



Teaching

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Reflection on First Decade

By Zachary Goodell and Jeffrey Nugent

This fall marks the tenth anniversary of the founding of VCU's Center for Teaching Excellence. The CTE began in the fall of 2000 with a director and an assistant, a very modest budget, and no "official" office space. Although the resources were limited, the vision was not: establish a centralized, grass-roots organization that would support and foster a culture of excellence in teaching and learning at VCU that could grow over time. One of the first programs launched that first year was the CTE *Small Grants Program*. The idea at the time was to use as much of the operating budget as possible to directly support proposed teaching projects that had the potential to improve student learning almost immediately. Since that first year, the CTE has supported nearly fifty teaching projects through the *Small Grants Program*, representing a wide range of teaching contexts and student learning outcomes. The second program launched that founding year was the *Junior Faculty Mentorship Program*. Fourteen faculty members participated that first year representing six of our eleven Schools and the College at that time. Since then, over two hundred junior faculty members have participated in the program, and about seventy-five veteran faculty members have served as mentors. These signature CTE programs continue to this day and remain successful because they represent core aspects of our overall mission - to promote, enhance, and assess teaching effectiveness and student learning through faculty development.



... the CTE reaffirms its commitment to building and sustaining a community that values teaching and learning, that values innovation and scholarly efforts with respect to teaching and learning, and recognizes that faculty efforts toward the improvement of student learning are at the heart of higher education.

Since our beginning in the fall of 2000, we have moved several times—which is not unheard of at VCU - and our core staff has grown from two to five. We have developed several additional programs—the *Faculty Learning Communities Program*, *Exploring Tablet PCs in the Classroom Program*, the *Digital Story-Telling Program*, as well as two intensive summer events; *Teaching and Learning with Technology Institute* and the *Summer Institute on Teaching and Learning*. In addition, the number and range of workshops that we have offered has grown dramatically over the last ten years. In 2001 we offered about a half dozen VITAL (Ventures in Innovative Teaching and Learning) workshops that were delivered by VCU faculty with expertise in a particular area. The CTE now designs, develops and delivers workshops that cover a much broader spectrum of topics and issues to meet faculty needs. Last year we conducted over 135 workshops that were attended by approximately 825 faculty members. We also continue to explore ways in which we can make our workshops

and brown bag lunches more accessible by posting workshop resources, session materials, and recordings of our brown-bag lunches to our website so faculty members can access them anytime. We have also begun to work more closely with schools and departments to customize faculty development opportunities that meet identified needs and offer them at times and places that are most convenient to specific groups of faculty. In addition to workshop offerings, we have been able to grow the consultation services we provide to faculty members on an individual basis, with well over 250 consultations conducted across the University. Faculty engagement in Center programs and services has continued to grow, representing a strong commitment to the teaching and learning mission of VCU.

This brief trip through memory lane suggests that we have come a long way toward developing a centralized, grass-roots oriented organization. However, we recognize that we do not operate in a vacuum. Global, federal, state, and local forces continue to shape the way we conduct our work at VCU. As we look back over the last decade, and begin to forecast into the next, we will endeavor to try new things, add value to the things that we have always done well, and remain steadfast to our core principles. In terms of trying new things, we plan to continue exploring the ways in which digital technology and access to an abundance of information on the web are changing how and where learning is taking place. There are exciting opportunities and challenges that lie ahead as we think about teaching in online and hybrid settings, ubiquitous access to information, mobile technologies, and enhanced communication and collaboration tools. It is a world where students expect to engage in spaces that balance classroom and web-based learning opportunities in meaningful ways. We also hope to explore and develop a web-based learning space, a *Teaching Commons*, where faculty can network, make connections and develop interdisciplinary collaborations with colleagues to enhance teaching and learning. In addition, within the next two years, the CTE is planning to establish and host a teaching and learning conference at VCU. This conference is intended to provide a meaningful platform for faculty to participate in a community of practice that celebrates innovation in teaching and learning.

So as VCU begins the next chapter in its history, the CTE reaffirms its commitment to building and sustaining a community that values teaching and learning, that values innovation and scholarly efforts with respect to teaching and learning, and recognizes that faculty efforts toward the improvement of student learning are at the heart of higher education.

Finally, we would like to express a special thanks to all of the people who have supported the CTE over the last decade. We have always thought of the CTE as a place where not only faculty come to learn and develop their teaching practice, but also a place where faculty can come and contribute to our mission. So the extent to which we have been successful over the last decade is largely the result of a dedicated, thoughtful, and engaged faculty body that continues to view student learning as central to their work, and the CTE as central to the teaching and learning mission of VCU.

- Zachary Goodell and Jeffrey Nugent, Co-Directors, Center for Teaching Excellence

FLC's explore the many facets of learning

A faculty learning community (FLC) is a cross-disciplinary group of six to ten faculty members who engage in an active, collaborative, yearlong program that consists of both individual and group teaching and learning projects. Participants immerse themselves in exploratory research as “expert” learners attempting to address various teaching and learning issues.

The VCU Center for Teaching Excellence started an FLC program in the spring of 2005 in an effort to address two overarching issues. One issue was to reduce individual faculty isolation by building collaborations around common interests. Second was to address Theme II of the VCU 2020 Vision for Excellence strategic plan to become “nationally recognized as a learning-centered research university.”

Since that inception in the spring of 2005, the CTE has offered a number of FLCs on a variety of teaching and learning issues. Building on last year's success, the 2010/2011 FLC's include both core FLC's facilitated by the CTE, as well as FLC's supported by faculty groups across the campus:

Genetics, Health, and Policy: Teaching and Thinking Critically Across Disciplines

The goal of this FLC is to critically examine the pedagogical strategies for addressing the interrelationships between genetics, health, and policy within an interdisciplinary framework. The facilitators have explicitly sought to engage faculty from various disciplines and from both VCU campuses to spur engaging debate and discussion about strategies for promoting critical thought in the classroom about this complex topic. Too often complex issues such as these are only given a cursory discussion, and as a primary product from this project we aim to produce modular learning objectives that are trans-disciplinary and can be incorporated into many different parts of existing curriculum to provide educators an effective and concise means of promoting critical thought about this topic.

Teaching Strategies for Reducing Disaster Risk with International Disaster Case Studies: Beyond the Haiti Earthquake

This FLC is focused on understanding the antecedent conditions and root causes of disaster events and exploring best practices to prevent, mitigate, and prepare for them in the undergraduate and graduate pedagogy. The impact of the 2010 Haiti earthquake, the Boxing Day 2004 Indian Ocean tsunami, Hurricane Katrina, and 9-11 provide painful reminders of the vulnerabilities of communities to disaster risk. These events highlight the fact that natural, health-related, technologic and human-induced disasters are on the rise worldwide, including statistically-probable but unanticipated catastrophes as well as moderate-scale repetitive events. This FLC is a major attempt to address, comprehensively and in-depth, a pedagogical approach to the many issues associated with disaster risk reduction. This FLC had a forum on Haiti Rebuilding and Resilience in September and is hosting another case study presentation on Guatemala's response to the rain and mud slides on 26 October. A spring case study is planned for Louisianan and the Gulf disaster interrogating the global implications of rebuilding with an emphasis on mental health.

Black Education Association – Faculty Learning Community: A Conversation on Learning, Race and Pedagogy

In light of the mission of the Black Education Association (BEA), we created a Faculty Learning Community last year that began a conversation focused on how to enhance the learning experience of Black students at Virginia Commonwealth University. Over the 2009-2010 academic year, this FLC engaged in extensive discussions

centered around five foci:

1. How to become more responsive to student learning styles of students of color at VCU,
2. How to enhance the learning experiences of students of color at VCU,
3. How to more effectively evaluate the learning styles of students,
4. How to incorporate African American literature and experience into the classroom, and
5. How to more effectively bridge the gap between the African American community and the academy, particularly the faith, underserved, and prison communities.

Bringing together faculty with expertise in the social sciences (psychology and public administration) the arts (theater and performing arts) and humanities (literature) is no easy task. What has united us is our common commitment to enhancing the quality of education for all students, particularly students of color. What has emerged from our process is not only a solid, important research methodology but a new appreciation for the work of colleagues in other disciplines and an ability to frame a truly interdisciplinary conversation that we feel will be of value to other faculty in the BEA, at VCU and beyond.

Teaching Creativity

Creativity was chosen for this FLC because creativity is looked upon as a key to success in many disciplines: business, science, art, math, engineering, and medicine. However, we rarely teach people how to be more creative. This is a good topic for a FLC for the same reasons that there is an FLC on critical thinking. Critical thinking and creative thinking have similar goals -- to make one's learning richer and to make one's work better. Critical thinking is a reflective evaluation of work in order to make the work better. Creative thinking happens during creation of the work so the work that is produced is better. To think critically and creatively on a subject requires a deep understanding, and this leads to better learning on that subject. VCU has a commitment to encouraging critical thinking for obvious reasons. Since students learn differently and students work differently, it makes sense to also encourage creative thinking. The aspects of an FLC that connect most with this topic are collaboration and cross-pollination. This means to be able to connect with other instructors to learn how they teach creativity and inspire new thinking in their students, and to learn how it might happen differently in various disciplines.

Faculty Development in Teaching

Our Faculty Learning Community will focus on Faculty Development in Teaching (FDT FLC). Throughout the University there are individuals who work to design, provide, and coordinate faculty development activities for our teaching faculty. Some Schools and Programs have faculty and staff specifically assigned to this area. While many of us have had opportunities to interact in an occasional or informal manner, we have not had a structured setting for spending time together to share our professional experiences and expertise, review faculty development literature and evidence for best practices, and collaborate on faculty development program design and delivery. The FLC format will provide the structure to support this process as well as the flexibility to explore collaborations and projects that are most productive for the group.

Promoting Critical Thinking in the Classroom

Critical thinking is one of the more ubiquitous instructional goals in higher education and yet, it remains one of the biggest challenges for

The Marketplace of Ideas: Reform and Resistance in the American University

(Louis Menand, 2010, 174 pp., Norton, \$24.95)



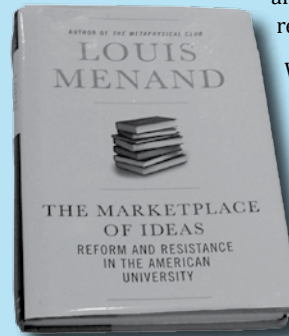
By J. M. Lucas

The Marketplace of Ideas, the sixth volume in Norton's Issues of our Times series, addresses four of higher education's most frequently asked questions: "Why is it so hard to institute a general education curriculum? Why did the humanities discipline undergo a crisis of legitimation?

Why has interdisciplinarity become such a magic word? And why do all professors tend to have the same politics?"

Discussions of the institutional crises that prompt these questions inevitably turn to faculty insularity. The academy may no longer have a glass ceiling, but apparently there's still a glass jar where professors hermetically seal ourselves for our own protection. The careers of author Louis Menand and series editor Henry Louis Gates, Jr., however, seem to belie the notion that we continue to set ourselves apart from the real world, clinging to our belief that, in the words of Menand, "the practical is the enemy of the true." Many readers of Gates' essay "Delusions of Grandeur" in *Sports Illustrated* will never read his literary criticism, and both he and Menand are as comfortable in their roles as contributors to *The New Yorker* as they are in their roles as Harvard professors. But *The Marketplace of Ideas* suggests that Gates and Menand are still the exceptions that prove the rule.

If the current lingua franca of interdisciplinarity becomes a moribund dialect, perhaps Gates and Menand's next collaboration could be for Rosetta Stone, developing a language-learning software enabling academics to hold conversations across disciplines. Interdisciplinarity, both as buzzword and as practice, remains alive and well on campuses, though; and according to Menand, it's as much a source of anxiety as it is a source of renewal.



Unsurprisingly, for academics, one of the sources of anxiety is semantics: "If it is disciplinarity that academics want to get rid of, they cannot call the new order interdisciplinarity. They also cannot call it anti-interdisciplinarity. It might be called postdisciplinarity, but that is asking for trouble. Maybe academics are stuck. Being stuck can certainly be a reason for anxiety."

Whether we're stuck or "going around in academic circles," as Richard Armour would say, Menand reminds us that "we want to feel that we are in a real fight, a fight not with each other and our schools, which is the fight that outsiders seem to be encouraging us to have, but with the forces that make and remake the world most human beings live in."

Writing of a similarly transformative time, in the Pulitzer Prize-winning *Metaphysical Club* (2002), Menand refers to Oliver Wendell Holmes, William James, Charles Sanders Pierce, and John Dewey as the men who "helped put an end to the idea that the universe is an idea, that beyond the mundane business of making our way as best we can in a world shot through with contingency, there exists some order, invisible to us, whose logic we transgress at our peril." For those of us making our way as best we can in a system of higher education shot through with contingency, *The Marketplace of Ideas* offers the Chicken Littles among us (myself, included) the consolation that our crises aren't really crises. More often than not, they're problems that evolved from "solutions" we left unattended.

- J. M. Lucas, Assistant Professor, University College, Focused Inquiry Program

teachers. Teaching a course on critical thinking is one thing, promoting critical thinking skills in your students, while teaching the course content, is completely different. Yet, accrediting agencies, graduate schools, and future employers continue to have high expectations regarding the ability of university graduates to be self-guided, self-reflecting, self-monitoring and self-correcting citizens. Since most of us haven't had any formal training, or feel particularly well-prepared on how to do this effectively, we are left to discover what works and what doesn't through trial and error, or by participating in a general workshop on the topic that rarely offers context specific guidance. Although many of us have heard of Bloom's Taxonomy, is that the best framework for integrating critical thinking into your course? Are there alternative frameworks that can be useful? Perhaps we need to ask bigger questions like, what does critical thinking mean in our own discipline. What should students be able to do to demonstrate that they can think critically and what kinds of activities will give them practice?

Networked Learning

The topical focus of the Using Technology to Enhance Teaching and Learning FLC for the 2010-2011 academic year is the exploration of the meaning and practice of networked learning in higher education. Members of this FLC begin with the perspective that the web has

evolved into a space that is social and participatory, and one that is creating new and exciting opportunities for learning with profound implications for higher education. The FLC is situated in a context where access to the vast storehouse of human knowledge is quite literally at our fingertips, where anyone with a connection to the Internet can publish text, images, audio and video, and where we can participate in web-based social networks that establish connections between one learner and other learners, and between a learning community and its shared learning resources. Within this context, traditional notions of where learning takes place, the teacher-learner relationship, and ideas of control and expertise are being [re]thought. Members of this FLC are exploring, using and critiquing web-based technologies and practices that support networked learning, as well as raising questions about their broader impact on education.

The 2010/2011 FLC program continues to provide a meaningful way for supporting and developing VCU faculty members, who regularly report that the experience is valuable and rewarding. Dedicating time and energy toward learning more about teaching and learning is beneficial, and it is coupled with the opportunity to meet and collaborate with colleagues from other departments and disciplines. You can find out more about the FLC program online at www.vcu.edu/cte/programs/faculty_learning_communities.

CTE Small Grants Program – Seeding Innovation

The Center for Teaching Excellence annually requests proposals from Virginia Commonwealth University faculty members for small grants to support their teaching efforts. The program is broadly conceived and can include requests for money to attend teaching conferences, purchase software, create a new course or undertake research projects that would benefit instruction. Proposals are evaluated on the potential for faculty development in the area of teaching, the impact on student learning and the relationship to departmental, school or university goals.

Each recipient of a small grant is responsible for writing a case report which is used to help evaluate the effectiveness of Small Grants Program. Following are summaries of the case reports from the 2009-2010 funded projects.

- Helena Carvahlo (PI), Crystal West, Negrisha Roach, & Wendy Calchary from Physiology and Biophysics for Physiology lab: An active learning approach
- Meghan Gough from The Wilder School for Green mapping as a decision-making tool for sustainable urban planning
- Penny Reynolds from Emergency Medicine for Promoting clinical statistics literacy of Emergency Medicine resident by technology-enhanced formative assessment strategies
- Brigitte Sicat (PI), Christine Huynh, Sallie Mayer, & Rita Willett from Pharmacy and Internal Medicine for Development of an interprofessional education experience in a primary care teaching clinic
- Ryan Smith from History for Historic Richmond cemeteries: Going beyond the classroom
- Jeffrey South from Mass Communications for Get your mojo working: Preparing mobile journalist for today's newsrooms
- Dewey Taylor (PI) & Richard Hammack from Mathematics for Improving the mathematics graduate student teacher training workshop
- Vamsi Yadavalli from Chemical & Life Science Engineering for Teaching nanotechnology via community outreach at the Science Museum of Virginia

Hands-On Exercise For Active Learning In Physiology

Helena Carvahlo (PI), Crystal West, Negrisha Roach, & Wendy Calchary Physiology and Biophysics

Students in general consider Physiology a difficult subject¹, mainly due the large amount of information presented and the complex terminology² associated with the subject. The importance of Physiology for the healthy science program is unquestionable. The great effort placed by the faculty to teach not always translated in lifelong learning and improve students ability to apply acquired knowledge³.

Physiology for undergraduates at VCU is offered as two separate courses: Human Physiology (Phis 206) that is lecture based and Human Physiology Laboratory (Phis206L) that is a practical course based on computerized exercises. While the lecture course is a comprehensive program that aims to covers the entire Human Physiology, the practical laboratory course was limited to the capabilities of the software utilized (BioPac and Endocal). The topics covered were Physiology of skeletal muscle, neurophysiology (as brain waves), cardiovascular, respiratory and endocrinology.

The AIM of this project was to develop new Physiology lab activities. These exercises aimed to fill the gap in the program offered to undergraduates at Human Physiology Laboratory course in the health

sciences at VCU.

Methodology: The project started by recruiting students from the Physiology and Biophysics Department interested in education. During Spring 2010 three students engaged in this project: one PhD student (Crystal West), one master student (initially Negrisha Roach, latter Kristin Simmons) and one undergraduate student (Wendy Calchary). Each one of them elected one topic in Physiology that was not being current covered in the course: Gastro-intestinal (GI), Renal and Sensory Systems (to complement neurophysiology).

Next step was brain-storm sessions to decide what would be an adequate Physiology exercise. The basic premise was to develop hands-on activity that would lead students to learn by doing and allow critical thinking. We search in the literature and found many interesting ideas. The goal, then, was to adapt and transform the exercises for our reality without the use of expensive equipment or computerized methods.

Three topics were select: 1. Fluids in the gastro-intestinal (GI) system; 2. Sensory system (special senses and touch) and 3. Urinalysis (excretory and regulatory functions of the kidneys).

1. Wendy Calchary was in charge of "Fluid Movement in the GI tract". The idea was to design an experiment where students would manipulate the amount of fluids (or its equivalent) that normally transit thru the GI tract (about 9 liters/day). After many attempts this task was accomplished by building a small model (one for each of the 14 stations) using empties syringes that simulate the organs that secrete and/or absorb fluids in the GI tract: mouth (including the salivary glands), stomach, small intestine (with accessory glands) and large intestines. With the use of three-way valve students would add or remove the equivalent fluid secreted or absorbed in each compartment resulting in variable output of fluid elimination. We expand its application to study fluid movement not only in normal conditions but also in altered states as diarrhea and constipation.
2. Kristin Simmons took care of "Sensory System". With so many important aspects to be cover in Neurophysiology, we decided to introduce a topic that everybody should be curious about: how the human body interacts with its surroundings. To discuss sensory system a sequence of short activities was developed aiming to present 1) Olfaction or Smell, 2) Taste or Gustation, 3) Audition (sound localization and sound waves transmission), 4) Vision (depth of visual perception) and 5) Touch (size of receptor field and receptor accommodation). Using simple and inexpensive material we initiate a discussion of complex topic. Certainly more time would be necessary to completely cover all aspects related to sensory system but we achieved our goal to introduce some of the neurophysiology observed on daily activities.
3. Crystal West was responsible for the "Urinalysis test". The goal was to offer some clinical experience while discussing important aspects of renal function. An exercise was written where students would do some of the routine tests that are performed in the analysis of a urine sample. Students were asked to analyze four different artificial urine specimens and compare results obtained with a normal sample with the others that simulates common diseases like diabetes and proteinuria. This activity allowed the discussion about physical aspects, importance of pH, normal and abnormal constituents of urine (as the presence of protein and glucose) among others topics.

Results: After tested the hands-on Physiology exercises among ourselves but the final test was done with students during the Summer semester. We compiled the three exercises into a Complementary Lab

Manual. It was distributed to the students to be used as a supplement for the BioPac lab manual normally used in class. The new exercises were included in the syllabus and students' participation was required.

A voluntary and anonymous pre and post-test was passed to the students before and after the new exercises took place showing good learn response. Also at the end of the semester a voluntary and anonymous survey were passed to the students to evaluate their perception and preference regards the hands-on activity. The response was highly favorable with 30 out 40 students expressing their preference towards the 'hands-on exercises' when compared with the traditional computerized ones.

Conclusion: The fund from the Small Grant Program was used to developed new teaching activities that result in a complementary Lab Manual. After a success test the exercises were incorporated in the course collaborating to improve the quality of the teaching offered to undergraduate students.

References:

1. Nordquist L. Physiology education and the linguistic jungle of science. *Adv Physiol Educ* 32: 173-174, 2008.
2. Feder ME. Aims of undergraduate physiology education: a view from the University of Chicago. *Adv Physiol Educ* 29: 3-10, 2005.
3. Carvalho H. Active teaching and learning for a deeper understanding of physiology. *Adv Physiol Educ* 33: 132-133, 2009.



Green Mapping as a Decision-Making Tool for Sustainable Urban Planning

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Project Background

Universities, including VCU, are developing agendas to integrate sustainability into teaching, research, and community outreach. Sustainable community development is an important and growing focus for urban planning programs because development patterns may lead to problems such as urban heat islands, social inequality, and global climate change. The VCU Master of Urban & Regional Planning (MURP) program initiated a new sustainability course, URSP 691 for which support was secured by the Center for Teaching Excellence to enhance integration of experiential learning about sustainable community development and activating the role of the student in the learning process. Green Mapping – an iterative, interactive tool for spatially documenting sustainable assets – was implemented as a learning vehicle for analyzing, evaluating, benchmarking, and informing urban planning decision-making.

Project Objectives

The primary objective of the proposed project is to re-orient this course so it embraces an applied and experienced-based focus to enhance student learning. Supporting project objectives include the following, in chronological order of the project progression:

- Using theory and principles of sustainable development operationalize sustainable community development objectives of environment, economics, and equity. What does social equity look like on the ground? How can we translate these abstract concepts into physical examples for which we can account?
- Collectively construct concrete sustainable living themes that serve as the basis for the Green Maps (i.e., transportation and mobility; food systems; natural resources and the environment), that will target a site inventory (i.e., location of bus stops, bike

lanes, farmers markets, wildlife habitats, cultural sites, etc.).

- Examine and inventory through field surveys and digital imaging sustainable assets within the boundaries of the selected study area.
- Analyze the existing geographical trends represented by the sustainable assets within the study area, highlighting patterns (i.e., connections of green spaces that could support greenway construction).
- Communicate the sustainable community assets and related patterns by generating Green Maps for each of the five themes, and post to the Richmond Green Map website for public display.
- Using the Green Maps as a basis for critique and evaluation, propose action and policy recommendations to guide Richmond in decision-making for improved sustainable living. Create posters to display the results.

Spring 2010 Results

In the Spring 2010 semester, students were introduced to this six-week activity of creating online Green Maps. Continuous and informal assessment techniques were utilized through peer and instructor feedback, using regular student progress reports and presentations of sustainability themes and assets, data collection and analysis. Students reported an enhanced understanding of sustainability and the heightened ability to evaluate their spaces from a planning perspective. Long-term student impact of this project is evident from a continued conversation with students of new assets discovered since the course. The tangible results included four Green Maps for the Downtown Planning District of Richmond, Virginia: Alternative Transportation, Culture and Recreation, Green Economy, and Technology and Design. Course products were posted for in a Richmond Green Map blog: <http://richmondgreenmap.wordpress.com/>.



Current Project Growth

This project laid the groundwork for years of classroom learning, scholarship, and community outreach associated with the Green Map. Recent developments include an agreement with VCU to support MURP students in completing a VCU Green Map that actively engages the community of students, staff, faculty and community stakeholders. Urban and Regional Planning will partner with the VCU Design Center in the School of the Arts to integrate advanced graphical illustration of Green Maps. The forthcoming VCU Green Map will identify existing assets, stakeholder testimonies and recommendations for sustainable decisions on campus. Furthermore, this project promotes and supports VCU's Statement of Sustainability adopted in July 2009, emphasizing the importance of identifying and reducing negative impacts on the environment, and developing examples of increased efficiency, all of which are outcomes of the Green Mapping process.



Promoting clinical statistics literacy of Emergency Medicine residents by technology-enhanced formative assessment strategies

Penny Reynolds
Emergency Medicine

Objective:

The purpose of this study was to increase resident reading comprehension of statistics in the clinical literature, and to evaluate the effectiveness of the program in changing reading comprehension.

Methods:

During weekly in-house resident education conferences, Emergency Medicine residents were given 10 monthly lectures designed to cover 13 learning objectives in three concept areas in clinical statistics. These were all identified as requirements for competency in Emergency Medicine training by the Society for Academic Emergency Medicine (SAEM), the Accreditation Council for Graduate Medical Education (ACGME), and the Council of Emergency Medicine Residency Directors (CORD). Lecture content de-emphasized computations in favor of concepts. Concept-based mini-quizzes were introduced throughout each lecture, and in-class assessment tools ("clickers") were used to provide immediate feedback with respect to areas of deficiency or misconceptions, and provide immediate and positive reinforcement to learners. These tools were used in conjunction with an established online course management system (Blackboard); outlines or readings were posted online before the lecture. Participants completed a survey on clinical statistics comprehension before and after the program; survey questions were based on Windish et al. JAMA 2007, and modified to reflect scenarios relevant to Emergency Medicine.

Results:

Results indicated that reading comprehension of basic clinical statistics remains poor. Pre-test median test score was 30%; post-test was 35%. There was no change in scores reflecting knowledge of clinical research designs, power, sensitivity and specificity, and sources of bias. In contrast, understanding of computation of relative and absolute risk increased from 25% to 70%; paradoxically, individuals were unable to translate this knowledge to computation of related metrics e.g. number needed to treat. On-line tracking of posted articles and study aids showed that very few, if any, residents availed themselves of these resources.

Conclusion:

To understand and assess information about their field, physicians must be able to stay current with the vast and rapidly expanding body of medical research literature. However, in this study, resident motivation to become familiar with basic concepts of statistically-based research is lacking. Clickers were useful in increasing engagement and participation in the subject immediately at hand, but did not serve to reinforce or encourage learning outside of the sessions. In contrast, use of clickers in teaching pathophysiology to firefighter-medics has had the opposite effect. In-class identification of areas of knowledge deficiency or misunderstanding through clicker-based quizzes may have increased studying outside classroom time (in progress).



Development and Assessment of an Interprofessional Education Experience in a Primary Care Teaching Clinic

Brigitte Sicut, Pharm.D.¹, Sallie Mayer, Pharm.D.¹, Susan Polich, EdD.²,
Christine Huynh, MD³, Rita Willett, MD³

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Background

The Institute of Medicine's report entitled, "Crossing the Quality



Chasm," calls for a drastic change in the health care system to enhance its quality, safety, patient-centeredness, timeliness, efficiency, and equity. A subsequent summit of health care professional educators concluded that in order to achieve this vision, all health care professionals should be trained to function in interprofessional teams and recommended a redesign of the health professional education process to provide health professionals, both in the academic setting and in practice, the knowledge, skills, and attitudes to work effectively in an interdisciplinary environment.

Objectives

The primary goal of the proposal was to formally develop and evaluate an interprofessional education (IPE) experience for pharmacy and medical students to learn with, from, and about each other in order to help them become aware of, value, and respect one another's contributions to health care. Specific aims were to:

1. Evaluate pharmacy and medical students' attitudes or perceptions towards each other and interprofessional teamwork before and after the IPE experience.
2. Evaluate pharmacy and medical students' disciplinary knowledge, as measured by an understanding of the factors that lead to medication nonadherence, before and after the IPE experience.
3. Evaluate student perceptions of learning gains after the IPE experience.

The project was approved by the VCU Institutional Review Board.

Description

The project took place at the VCUHS Primary Care Clinic. The IPE experience was developed and implemented in March 2010 for all pharmacy and medical students completing their 4-5 week clinical rotation in the clinic. All students rotating through the clinic now participate in the following IPE experience activities:

1. Completion of on-line modules that introduce learners to the professions of pharmacy and medicine, and interprofessional health care.
2. A pharmacist and physician-led group discussion about the professions of pharmacy and medicine, and interprofessional health care. During the discussion, students explore stereotypes of their own professional identities and those of the other profession, and the challenges and benefits of interprofessional care.
3. Pharmacy and medical students care for patients together in the student pharmacist-led Pharmacy Services Clinic and student physician-led Medicine Clinic. A pocket card outlining the suggested clinical roles for pharmacy and medical students during patient care visits was developed to help ensure sharing of decision-making and joint responsibility for patient care.

Assessment

All medical and pharmacy students participated in the IPE experience,

but only those who chose to participate in the study completed the assessments.

Students completed the following assessments pre-and post- the IPE experience:

- The Interdisciplinary Education Perception Scale (IEPS) to measure students' reciprocal attitudes toward each other and interprofessional teamwork.
- The Attitudes Toward Health Care Teams Scale (ATHCTS) to enable comparisons of attitudes of different members of the health care team.
- A concept map to evaluate pharmacy and medical students' disciplinary knowledge, as measured by an understanding of the factors that lead to medication nonadherence.

The following assessments were completed at the end of the IPE experience:

- The Student Assessment of Learning Gains (SALG) method was used to evaluate students' perceptions of the impact of the IPE experience on their skills and attitudes and the impact of specific IPE activities.
- Focus groups were conducted at the end of the IPE experience and a minimum of three months after the IPE experience.

Results

Data collection for this study is ongoing. To date, since the implementation of the Interprofessional Education experience, eighteen pharmacy students and twenty-two medical students have completed the IPE experience.

The preliminary results of this study were presented as a poster presentation at the July 2010 Annual American Association of Colleges of Pharmacy Meeting in Seattle, Washington.

Data from the focus groups reveal that students increased their understanding of the other profession's knowledge and gained confidence in how to work together and be of benefit to each other. There remained confusion about students' specific professional roles during patient care visits.

Students will continue to be enrolled in this study through May 2011. At that time, final data collection and analysis will occur.



Historic Richmond Cemeteries: Going Beyond the Classroom

Ryan Smith
Department of History

I study and teach American religious history. For Spring 2010, I proposed using the subject of Richmond's historic burial grounds as the theme for one of our department's senior seminar courses. Cemeteries are valuable sites for evidence about the past; beyond their importance to families and genealogists, cemeteries reveal and reinforce the broader racial, ethnic, political, and religious values inherent in their surrounding societies. Richmond has an especially varied, and politically charged, assemblage of historic cemeteries, dating from the mid-1700s. Many controversies involving these burial grounds have been in the news lately.

Our department's senior seminars (which are research- and writing-intensive courses) are typically framed within the seminar classroom and the library/archives. With my proposed topic, I envisioned a course that would connect students' research more directly with the surrounding community. So I applied for and received a CTE Small Grant to help defray the costs of several tours throughout the semester. The purpose of the tours was to take the entire class to the burial

grounds we were studying throughout the semester. Through such tours, we would explore our subjects firsthand, comparing those of different eras, races, and faiths, and we would view the burial grounds' contexts within the broader Richmond landscape. Also, we would meet community leaders involved in the sites' study and preservation.

Over the span of three excursions, we walked around six different graveyards and viewed five more from our bus, and we met four professionals in the field, all of which complemented our discussions and research. Nearly every student reported that the trips and encounters stimulated new questions for them – questions that they had not considered during our lectures, discussions, readings, and library research. All reported that they saw applications for their work beyond the classroom. Toward the end of the semester, we turned our attention more exclusively to individual student projects, which the students then presented to the class. Their resulting papers and presentations built an exciting foundation for future sections of this course. After the class ended, many students continued their involvement in the field, demonstrating a high level of engagement. The student comments offered during the confidential course evaluation speak to the success of this approach:

"Not only was this course so interesting, but coupled with the field trips, I feel that the impact that the course had on me was large. The field trips helped me to understand the topics about which we were talking in class and were also a great way to get to know the other students and even the professor," wrote one student.

"I applaud the university for funding our field trips around to local cemeteries, which proved integral to overall learning. It also allowed the university to work with local groups, an important endeavor," added another student.

Clearly, our students' interests correspond with VCU's larger goals of community engagement. We had the luxuries in this instance of a small class setting and CTE funding. The challenge for me now is how to apply these same approaches and techniques to larger classes and to those without extra funding. My students' experiences in this course convinced me that it is a challenge worth tackling.



Get Your Mojo Working: Preparing Mobile Journalists for Today's Newsrooms

Jeff South
School of Mass Communications
College of Humanities and Sciences

Background: The rise of 'mojos'

Newspaper reporters used to have only one deadline a day: They'd cover a government meeting or press conference in the morning, mosey back to the office, and by late afternoon or early evening type up a story for the next day's edition. But today's newsrooms operate on a 24/7 cycle: Journalists must file stories as they happen – starting with a 140-character "tweet" and perhaps ending with a 1,000-word analysis for the following day's paper. And they're filing not just words but photos, graphics, audio and video.

To report the news when, where and as it happens, newsrooms require "mojos," or mobile journalists. Armed with laptops and other technology, these reporters roam the community and file stories directly from news scenes. For example, Chuck Myron of The News-Press in Fort Myers, Fla., works out of his 2003 Nissan Sentra. "It's a smarter way of doing business," he recently wrote on the Media Bistro Web site. "I'm in the field where stories are happening instead of sitting at my desk, waiting for a phone to ring." Myron's stories go online first and only later might appear in print. He is expected to provide multimedia as well. "I'm a poster child for what may be a new

wave of journalism,” he says.

Project goals and implementation

Thanks to the CTE’s Small Grants Program, the School of Mass Communications is helping VCU’s journalism students catch that wave. My grant funded the purchase of relatively inexpensive tools to turn our young journalists into mojos. With the grant, we bought:

- Two netbooks (the Dell Latitude 2100 model), with wireless Internet access. We installed free or low-cost software for communication and multimedia editing, such as Skype, Picasa, Audacity, Soundslides, SnagIt and Video Spin.
- Two handheld camcorders (we chose the Kodak Zi8, because it has an input for an external microphone; the Zi8 captures high-resolution still photos as well as high-definition video). We also bought a lapel microphone and a mini-tripod for each Zi8.

During the Spring 2010 semester, I pilot-tested this equipment with my Capital News Service course (MASC 475), in which students cover the Virginia General Assembly. In this course, students produce articles, photos, slide shows, audio, videos and other content for publication by more than 70 newspapers and websites throughout Virginia. My hope was that the mojo technology would empower students to do more reporting directly from the Capitol or other breaking-news scenes. I wanted the CNS students to capture, edit and upload video, audio and still photos on the spot – and to write and file text stories faster than before. In this way, I hoped students would develop the skills and portfolios they need to launch their careers with today’s news organizations.

Results: More, faster, better journalism

During Spring 2010, there were 23 students in CNS. I made the netbooks and camcorders available for checkout on a spot basis by the CNS students: They could swing by my office and sign out the gear before heading to the Capitol. During our Monday and Wednesday class meetings, we reviewed how to use the equipment. (A few students had netbooks and Flip-style video cameras of their own; they helped train their classmates.) In class, we discussed the importance of mojo skills in today’s newsrooms. Several statehouse reporters for other news organizations visited the class to explain how they use technology.

When CNS students cover an event, I urge them to post a headline – a “tweet” – as quickly as possible on our Twitter feed [<http://twitter.com/vucns>]. Typically, students then write a story (500-700 words), which I send to our CNS clients and later post on the CNS website [www.capitalnews.vcu.edu]. Furthermore, I ask students to produce slide shows or videos if the news lends itself to multimedia.

One way to measure my project’s success is to compare the output of certain CNS news products in Spring 2010 against the output of those products in Spring 2009:

Tweets: During Spring 2009, CNS students blasted 186 “tweets” on Twitter. During Spring 2010, CNS students blasted 335 tweets – an increase of 80 percent. Many of these were filed directly from the news scene: from the press table on the House or Senate floor, for example, or from a meeting being covered by the CNS reporter.

Breaking-news stories: During Spring 2009, CNS students filed 17 stories directly from Capitol Square (either from legislative proceedings or from the press room in the General Assembly Building). During Spring 2010, CNS students filed 38 stories directly from Capitol Square – an increase of 124 percent. For instance, a team of reporters filed stories and photos from a Senate hearing on a controversial bill to regulate mining; another CNS staffer filed an article about teachers demonstrating at Capitol Square as the protest unfolded; and another student journalist filed her story from the scene of a rally for better health care at



the Capitol.

Multimedia: During Spring 2009, CNS students produced 13 multimedia packages (slide shows or videos). During Spring 2010, CNS students produced 26 multimedia packages – an increase of 100 percent. They included a slideshow of McDonnell’s inauguration; a slideshow about the debate over death penalty legislation; a video about the “Richmond 34,” a group of African Americans who helped overturn segregation; and a video about a proposed law to help illegal immigrants attending U.S. colleges.

Journalism students in the School of Mass Communications continue to take advantage of the mojo tools. I have made the equipment available to students in other courses – and, by providing models for mojo journalism, we have inspired many students to buy their own netbooks and camcorders. I am looking forward to teaching CNS again in Spring 2011 – so I can help the incoming group of CNS reporters develop their mojo skills as well.



Improving the mathematics graduate student teacher training workshop

*Dewey Taylor (PI) & Richard Hammack
Mathematics*

Project Overview

Historically, the Department of Mathematics & Applied Mathematics has not had a formal teacher training workshop for the graduate teaching assistants (GTA’s). In response to this need, we developed an annual two-day workshop to provide new and current GTA’s training in the basics of classroom management and pedagogy. This workshop is held every August before the start of the semester and is designed to give our graduate students the confidence necessary to teach classes on their own, as well as the knowledge of how to conduct themselves professionally in front of a class. We also provide students with a variety of teaching techniques and advice on how to prepare a lecture for a mathematics course. Students are required to prepare and present mini-lessons on topics from classes commonly taught by graduate students. We videotape their presentations and analyze their performance with them. Students also grade sample assignments from those courses.

In addition to the two-day workshop, the support for our GTA’s continues throughout the year. Each semester we make one classroom visit to see how their classes are going. The students are then required to meet with us to receive constructive comments and feedback on their teaching.

Results

We piloted the workshop in August 2009. The feedback from the graduate students was overwhelmingly positive and the Department

of Mathematics & Applied Mathematics has now made the workshop mandatory for all of its GTA's. With the help of the CTE Small Grants Program we were able to strengthen the workshop for August 2010 by providing each graduate student with a handbook specifically catered to the teaching of mathematics, *How to Teach Mathematics*, by Steven Krantz. This book was written for the novice mathematics teacher and serves as a reference for many young mathematicians during their first few years of teaching.

We have asked the students from the August 2010 workshop to write a reflection paper describing how the book has helped them to develop their own teaching styles. We expect to receive the first results from this survey in mid-November.

Future Directions

The department has already made the workshop a requirement for all graduate students wishing to teach. If the feedback from the students continues to be positive, we hope to find funds from our own budget to continue this program at its current level each year.



Teaching nanotechnology via community outreach at the Science Museum of Virginia

Dr. Vamsi K Yadavalli
Assistant Professor, Chemical and Life Science Engineering

Introduction:

Nanotechnology is a rapidly evolving area of R&D for the 21st century and a driver for future innovation and job growth. Recently, VCU received approval from SCHEV to offer an interdisciplinary doctoral degree program in nanoscience and nanotechnology, making VCU one of only a handful of programs to offer such a program. As nano-education at VCU comes to the forefront, it is imperative that we attract the next generation of students to be a part of this endeavor. As part of curriculum development in this area, the Engineering Elective course (ENGR 591/691) - "Concepts in Nanobiotechnology" was sought to be redesigned in the Spring 2010 semester (enrollment 10 students).

The specific aims of the proposed project were:

1. Form inter-disciplinary student teams to collaborate and design simple, hands-on demonstrations to teach nanoscience concepts to a non-scientific audience.
2. Develop informational materials including multimedia and handouts.
3. Disseminate this knowledge base via participation in NanoDay at the SMV and other community outreach events.

Implementation:

With the aid of this CTE grant, the following activities were supported:

1. *NanoDay at the Science Museum of Virginia*
Students designed experiments to teach nanotechnology concepts to middle school level students using constraints of low cost, simplicity and safety. Demonstrations included nanoscale ferrofluids, rate of chemical reactions, metal protection using wax nanoparticles, protein self-assembly, strength of nanomaterials and water purification using nanomagnets. These supplemented experiments developed by the Nanoscale Informal Science Education Network including length scales, DNA extraction, liquid crystals, shape memory alloys and "magic" sand. 10 museum volunteers joined the students and the PI in the demonstrations. The estimated attendance was in excess of 150 people. A presentation developed by the PI - "There's Plenty of Room at the Bottom - Adventures in Nanoland" introduced concepts of

nanoscience to a general audience (Aim 2).

2. *Outreach to the VCU community in the area of ethics in bio and nanotechnology.*

To encourage conversations in the area of the ethical, cultural, and societal implications of nanotechnology, bio-technology and cognitive sciences, Dr. Rosalyn Berne from the Science, Technology and Society (STS) program at the University of Virginia was invited to deliver a seminar on "Science Fiction, Nano Scientists and the Moral Imagination" on April 19, 2010. To promote this seminar, the PI partnered with the STS initiative at VCU. This seminar was advertised using different communication tools including the VCU Telegram, Facebook and flyers across campus. Dr. Berne's seminar, held at the Ethyl Auditorium in the School of Engineering on April 19th, 2010 from 4:30 - 6:30 pm, was widely attended with around 40-50 people in attendance.

3. *Continuing outreach to middle and high school students in the Richmond area.*

Finally, as proposed (Aim 3), the experiments designed by the students were used as part of the Summer Discovery series in the School of Engineering on July 13th, 2010. 10 students spent an afternoon learning about nanoscience. We further aim to create an online repository of these experiments (Spring 2011) for access by the VCU and national nanoeducation community.

Future Development:

Assistance from the CTE has been invaluable. The success of outreach via the NanoDay program has assured that it will continue as part of this class for the next few years. Informal discussions revealed that visiting kids were very excited by the hands on demonstrations. Future assessment will also include surveys of the additional volunteers recruited to help us out. This set of high school students forms the nucleus of our future enrollment and would be ideally suited to be surveyed about their understanding of nanotechnology and the benefit of such demonstrations in making educational choices.

IRB Guidelines for Classroom-based Evaluation or Research Activities

*Lisa Abrams, PhD, Assistant Professor, School of Education and
Monika Markowitz, PhD, Director, Office of Research Compliance and Education, Vice President's Office for Research*

CTE grant recipients who are interested in publishing papers and/or presenting at conferences on the evaluation results of their CTE supported projects are reminded to seek VCU IRB approval for the evaluation/research activities if the project meets the definition of 'human subjects research.' All 'research' that involves 'human subjects' requires VCU IRB approval; this includes research that is conducted within the context of the classroom and may include instructional as well as assessment activities. Faculty can find out more information about what constitutes research with human subjects on the VCU IRB Policies & Guidance webpage. If a project utilizes a systematic approach, but does not develop or contribute to generalizable knowledge, it is not considered 'research' for IRB purposes. Although such projects may be published or presented for informational purposes, they should not be referred to as 'research' projects. If such a project starts as program evaluation or quality improvement, but the focus changes to 'research,' stop the project and submit to the IRB. Please see the following link: <http://www.research.vcu.edu/irb/activities.htm>

Not Going It Alone: Collaboration and Online Instruction

By Tara Dacey and Mary Boyes

Advertisements for college or university online courses almost always focus on the enriched and satisfied student: a mother of three developing computer literacy after her children have gone to sleep, a construction foreman reading an economics text on his laptop over breakfast before heading to work, a full-time freshman using her smart phone to study for a sociology course during her summer vacation at the beach. In these ads, rarely is the instructor emphasized. Online courses are, after all, about offering students a means of flexible, focused education.

Still, online courses ARE also about instructors and, from an instructor perspective, there are plenty of benefits to teaching online. A distance classroom affords greater flexibility in an instructor's schedule. A distance classroom forces the instructor to create a more systematic structure and a higher level of transparency in offering all phases of the course in a single online platform. The physical distance that students have from classmates and the instructor in an online course often fosters greater ownership of the learning process—one of the most significant benefits of both teaching and studying in an online environment.

But there is a natural parallel to all the benefits listed above. If an instructor builds her online course alone and teaches it alone, a distinct isolation can creep in—a weariness over the monotony of the computer screen, a transactional attitude toward the exchanges taking place in the online classroom. If an instructor teaches in a department where few online courses are offered, she may not find an effective sounding board for her ideas about translating a course to the online arena or employing new educational technology. This lack of support and collaboration can breed an uncertainty that finds its way into the virtual classroom.

Since we both taught online courses using pre-designed modules before accepting positions as writing faculty at VCU, we knew about how lonely the online life could be and decided that collaboration would be essential to our success in developing an online version of UNIV 200, Writing and Rhetoric Workshop II—a writing-intensive course that focuses on rigorous academic research and argument. With that in mind, we decided to participate together in the CTE's Summer Teaching and Learning with Technology Institute.

The 2010 Summer Institute allowed faculty, whether they were collaborating or working alone, to intensely focus on shared and divergent practices and theories of the place of online education. Not only was the Institute a place where faculty could engage in interdepartmental conversations about the state of online education, it was also a resource jackpot. The facilitators of the CTE introduced us to a host of online technology from using Wimba for creating synchronous online meetings to Camtasia for creating modules to Wikis to Tweeting in an academic environment to using Delicious for collective bookmarking. While the CTE's Institute is not the place to gain mastery of this vast store of online technology, it IS a great place for learning about what technologies have worked well for other faculty in other disciplines. Though we won't teach the pilot sections of our course until Spring 2011, the collaborative approach to building an online course has benefitted us. Our work as a collective has banished the sense of isolation and flatness that we both felt in earlier online experiences. The trial and error process of exploring new technology and attempting to bend Blackboard 9 to our wills was significantly less frustrating when we worked together. Our workload in outlining our online course has been greatly reduced. Most importantly, we are now able to reiterate concepts and techniques to each other so that we are both sure we have a concrete understanding of how an online course should be constructed.

We view the development of this writing-intensive course as an act of translation, converting the most effective ideas, activities and practices in our face-to-face classrooms into material we can use in a distance capacity. But this translation is one that is influenced by more than one voice and ear. Because we can have an ongoing conversation about the same course, our interpretation about how to take it online is more

robust, more creative, and, a lot more rigorous.

UNIV 200 is meant to be a facilitated exploration of independent research and academic argumentation, but we both have our darlings within that structure, so our courses will benefit from having one instructor's emphasis on research training and another's stressing of the value of workshops and redrafting. In combining our visions for online adaptation, we identified clear goals at the heart of our course and blended our most effective approaches.

This semester we decided to use a hybrid approach in our face-to-face classrooms in order to try out various strategies we hope to use in our online course—blogs, Cmap, discussion boards, online work-shopping. Every week or so, we meet informally to assess which strategies work. So far, we have found that with these new strategies our students take greater ownership of their work, consistently participate in class conversations, and submit work in a more timely fashion (we think this is because of online time and date stamps). The online components also seem to decrease expectations of the instructor to be a secretary or editor, and to prompt students to be more forthcoming about helping one another. In short, because of these new online components in our face-to-face classes, students seem to gain authority and confidence in academic conversations and to be much more likely to support one another through the forum of an online discussion. Collaborating has allowed us to articulate expectations more clearly when teaching skills and concepts in class.

As we work toward completing our online course, we know we have the support of each other. Additionally, we now have the expertise of our students who have benefitted from our experiments this semester, as well. Our students offer us first-hand insight about what does and does not work and the CTE offers us support and expertise as to how to make things work. What began as an attempt to feel less isolated as instructors has now become our preferred method for course design, whether face-to-face or online.

- Tara Dacey, Research Writing Instructor, University College;
Mary Boyes, Assistant Professor, University College

Online Course Development Initiative

In an effort to enhance and grow quality online course offerings at VCU, the Provost's Online Course Development Initiative was designed to provide individual faculty members with an opportunity to learn about online pedagogy, and the support to design and teach an online course. This initiative consists of several components that were designed to develop individual faculty expertise for teaching in the online environment, and to assist schools and departments in the strategic development of courses that are suitable for online delivery. Faculty who participated in the initiative will be completing the following:

- Participation in the CTE's Teaching and Learning Online Summer Institute (June 7-11, 2010).
- Completion of an online course offered by Quality Matters called, Build Your Online Course (July 22 - Aug 5, 2010).
- Participate in three follow-up course design support sessions conducted by the CTE (August - November, 2010).
- Teach the developed online course (Spring or Fall 2010).
- Participate in an "Online Teaching Summit" with other faculty to share best practices and lessons learned.
- Engage in course assessment and redesign activities.

It is expected that faculty members who emerge from this process will be in a position to provide guidance and leadership for colleagues within their home school or department related to online teaching and course development. Evaluation of the program will be ongoing through the 2010 - 2011 academic year.

Here, There & Everywhere: A Review of *DIY U*¹



By Jonathan Becker

Introduction

DIY U, by Anya Kamenetz, is a book that lies at the intersection of higher education and modern technology. While Kamenetz does a fine job of bringing important issues and ideas to the public's consciousness, she ultimately struggles to create a deep or coherent narrative. In a review of Kamenetz's first book as well as another related book, Daniel Gross from Slate magazine wrote that, "it's not that the authors misdiagnose ills that affect our society. It's just that they lack the perspective to add any great insight." In *DIY U*, Kamenetz suffers the same fate. She points out legitimate problems, and offers a shallow examination of loosely-coupled possibilities for "transformation." In the end, though, at least for those that wrote and contributed to this review, there is nothing terribly insightful about *DIY U*.

Summary of the Book

Kamenetz organizes the book in two parts. Part I, dubbed "How we got here", is a set of three chapters intended to establish the 'crisis' in higher education that serves as the backdrop for the book. The so-called "crisis" in higher education can be summarized as: high demand, falling levels of degree attainment, rising tuition, and high student debt. Basically, as a nation, while demand for higher education has grown dramatically, our educational attainment rates have plateaued, and those that do manage to earn a college degree are faced with unprecedented levels of debt upon graduation.

Part II, dubbed "How we get there from here", is a set of three chapters wherein Kamenetz describes the Do-it-yourself (DIY) approach to post-secondary learning.

Do-It-Yourself University means the expansion of education beyond classroom walls: free, open-source, vocational, experiential, and self-directed learning. Technology upsets the traditional hierarchies and categories of education. It can put the learner at the center of the educational process. Increasingly this means students will decide what they want to learn; when, where, and with whom; and they will learn by doing (p. x).

In other words, Kamenetz looks largely to the Web where, like in other industries, "the great unbundling" happens. That is, the various components of the higher education experience (i.e. course content, teaching, socialization, etc.) can be 'delivered' separately and students can navigate their way through the choices with the assistance of "personal learning networks" (i.e. a self-selected collection of virtual relationships with people and content through social media). The increasing availability of open educational resources and networking technologies affords countless possibilities for self-directed learning. In sum, the DIY approach to higher learning lies at the intersection of technology and self-directed social learning.

A Critique of the Book

DIY U is informative if not insightful. That is, there is plenty of information throughout the book, and in some cases, maybe too much information. Fundamentally, though, the book has more limitations than strengths.

Generally, Kamenetz tries to do too much. Part I of the book consists of the first three chapters which are, respectively, about the history, sociology and economics of education. Entire books and, perhaps

ironically, courses of study, have been written and undertaken on the topics of each of those chapters. Scholars have devoted their whole professional lives to each of these topics. To devote half of the book to coverage of the history, sociology and economics of higher education does a disservice to those fields of study. Here, it also distracts from and delays the arrival of the promise of the title of the book.

With an appropriate and candid disclaimer about purposefully engaging in a surface-level synthesis, Kamenetz could have crafted a single chapter in the beginning that framed the problem. *Chapter One* should have been a synthesis of what is currently Part I in twenty precisely written pages, Kamenetz could have made a very compelling, evidence-based claim for her case that the institution of higher education is in crisis. In the remainder of the book, then, Kamenetz would have been free to explore the DIY approach and components in much greater depth.

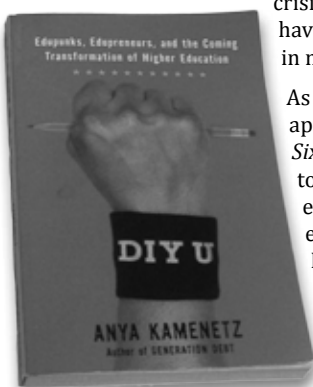
As it stands, it takes Kamenetz 107 pages to get to the DIY approach and then, even if we generously include *Chapter Six* as relevant to the DIY theme, she only devotes 28 pages to what is explicitly suggested by the title: "edupunks, edupreneurs, and the coming transformation of higher education". In *Chapter Five*, Kamenetz hits at the heart of DIY learning. In writing about the "edupunk" idea, Kamenetz writes, "[w]hat edupunk – DIY education, if you will – promises is an evolution from expensive institutions to expansive networks; it aims to fulfill the promise of universal education, but only by leaving the university behind" (p. 110). Kamenetz goes on to cite

John Seeley Brown's concept of "open participatory learning ecosystems" and the related evolving concept of "personal learning networks" (PLN) credited largely to Alec Couros who, in turns gives credit to Steven Downes who cites David Warlick (networked learning!). Both ideas are based upon open, social learning afforded by appropriate technological applications, an abundance of information, and a critical mass of participants willing to share, engage, interact, etc.

Given the title of the book, I expected to read much more about "free agent" post-secondary learners and the trends that make that sort of learning possible. The open education 'movement', for example, merits its own chapter if not an entire book-length treatment. Curtis Bonk's book, *The World is Open: How Web Technology is Revolutionizing Education*, is an entire book about online learning. Kamenetz even mentions Bonk's book on p.152 and refers to it as "massive exploration of the field of online learning". The DIY approach is not necessarily about negotiating free learning resources. Therefore, if the for-profit higher education industry is to be included as part of the DIY mix, then there is at least a chapter's worth of material about that industry, including what are likely compelling statistics about the growth of that industry.

Anya Kamenetz is a journalist who writes largely at the intersection of technology, innovation, and finance. Also, her first book, *Generation Debt*, was about the problems facing young people graduating from college with massive amounts of loans to repay. Writing about technology and higher education, then, was a natural marriage for her. Clearly, she learned a whole lot about the institution of higher education in researching both of her books. Unfortunately, in this instance, she tries to teach us everything she learned about higher education and, as a result, effectively buries the lead. The 'here' that Kamenetz writes about in Part I is fairly clear, if not overstated. And, by going nearly everywhere with respect to technology, the 'there' she writes about in Part II is a muddled place. Ultimately, then, we never truly get 'there'.

- Jonathan D. Becker, Assistant Professor, Department of Educational Leadership



¹ This article is excerpted from a larger review located at <http://ineducation.ca/article/here-there-everywhere-review-diy-u>

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