

Community College of Baltimore County

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INVITED PERSPECTIVE

My First 51 Years Teaching Microbiology at The Community College of Baltimore County

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TALES

TEACHING
AND LEARNING
EXCELLENCE
THROUGH
SCHOLARSHIP

I have had just one job interview in my life and it was for the position of Biology Instructor at Catonsville Community College. Having just completed my M.S. Degree at Northern Illinois University, I knew I needed employment because I was moving to Maryland prior to September 1970. After enquiring about the possibility of a teaching position at 4 Maryland community colleges, I was granted an interview at Catonsville Community College. On May 4, 1970, I found myself driving from Illinois to Maryland for a real job interview. I remember the date because I was listening on my car radio to the aftermath of the Kent State shooting earlier that day. The interview apparently went well because I was offered the position beginning in September for the amazing salary of \$10,000! My professional life had begun. Armed with little more than a love of microbiology and a lot of patience and desire, I began the journey to hopefully become the best microbiology educator of which I am capable. Fifty-one years later I am still striving for that goal.

In thinking about writing this perspective, so many fine memories came to mind; the wonderful and supportive colleagues and administrators I have been blessed with, the many friends I have made over the years, and the thousands of amazing students I have had the privilege to teach. However, since my goal has always been to improve my teaching every semester and to provide my students with the best learning tools I could develop, I decided to center this perspective around the vast changes in technology over the past 5 decades and how they have contributed to striving toward this goal.

The stone ages. Not quite chisel on stone, but close.

Some recollections regarding the state of technology in my first year at the college 1970-1971:

1. We didn't have Xerox-type copiers yet. I typed my quizzes and syllabi on a ditto master and ran off copies on the Spirit Ditto Machine in the Biology Office. (If you are my age or older, tell me you didn't enjoy picking up that new stack of freshly dittoed sheets and sniffing the spirit solvent!)
2. I used a slide rule to calculate the students' final averages. I was able to purchase one of the first Texas Instruments hand-held calculators in 1973.
3. The lecture halls had a chalk board, but also a movie projector and a 35-millimeter carousel slide projector – but with control cables that ran from the projectors at the top row of the hall down to near the instructor's podium at the bottom for ease of operation. Cutting-edge technology. Unfortunately, I had no movies or slides to show, just traditional lectures hastily prepared a day or two in advance.

Why don't you just give them a copy of your lecture notes? A precursor to PowerPoint and eventually my microbiology website, The Grapes of Staff.

Brand new and with no real experience in teaching, my first official microbiology lecture contained roughly 2.5 hours of content for a 2-hour lecture. Therefore, to get in all my content as the class progressed, I proceeded to talk faster and write on the board less. However, I was astute enough to notice the look of befuddlement on the faces of my students and knew I needed help. After my class I saw Robert Sawyer, Ed.D., my Division Chair. Besides pointing out the obvious step of having less content per lecture he said, "You know, you could provide the students with a copy of your lecture notes. Then the students wouldn't have to spend all their time copying from the board and you could spend your time explaining the lecture notes." To me that was an amazing concept and was the beginning of my microbiology lecture guide which became a much-appreciated aid for my students.

By the next semester, the students purchased a copy of my lecture notes printed by the college press. Also, by then we had a Xerox machine that made transparencies. Enter my overhead projector/transparencies era. Students would follow along with their hard copy of my lecture notes while I used a highlighter to go over the same notes on my transparencies, explaining the notes, and showing some Xerox transparencies I made from illustrations in textbooks along with some handmade drawings. Then, for the lab, I used wet paper towels to wipe all the highlighting off the transparencies.

IN THIS ISSUE:

Performance objectives and my own lab manual and lecture guide: Open educational resources a few decades early.

Letter from the Provost

Sometime in 1973, Bob Sawyer invited a speaker to our division meeting which was held at the local Howard Johnson. (My first fried clams. In Illinois, seafood was Mrs. Paul's Fish Sticks.) The talk was on performance objectives, the first time anyone explained to me that you should tell the students exactly what they needed to know in advance for every lecture and lab. This was a breakthrough in my teaching and in the writing of my lecture guide, lab manual, and exams.

Indicating that I was unhappy that the commercial lab manuals we were using lacked sufficient background information for the lab exercises, contained too many labs that students didn't use, and were costly, Bob Sawyer suggested I write my own lab manual and have it printed by the college press. The following semester the first edition of my microbiology lab manual was printed by the college. Within a few years, the commercial textbook we were using would also be eliminated and replaced with a more textbook-like version of my lecture guide, thus providing my students with both a lab manual and a "textbook" presenting the key information covered in the course for only the cost of printing and bookstore fees. Eventually there would be a new name for these: Open educational resources, or OERs. This was greatly appreciated by my students.

Enter our first computer.

In the mid-1980s, everyone in the Math and Science Division was given a Radio Shack TRS-80 computer with a whopping 64kb of RAM! No more typewriter; no using White Out. I could cut and paste text, store my work on 5-inch floppy disks, and send these files directly to a printer. I remember thinking how great it would be if there was only a way I could display what was written on my computer screen directly to students in a classroom - but that technology was still several years away.

This thing called the Internet.

Paula Noeller was the first faculty member in the Math and Science Division to develop online courses; one for astronomy and one for earth science. This was the early 1990s and she had the only 2 computers in our division running Windows rather than DOS. I remember going to her office one day to ask her about this new software program called PowerPoint and whether she thought people might start using this in the classroom. She said, "Probably so, but you might want to consider placing all your materials on the Internet." I replied "OK, how do you do that?" And so began many, many days in her office learning how to use a mouse, a program that converted WordPerfect text into HTML, and learning HTML code for formatting and inserting visuals. (We did not yet have access to Dreamweaver-type programs.)

I started making my own illustrations using computer-based drawing programs and eventually used some of these drawings to make over 50 GIF animations to illustrate microbiological processes. I also began inserting the many photos and photomicrographs I had taken over the years into my online lecture guide and lab manual. However, within a year of completing all my GIF animations, this new program called Flash Animation became available. The Flash animations looked so much cooler than my GIFs, so goodbye GIF and hello to eventually making over 150 Flash animations for my course. Adding all these visual aids made delivering the content in my course more exciting and played a major role in explaining lecture and lab content more clearly.

In this short time, our college had progressed from the 2 original Windows computers we started with to smart classrooms with projectors, as well as new, Windows-based computers in faculty offices. I was now on the Internet and using my faculty website to deliver my lecture and lab content, while also providing my students with a hard copy of my website's content and my lab manual since many did not yet have access to personal computers. With ever growing enthusiasm, I felt I finally had the tools I needed to further enhance student learning.

Enter the digital age.

In 1998, Catonsville Community College joined with Essex and Dundalk to form the Community College of Baltimore County (CCBC), and we now have computer labs available on all campuses and every classroom is a smart classroom. Students have PCs, laptops, tablets, and smartphones. We now use learning management systems such as Blackboard and Brightspace to present students with online content, instruction, and testing. We as faculty have vast quantities of educational tools and programs available for our use. I started using student response systems (clickers) in all my lectures to break up content and get a better feel for student comprehension of certain topics.

When our college purchased a license for SoftChalk, I began converting my online lecture guide into 138 SoftChalk lessons that, along with my lab manual, still serve as the OERs for my course. (At least until August 1, 2021 when CCBC will end its license with SoftChalk and replace it with CourseArc... several hundred hours of work ahead of me for that.) I also began using a GoPro camera to make instructional videos on laboratory techniques that I post on YouTube. Students must now watch these videos and take an online quiz covering the videos prior to attending that day's lab. This has helped immensely in preparing students for lab and completing the lab exercise on time. I am still amazed that my little YouTube Microbiology Channel has over 904,000 views! Can you imagine if some time traveler would have visited me in 1972 and said "Oh, by the way, in 2021 you are still teaching at this college and thousands of students around the world now watch movies of you teaching on these TV-like computing devices with built-in typewriters and on these small, handheld telephones that have a mini television screen and don't require any wires." I would have said "Yeah right, tell me another one," like some virus is going to take over the world and we all must wear masks and keep away from one another until a life-saving vaccine is developed and enough people become vaccinated to make it relatively safe to venture out again.

Ending note.

It has been a great ride so far! I was so blessed when I was hired by this college in 1970 and grateful to have spent 5 decades at a single great place of employment doing what I love each day. Thank you to every friend, colleague, and student that has supported me and encouraged me over the years – too many to name, but you know who you are. I must give a special acknowledgement to my most supportive colleague and friend, my wonderful wife Sonja Schmitz whom I met when she was starting out as an adjunct in our Biology Department. She always has my back.

Probably the only thing I miss from my early days in the classroom is when I would walk into class on the first day, and some student would say “You look too young to be my professor!” Now when I walk into class that first day, a student is more likely to say, “Sir, did you wander away from Brightview? Do you need any help getting back?” Brightview is the nursing home located next to CCBC’s Catonsville campus. Hopefully, I still have a couple of teaching years left in me and I can continue to grow as an instructor.

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CAN BE**

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