

**Education and the Digital Revolution**  
**Synopsis of Recent Articles**  
Compiled by David P Murray

[Mind-Flippin' Stuff](#)

- Traditional approach: having students come to class, listen to the teacher lecture, then go home to do their work
- Reverse Approach: Why not have the students watch recorded lectures at home then come to the classroom and do the work where the teacher is available to help them?
- Students do the classwork at home and the homework at class.

[The Hybrid Educational Model Works](#)

- A hybrid format involves machine-guided instruction accompanied by one hour of face-to-face instruction each week
- Traditional format is 3-4 hours of face-to-face on campus instruction each week.
- Learning outcomes are essentially the same in terms of pass rates, final exam scores, and performance on a standardized assessment of statistical literacy.
- Adopting hybrid models of instruction in large introductory courses have the potential to significantly reduce instructor compensation costs in the long run.

[The Practical University](#)

- Universities are places where young people acquire two sorts of knowledge – technical knowledge and practical knowledge
- Technical knowledge is the sort of knowledge you need to understand a task
- Practical knowledge is not about what you know but about how you do it
- Online and hybrid methods seem to be as good as standard lectures at transmitting technical knowledge.
- Universities cannot charge students for courses that they can get online for free.
- Universities will spend less time transmitting technical knowledge and more time transmitting practical knowledge
- Practical knowledge cannot be taught and memorized – it can only be imparted and absorbed

[The Minerva Moment](#)

- “Hybrid university.”
- Based on presupposition that both traditional lectures and MOOCs “are proven not to work”

- Mix of on-campus and online.
- Students take live online classes from Minerva professors (unlike MOOCs)
- Software monitors learning and encourages student involvement in ways that traditional lectures can't
- Instead of students learning in isolation at home, they will gather in residence halls in major cities and move from one city to another for different online courses.
- Students will have advisers and faculty guides but no in-person class professors
- Minerva plans to charge about half as much as an Ivy League university.

### [Is it finally time to kill the credit hour?](#)

- Focus should shift from credit hour to competency, from measuring seat time in class plus out of class coursework to measuring what students know and are able to do as a result of their coursework.

### [The Flipped Classroom: A Model that Works](#)

- CUGN (Christian University GlobalNet) online lectures provide cognitive input for students
- Other day of class is more coaching, interaction: How does this work? What does this mean? How does this apply?
- Not just learning facts of the Bible but how to read and interpret it.
- Not just cognitive information but practical contribution to students' lives.
- Increases student traffic to teacher's office for personal pastoring

### [Choosing the right flavor of courses for your school](#)

- When online college students were asked which of three study models they preferred (independent study, instructor-led, or tutorial), they split evenly
- Following are definitions of the three models:
- **Independent study:** Students study independently at their own pace, with books and other resources provided by the institution, and then complete assignments and exams.
- **Instructor-led:** Students complete a series of instructor-led learning activities and discussion forums with a class of other students, and complete assignments and exams as scheduled.
- **Tutorial:** Students complete a series of learning activities at their own pace with an instructor available to answer questions, and then complete assignments or exams.

- It is less expensive to deliver independent study and tutorial courses than instructor-led courses.
- One way to lower the cost of higher education and to accommodate student preference (chocolate, vanilla, or strawberry) is for colleges and universities to develop great course materials like MOOCs and then offer the course three ways: independent study, tutorial, or instructor led, at three price levels. It's fairly easy to convert an instructor-led course to the other two models.

### The Professor's Big Stage

- "How can colleges charge \$50,000 a year if my kid can learn it all free from massive open online courses?"
- Institutions of higher learning must move, as the historian Walter Russell Mead puts it, from a model of "time served" to a model of "stuff learned."
- Increasingly the world does not care what you know. Everything is on Google. The world only cares, and will only pay for, what you can do with what you know.
- We're moving to a more competency-based world where there will be less interest in how you acquired the competency — in an online course, at a four-year-college or in a company-administered class — and more demand to prove that you mastered the competency.
- We have to get beyond the current system of information and delivery — the professorial "sage on the stage" and students taking notes, followed by a superficial assessment, to one in which students are asked and empowered to master more basic material online at their own pace, and the classroom becomes a place where the application of that knowledge can be honed through lab experiments and discussions with the professor.
- There seemed to be a strong consensus that this "blended model" combining online lectures with a teacher-led classroom experience was the ideal.
- The world of MOOCs is creating a competition that will force every professor to improve his or her pedagogy or face an online competitor.
- Bottom line: There is still huge value in the residential college experience and the teacher-student and student-student interactions it facilitates. But to thrive, universities will have to nurture even more of those unique experiences while blending in technology to improve education outcomes in measurable ways at lower costs.

### Why Online Education Works

- Leverage: Online education leverages the power of the best teachers, allowing them to teach many more students.
- Time Savings: For students (travel) and teacher (online lectures tend to be briefer as no need for repetition by lecturer. Lectures in 5-15 min blocks are more efficient.
- Individualized Teaching and New Technologies: More questions and sharper answers

## Online Education Trumps the Cost Disease

- Students enrolled in an online/hybrid statistics course learned just as much as those taking a traditional class
- The online model was significantly less costly than the traditional model, some 36% to 57% less costly to produce than a course using a traditional lecture format.
- In other words, since outcomes were the same, online education increased productivity by 56% to 133%!
- Hybrid-format students also took about 25% less time to achieve essentially the same learning outcomes as traditional-format students (and that does not include the time saved traveling to classes)

## Who will online Higher Education help?

The key winner of more digital education will be someone who's intelligent, focused, and motivated but whose parents don't happen to have much money.

## The Case for the Virtual Classroom

- Bill Gates: ““It’s very clear that five years from now, on the web, for free...you will be able to find the greatest lectures in the world on the web.”
- Top Business Schools are providing full MBA’s 100% online
- While there are low-quality providers online, there are also low-quality classroom providers,”
- There’s nothing about the particular delivery mechanism that makes it intrinsically low quality.
- In a 2009 report based on 50 independent studies, the agency found that students who studied in online learning environments performed modestly better than peers who were receiving face-to-face instruction.
- Maintaining a low student-to-teacher ratio and paying for technology means that, the cost to the university won’t be drastically reduced. But offering programs online does enable schools to educate more students without expanding its facilities.
- Online learning can make classroom time more effective.
- But if teachers move the lecture online for students to watch on their own time, they can use the class time to work on activities and interact with students.
- Students can pause lectures, rewind, etc., improving understanding.

## Revolution Hits the Universities

- In one year, Coursera now have 2.4 million students, taking 214 courses from 33 universities, including eight international ones.

- 155,000 have taken edX's first course: an M.I.T. intro class on circuits (greater than the total number of M.I.T. alumni in its 150-year history)
- Although only a small percentage complete all the work, it's a small percentage of a huge number.

### [EdX announces proctored exam testing](#)

Online learners who want the flexibility to provide potential employers with an independently validated certificate may now choose to take the course exam at a proctored test site,

### [Duke to offer online courses for credit](#)

- Semester Online courses will be included in the cost of Duke tuition, but the number of 2U courses a student can take in one semester may be limited.
- Lectures will be capped at 300 students, and the program will also include online discussion sections of 20 people.
- [The program] will have a very significant component of face-to-face interactive sessions.
- Duke plans to offer two or three courses to start, but may increase the offerings to six.
- The program brings the unique benefit of allowing Duke students to take classes with students at other schools and may have a different perspective

### [The Seminary Bubble](#)

- Living costs tend to be higher for seminary students than for undergrads because undergrads are almost never married with children, but seminary students often are
- Father Geisler tells me that he commonly sees young men graduate from seminary \$60,000 or \$70,000 in debt with few employment options other than very low-pay youth minister positions.

### [Virginia's Liberty Transforms into Evangelical mega-University](#)

3,880 online students in 2005 and 75,000 in 2012.

### [The iSeminary Cometh](#)

The Babson Survey Research Group, which assesses all post-secondary education, reported in its Learning on Demand survey that "online enrollments have continued to grow at rates far in excess of the total higher education student population, with the most recent data demonstrating no signs of slowing." The January report notes the following:

- 4.6 million students took at least one online course at a post-secondary institution in fall 2008. About 644,000 of those students took graduate-level courses.
- Online education has been growing at a compound annual rate of 19 percent.
- Online enrollment now represents 25 percent of the 18.2 million students enrolled in higher education.

- Student demand for online courses is now greater than demand for corresponding face-to-face courses.

### [Don't Confuse Technology with College Teaching](#)

- Education is not the transmission of information or ideas. Education is the training needed to make use of information and ideas. As information breaks loose from bookstores and libraries and floods onto computers and mobile devices, that training becomes more important, not less.
- Educators are coaches, personal trainers in intellectual fitness. The value we add to the media extravaganza is like the value the trainer adds to the gym or the coach adds to the equipment. We provide individualized instruction in how to evaluate and make use of information and ideas, teaching people how to think for themselves.
- Just as coaching requires individual attention, education, at its core, requires one mind engaging with another, in real time: listening, understanding, correcting, modeling, suggesting, prodding, denying, affirming, and critiquing thoughts and their expression.
- A set of podcasts is the 21st-century equivalent of a textbook, not the 21st-century equivalent of a teacher.
- Technology can make education better. It will do so, in part, by forcing us to reflect on what education is, identify what only a person can do, and devote educators' time to that. (When we build machines that do everything a person can do, we will have created either fellow citizens or enemies; we'll then have other problems.)

### [Is the Lecture Dead](#)

- Ineffectiveness is not inherent in the lecture; it is inherent in the *poorly delivered* lecture.
- Educators “must attempt to understand better the features that distinguish effective, engaging lectures [and lecturers]” rather than “disposing entirely of the lecture as a means of learning.”
- The fate of the lecture is more a matter of the lecture’s purpose and the lecturer’s acumen and passion.
- Educators should ask a basic question: “why am I lecturing?”
- The core purpose of a great lecture is not primarily to transmit information . . . The real purpose of a lecture is to show the mind and heart of the lecturer at work, and to engage the hearts and minds of learners.”
- Because of this sort of teaching, students raise new questions, connections, and possibilities in their own minds. Hence education is far more than disseminating information and tracking its consumption.

### [Five Reasons Why Christian Ministry Majors Still Need Seminary](#)

- The challenge of contextualization.

- The comprehensive nature of pastoral ministry.
- The value of informal learning.
- Mentorship in ministry.
- An environment in which to mature.

### [MOOC Ancestor: Still Looking for Quality Teaching](#)

- MOOCs free teachers to include thousands of students in the same class, making more efficient use of teacher time.
- MOOCs are a wonderful invention. The lectures, readings and course assignments are high quality, but interaction between the instructor and student is missing.
- If instructors from local colleges used MOOCs to organize and deliver content, they would free time to lead the discussion forum and give feedback.
- As professor Pressey said, they would be “free for those inspirational and thought-stimulating activities.” This division of labor would be a win-win with great course design and great teaching.

### [Do we still need Seminaries](#)

- Most pastors under 40 have little formal training.
- On the job training plus books and blogs preferred to learning languages and huge debt

### [The Struggling Seminaries](#)

- Enrollment has been falling since 2005.
- Costs have increased.
- Student debt has become a bigger concern.
- Many Christian denominations, seeing their own ranks shrink, are providing less financial support than in the past.
- As Americans as a whole become less religious, seminaries face an uncertain future.
- Seminary endowments affected by the 2008 crash.