaining how to calculate changes in the local government's budget. The students are required to the calculations, then write a short story on what they found. This approach also circumvented the

problem of journalism instructors who don't know how to teach data.

"The actual instructors for each section just have to introduce the module," Doig said. "They don't need to be proficient with Excel themselves."

A third option would be to send people away for self-training. ProPublica, the Sunlight Foundation, IRE and many more offer in-person workshops — and scholarships — to students and professionals willing to travel to learn. Missouri experimented with giving students course credit for taking an IRE bootcamp over a weekend.

Each of these options for training — online, in-person, away or at home — circles back to the issue of making sure students actually use it. The lessons offer learning, and the labs offer support, but it's u to the learner to implement their new skills. It's like forging a bridge between coding classes and journalism by simply making a project, USNews's Cook said. "You need to just go in and accept that it's not going to be perfect."

But, like any journalism skill, it all comes down to how and how often you use it. This is a field that prides itself on prioritizing merit and experience over other measures, and journalism schools epitomize that. Changing curriculums has never been easy, but adapting to new information and making the most of it has always been a journalism trademark – in the field and in academia.