

Science News and the Science Classroom

By Laura McCullough



Using Science News as a teaching tool promotes writing about science, talking about science, and broadening students' views about what science is. This article describes an ongoing assignment in which students choose one article from Science News each week and write a brief summary and explanation of why they picked that article.

I think you and all the other professors should do this [assignment] every semester in all their classes.

As science teachers, we attempt to accomplish many goals in our classes. Learning science content is usually first priority, but beyond that we have many diverse goals for students. There are also goals imposed on us

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by states, school administrations, and others. Two of my own goals are to make students more aware of and interested in science, and to get them thinking about science outside the classroom. I have created a fun, short assignment that meets these goals and that students enjoy. The assignment is simply to read one article from *Science News* each week and write a very short (one-half page) paper on what they read and why they picked that article. The assignment gets students reading science, is easy to grade, and is enjoyable for both students and the instructor.

Background

Writing assignments in the science classroom are not new. A recent article in *The Journal of College Science Teaching* (Tessier 2006) argues that writing assignments are valuable and necessary for the science classroom. The exercise I describe is both a reading and writing assignment for the science classroom.

In my physics courses, I assign very little traditional homework. I teach two algebra-based physics classes of up to 48 nonscience majors; half are taking the class as a requirement for their major, the

other half are fulfilling the natural science general education requirement. Between one-half and two-thirds of students have had high school physics. For several years I have been considering additional ways to get students thinking about physics outside the classroom, a task traditional homework does well. I want students to understand that physics and science are more than an abstract collection of equations. In service of this goal, I use numerous daily-life examples in class, try to talk about science from students' worlds and cultures, and look for new ways to show students the excitement and variety of current science.

Recently, while perusing a copy of *Science News* from my personal subscription, I noted an advertisement for classroom subscriptions and absently thought that *Science News* would make a fantastic addition to the science classroom. A short while later, my department was discussing what to do with some special course funds, earmarked for nontraditional course materials. Serendipity struck: I could use *Science News* educational subscriptions to help students think about science outside the classroom. The department agreed, so I ordered classroom copies of *Science News* for the fall semester. We had enough funding so that each student could have their own copy each week, though I don't think that's necessary for the assignment to be valuable.

The assignment

Now that I had *Science News* for my students, how best to use it? A common assignment has students reading an article and summarizing or critiquing it. Because *Science News* summarizes recent science instead of publishing longer-form research results, critiquing an article was inappropriate. But summarizing a two-paragraph article seemed silly, and reading 50 summaries a week sounded tedious. Thinking back to

my goal of getting them to see how cool and varied science is, I decided to ask students to write a very brief summary of an article and also to write a brief statement on why they chose that article. I did not want to constrain their choice of article to read, and I hoped that by having an option, students would read most or all of the magazine each week.

I specifically made students pick a story from a new issue each week for two reasons. The first was that I wanted to expose students to as much science as possible. I hoped they would start to see the enormous scope and variety of science happening in their world today. The second reason was to prepare for an end-of-semester wrap-up assignment where I asked students to go back over their papers and see if they always tended to pick one type of science. I hoped that students would find that they had a particular science of interest to them, or that they found all science interesting.

Getting it to work

Science News issues have a Saturday publication date, and arrived

at my school on Wednesday or Thursday each week. Our physics department has an open student lab where I could drop off the issues for students to pick up at their leisure. The *Science News* website provides a few of each week's articles for free. I wanted students to browse, not just click the first available link, so I required them to read the paper version (see assignment worksheet, Figure 1).

With fewer copies (10 is the minimum classroom subscription), instructors could reserve the magazine in a classroom or office for students to peruse during the week. A single library reserve copy might work as well. In either case, more time between the magazines' arrival and the assignment due date might be necessary. A rotation assignment might also work, where different students do the assignment each week, reducing the necessary number of copies and the grading load. Having an open lab where students could pick up copies was nice, but for places without such a lab, the instructor could distribute copies in class or even place them outside an office door.

FIGURE 1

Assignment worksheet.

Science News, which is published every week, contains the latest scientific results and breakthroughs in all scientific fields, from biology to psychology. This very short (10–15 page) journal summarizes the science in layperson's language and is accessible to the nonscientist.

For the remainder of the semester, you will have an assignment due on Wednesday each week. Read through the current *Science News* and pick one story or article that interests you. In a few paragraphs (150–300 words) summarize the article and state why you find it interesting. Include the journal volume and issue, the journal date, the article's title and author (if appropriate), and the page the article is on. Our issues arrive a week late, so the due date for each paper is about 11 days after the cover date on the issue.

Note: *Science News* does have a website, but I do NOT want you using it for this assignment. Use the paper copy and read or skim through the entire magazine to find a story of interest. I want you to use the paper version so you see everything available; the website only includes part of the paper journal. I read my copy over breakfast and it only takes me two breakfasts to finish the journal each week—it's a very fast read.

Your assignment: Each week, go to SW115, pick up a copy of *Science News*, and read through to find an article of interest. Feel free to take a copy home or read the lab copy that will always be available in that room. Write 150–300 words on what the science of the article is, and why you find it interesting. Include a proper citation for the article. Turn in your assignment via email or hard copy on Wednesday each week.



Students were eager for the arrival of the new issue each week. I received many papers early, far more than I ever received on a problem assignment. An interesting side effect was that student workers in the lab where Science News was kept found the reading fascinating and looked forward to the new issue each week. One student worker mentioned that each week something he read connected directly to one of his classes.

Student response

The variety of student papers was amazing. I had traditional, academic writing:

This article brings up several interesting points. First, pharmaceutical companies have a vested interest in the results of studies determining the effectiveness of medications, and the results should be scrutinized. I also think that it would be good to put requirements on the impartiality of researchers in such studies, and also to put a minimum on the number of participants and the length of the study.

Other students showed humor and personality in their writings:

I really enjoyed reading this article because I really didn't think looks mattered that much to the animal kingdom, and if it did it would be for the men to attract women, and not for men to try to keep the women. It is about monogamy to these male swallows and they are scared of their lady caller being wooed by a more colorful man. It's good to see the ladies in control!

Throughout the semester, students became more comfortable with writing less formal papers and began to

mention previous articles. Many students wrote that they chose articles because the science related directly to them or their families. During a week with an article on the negative effects of smoking, several students chose that article because they were trying to quit smoking or because they were trying to convince a loved one to quit:

I found this article interesting because a lot of my friends smoke and I don't know if they realize just how much at risk they are. I like hanging out in bars and I work in a bar so I am exposed to second hand smoke all of the time. I'm hoping it doesn't have any long term effects on me, though.

Student reflections

At the end of the semester I asked students to reflect on the types of articles they had chosen. Did they always choose one type of article? Did they pick many different topics? Their answers varied. If students chose one type of article, it was most likely related to astronomy, biology, or general health. The majority of students said they skimmed the magazine and picked an article title that caught their attention. If students had a personal connection to an article, related to their major or relationships outside

of school, they were more likely to choose it:

It didn't really surprise me at all that most of the articles I picked were related to my two specific fields of study, psychology and medicine.

I have found articles relating to my life and things in general. I have found articles related to me as a man, an asthma sufferer, a consumer, a fisherman, and a student with ADD.

Students overwhelmingly enjoyed the assignment. The average time mentioned for completing a week's assignment was 20–30 minutes, which students felt was reasonable. Students also mentioned that they tended to read more than just one article:

I learned something new every week that I completed a Science News assignment, so I would say this is a very beneficial assignment in terms of experiencing the different kinds of science.

I thought the information I got out of it was cool; I even found myself walking around questioning people if they knew about my newfound knowledge.

Impressions of the magazine
In the final reflection paper I asked

students to critique the magazine. Was it too technical, too short, too simple, or just right? Very few students had any complaints about the magazine. The following are the only complaints I received:

The only complaint I have with the smaller reads was that in that small amount of writing, they saved most of it for the scientists' names, the school they were researching with, or the company.

Even though it was easy to read and they usually wrote it to fit a normal person's vocabulary, I think that a lot of the articles needed something more to them to explain why these tests were conducted and the use after the experiments.

Many students had positive things to say about the magazine and the assignment:

I think the article authors also do a good job providing balanced coverage of issues when needed, sometimes including the opinions of well-versed professionals who are not tied to the research.

Instructor's reflections

I was surprised and pleased at how well this assignment worked. Students often told me about "cool" articles outside of class, or how they'd talked to their roommates about an article. Another surprise was how many young, male students were willing to write papers on sperm counts and circumcision for a young, female physics professor. A majority of the papers were thoughtful and mature, not just something scribbled down to fulfill the assignment. Most students searched for an article that meant something to them.

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lab where *Science News* was kept found the reading fascinating and looked forward to the new issue each week. One student worker mentioned that each week something he read connected directly to one of his classes.

With respect to the instructor's workload, the grading load was minimal, especially given the enormous rewards. I could skim the summaries students wrote and focus on the "good parts" of each paper—why students felt an article was interesting. The grading was quite rewarding for me personally, which I have never felt before. I enjoyed getting piles of papers on my desk and in my e-mail inbox, even when I was behind. Each paper took barely a minute to read and I learned a lot about my students. I graded leniently on a 5-point scale, and most papers were 4s or 5s. My rough grading scheme included 2 points for the summary, 2 points for the personal statement, and 1 point for spelling and grammar. Very little plagiarism occurred; occasionally I had to mark a student down for simply paraphrasing the article, sentence by sentence.

Another advantage of this assignment is that it meets many of the National Science Education Standards. For classes of preservice teachers, this sort of assignment addresses Professional Development Standard A: Learning essential science content. For K–12 teachers, *Science News* can address various science content, and also helps with other areas. A teacher might address Content Standard E: Science and technology through articles on the biological consequences of nanotechnology. Content Standard F: Science in personal and social perspectives could be met through an article about how solar-powered LEDs are being woven into fabric to help light rural Mexican villages. Content Standard G: History and nature of science is addressed in many articles; *Science News* consistently brings in alternative

expert opinions, even on smaller articles. Some articles focus on issues of peer review, bias, and the nature of science. Using *Science News* in the classroom directly assists in meeting National Science Education Standards.

In future classes, I hope to study deeper effects of this assignment. My first impression was that I was achieving my goals of getting students thinking about science outside the classroom, and getting students more aware of and interested in science. It will be interesting to discover if I am achieving other goals through this assignment.

Conclusion

The *Science News* assignment is the best assignment I have so far come up with for my college physics course. Each week, students chose one article from *Science News*, wrote a very brief summary of the article, and wrote a brief statement on why they thought it was interesting. The response from students was incredible, the time spent in grading was minimal compared to the return, and students gained an appreciation of the variety and intellectual draw of science. Students and I agreed: This assignment is a keeper. ■

Acknowledgments

I want to thank students who gave permission to use quotations from their papers in this article. I also want to thank Science News for providing a high-quality magazine that has given me an opportunity to do a better job in the science classroom.

Reference

Tessier, J. 2006. Writing assignments in a nonmajor introductory ecology class. *Journal of College Science Teaching* 35 (4): 25–29.

Resource

Science News—www.sciencenews.org. For classroom subscription information, contact Christina Smith at 202-785-2255 or send an email to sub-news@sciserv.org.