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# Predictive Algorithms, Adaptive Learning, and Tweed Jackets - What Could Go Wrong?

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# The Weekly Reader

Teaching and Learning Center, Winthrop University, Rock Hill, SC

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## Predictive Algorithms, Adaptive Learning, and Tweed Jackets—What Could Go Wrong?

Predictive algorithms. Adaptive learning. Flipped classrooms. O brave new world!

Marshall Jones recently conducted a TLC session on flipped classrooms, and yesterday he sent that group a link to an article by Seth Fletcher in *Salon*, originally published in *Scientific American*. The title is a bit scary: “Big Data Could End Professor Lectures.” Here is the link: [http://www.salon.com/2013/08/01/big\\_data\\_puts\\_teachers\\_out\\_of\\_work\\_partner/](http://www.salon.com/2013/08/01/big_data_puts_teachers_out_of_work_partner/)

Because of huge enrollments and under-prepared students, Arizona State University partnered with a software start-up company that changed the way they deliver their entry-level math classes. Instruction is by computer and individually geared to each student, with software that tracks what students are (and are not) learning, continually. That is where predictive algorithms and adaptive learning come in.

According to the article, the math professor has stopped lecturing and has started roaming the classroom, becoming a coach to the students as they work.

Such a change contains positive and negatives, and has proponents as well as detractors. To quote from *Salon*: “Proponents of adaptive learning say that technology has finally made it possible to deliver individualized instruction to every student at an affordable cost—to discard the factory model that has dominated Western education for the past two centuries. Critics say it is data-driven learning, not traditional learning, that threatens to turn schools into factories. They see this increasing digitization as yet another unnecessary sellout to for-profit companies that push their products on teachers and students in the name of ‘reform.’ The supposedly advanced tasks that computers can now barely pull off—diagnosing a student’s

strengths and weaknesses and adjusting materials and approaches to suit individual learners—are things human teachers have been doing well for hundreds of years. Instead of delegating these tasks to computers, opponents say, we should be spending more on training, hiring and retaining good teachers.”

The article goes on to document a backlash among teachers at all levels, K-12 and college, against such technological changes.

Personally, I can see both sides of the issue. My initial reaction is one of dismay that machines are taking over our roles as teachers to a larger extent than ever before. One of the main reasons I became a teacher is because I love (and am good at) guiding students through challenging material and processes. They came for the math professors first, the cautious side of me says, so it won’t be long before

*“What is the point of all this rambling? It is indeed a brave new world, and we will have to adapt to changing technologies. If my decades of teaching have taught me anything, I know that technology can be a great tool to enhance teaching and learning. I also know that much of it is a trap, if not a crock. The wisdom comes in learning to tell the difference.”*



## Continued from page 1

they come for the English professors. (I can see it now: predictive algorithms and adaptive learning software that scan student eyeballs and report to me instantly their relative understanding of the imagery in a Shakespeare sonnet. “Shall I compare thee to a predictive algorithm?”)

On the other hand, my tentative steps toward flipping my classrooms a bit have been successful. The podcasts and short videos I post on Blackboard about writing assignments and extra lecture material free up class time for more focused learning, as well as deliver material more efficiently and at the optimum time to my students. I am no Luddite, but I do resist the idea of the machines taking over. HAL 9000 scarred and scared me in my younger days. (“Don’t do that, Dave.”)

Yet another part of me (I am a man of many parts) thinks about all the educational trends I have watched come and go in 30+ years of teaching. How many times have I read about the Next Big Thing that is going to change education forever, that is going to put us all out of jobs, that is going to make students learn better, learn faster, learn

deeper, jump higher, and run faster, all without teachers? How many times have administrators pushed on wary faculty their new fad, the panacea that will cure all? Total Quality Management. How is that for a blast from the 1980s? That idea, borrowed from corporate America, was going to revolutionize college structures, do away with departments, and deliver efficient and economical content to students. Yeah, right.

But then I read about the revolution happening just below us, in the K-12 schools, with the students wired and iPadded and Google Glassed from the cradle. These students are already coming to us in dribs and drabs, but they will be coming in waves soon enough. In just a few years, we will have students who have received all their instruction, read all their textbooks, and taken all their texts on tablets that didn’t even exist ten years ago. Who knows what will exist then? How quaint will I appear to them, insisting that they read and annotate this dinosaur contraption I am carrying around and foisting on them, this strange thing called a “book”? Should I break out my tweed jacket with the elbow patches?

In some ways, the battle is already over, and Mr. Tweed Jacket has already lost. The latest email from Tomorrow’s Professor informs me of a study of 777 students at six colleges and universities about cell phone use in class. A mere 8% never use their phones in class for non-class purposes; 15% use them more than 30 times a day; and the average number of times students do so is 11 times a day. I am haunted by that quotation from a book I recently read and wrote about, *Teaching Naked*: “Students come to class bored and with an encyclopedia in their pockets.” How long before they come to us with computer chips implanted in their foreheads?

What is the point of all this rambling? It is indeed a brave new world, and we will have to adapt to changing technologies. If my decades of teaching have taught me anything, I know that technology can be a great tool to enhance teaching and learning. I also know that much of it is a trap, if not a crock. The wisdom comes in learning to tell the difference.

## XXITE 2.0 ----- The Virtual Gathering Place for WU (The Reboot!)

Jo Koster and I invite you to join XXITE (Twenty-first Century Teaching Excellence)—or if you have already joined, to check it out again as it grows and develops. Maybe you have not been there in a long time—if not, you will see many changes in look and content. For example, XXITE now has groups dedicated to HMXP and CRTW, with

those of us who teach those courses sharing ideas and materials. Talk to Jo about setting up your own interest group. Jo is particularly interested in recruiting a few people to blog regularly about their teaching.

Jo set up this interactive site to give Winthrop faculty a virtual gathering space to share ideas about teaching and

technology. You'll find blogs and discussion forums on various topics—and we urge you to add your own ideas. Visit again at <http://wuxxite.ning.com/> Or email Jo Koster for an invitation to join: [kosterj@winthrop.edu](mailto:kosterj@winthrop.edu) The TLC website also has links to navigate your way there or to join: <http://www2.winthrop.edu/tlc/>

## A New Service From the TLC: Teaching Consultation

The Teaching and Learning Center is offering a new service: teaching consultation. At the instructor's request, I (or another agreed-upon person) will visit your class to observe and consult with you afterwards about your successes and challenges. This consultation has nothing to do with the tenure and

promotion process, and no reports will be made to department chairs or deans (unless you so request). The invitation to the consultant can only come from the instructor, not from a dean or chair or any other person. All conversations will be private and confidential. If you don't want me to visit your class and observe your teaching, we could

just meet and talk about your teaching. If I am not available to visit your class because of my schedule, I will find a qualified person to do the consulting. So please let me know if you would like to invite me into your class or for a consultation. Call or email me at (803) 323-3679 or [birdj@winthrop.edu](mailto:birdj@winthrop.edu).

## Go2Knowledge—Learning On Demand!

Go2Knowledge is a website that offers a variety of video presentations on faculty and staff professional development. You will find presentations by nationally-known experts in seven categories: At-Risk Populations, Campus Safety, Organizational Development, Student Success, Teaching and Learning, Technology,

and Open Educational Resources. Within each category, you will find a number of excellent and informative videos. The Office of Academic Affairs has provided us a one-year subscription to this service.

People often tell the TLC that they would like to go to sessions, but they don't have the time or they can't

at the times sessions are offered. With Go2Knowledge, you can attend sessions on demand, anywhere, 24/7. The TLC will also have frequent Go2Knowledge Groups, where we meet to discuss a presentation. Log in here: <http://www.go2knowledge.org/winthrop> See you there!

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**BLOG POSTS**

- NEW POSTS ON THE RENOVATIONS**  
Posted by [Mark Y. Herring](#) on June 5, 2012 at 2:05pm
- CORE VALUES**  
Posted by [Mark Y. Herring](#) on June 5, 2012 at 9:41am
- PLAYING TO TYPE**  
Posted by [Blaiz C. Herring](#) on May 25, 2012 at 10:22am
- TEACHING CRITICAL THINKING IN THE CLASSROOM**  
Posted by [Amanda Hiler](#) on March 15, 2012 at 12:11pm — [LJG](#)
- GONE WITH THE WIND...**  
Posted by [Jo Koster](#) on March 6, 2012 at 10:33am — [2 Comments](#)

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**NOTES**

- DO COLLEGE PROFESSORS WORK HARD ENOUGH?**  
Created by [Jo Koster](#) Mar 25, 2012 at 1:34pm. Last updated by [Jo Koster](#)
- WHO OWNS YOUR COURSE?**  
Created by [Jo Koster](#) Mar 19, 2012 at 12:07pm. Last updated by [Jo Koster](#)
- STUDENT OWNERSHIP OF TABLETS INCREASES, PREFERENCE FOR GROWING**  
Created by [Jo Koster](#) Mar 14, 2012 at 11:24am. Last updated by [Jo Koster](#)

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## Thought for The Week

*"As for myself, I have no difficulty in believing that our newspapers will by & by contain news, not 24 hours old from Jupiter et al—mainly astronomical corrections & weather indications; with now & then a sarcastic fling at the only true religion."*  
--Mark Twain