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The International HETL Review

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This volume contains articles published on the HETL Portal in the year 2012. It covers topics related to teaching, learning and research from a range of academic disciplines, with contributions from scholars across the world.

Patrick Blessinger, Publisher
Krassie Petrova, Editor-in-Chief
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Volume 2, 2012

Publisher & Executive Editor: Patrick Blessinger

Editor-in-Chief: Krassie Petrova



The International HETL Association

New York

The year 2012 saw a continued rise in the use of digital media and technology by higher education institutions and faculty. Hence, the theme for 2012, **University 2.0: Emerging Trends Shaping the University**, is a continuation of the 2011 theme: **University 2.0: Engaged Students**. Articles in this volume focus on emerging trends in higher education and how to better engage students and improve teaching and learning in the context of the this emerging university.

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Preface

The editors are proud to present the second annual volume of the *International HETL Review*, which is published incrementally online. It contains three interview articles, two book reviews, two feature articles, two academic articles, one opinion article, one technology review article, and one conference report, all published in 2012. The journal provides an international forum for educators, researchers, scholars, managers, administrators, and educational thought leaders from all over the world to disseminate their research in the field of teaching and learning or to express their views on topics germane to the field of teaching and learning. To assure we meet the highest academic and publishing standards possible, our publishing process sets a high standard of quality assurance and involves extensive peer-review from leading academics in the field. In addition to seasoned scholars and educational thought leaders, we also welcome work by promising junior academics and doctoral students.

The focus of this volume is on **University 2.0: Emerging Trends Shaping the University**

What the Best College Teachers

HETL interviewed Ken Bain who is the author of *What the Best College Teachers Do*. Cambridge, MA: Harvard University Press (2004). The book won the 2004 Virginia and Warren Stone Prize for an outstanding book on education and society and has been translated into twelve languages. Ken Bain believes that today's university students thrive best in cooperative classroom environments as opposed to competitive ones and that the best teachers use this understanding to create "natural critical learning environments."

Mobile Learning and the Future of Learning

In her personal statement on the Open University web site Dr. Kukulska-Hulme explains that she is interested in a broad spectrum of topics related to the use of mobile technologies, including learner and teacher perspectives on mobile learning, impact on second language teaching and learning, sharing and dissemination of good practice, and connecting policy and practice. HETL interviewed Dr. Kukulska-Hulme in Auckland, New Zealand, to further explore current mobile learning practices, research and impacts.

The Modernization of Higher Education in Russia

This interview provides an overview of current reforms on education in Russia with a particular focus on policy reform, participation, motivation and 'innovation hurdles' over the last two decades. According to Dr. Kovbasyuk, Russia needs to reach a national consensus on the future mission of education. Society faces two key challenges: 1) encouraging and supporting the younger generation to take an active part in the sociocultural construction of a new Russia that is aimed at overcoming the barriers between different social and cultural groups, and 2) attaining a unique position in the international education market. Within this context, Dr. Kovbasyuk believes that reform in education will contribute to the professional development of a new generation of teachers, will help expand open access resources, will better align vocational and higher education outcomes with labor market demands, will encourage public participation in

educational management, and will produce more researchers for the 21st Century innovation economy.

OnLive Desktop by Kevin Yee and Lissa Pompos

A technology review provides a critique and overview of a technology application - its usefulness to educators, its applications for teaching and learning, and its strengths and weaknesses. The technology review article is part user experience and part literature review on the specific application as well as on the broader technology in general. Its emphasis is on how educators can benefit from the practical applications of the technology. In this article, the authors explain how OnLive Desktop, an iPad application, can assist faculty in creating a more interactive classroom environment and a more engaged teacher-student relationship in the classroom.

Review of “Statistics for People Who Think They Hate Statistics”

In this book review article the author provides a critique and overview of a recently released book that may be relevant to both to educators and students in higher education - a topic that often poses a challenge to many students, especially those without a strong math background. The book review is a critical analysis (e.g., its relevance for teaching and learning as well as its strengths and weaknesses for teachers and students). Its emphasis is on how educators can potentially benefit from the book. The reviewer draws on his many years of experience in dealing with many different types of numerical and statistical problems to critically evaluate the book and he provides his seasoned insight into its usefulness to teachers and students.

Frontiers in Higher Education: A Procedural Model

In this feature article the author describes and discusses in detail an innovative "green" approach to global collaboration in teaching and learning that may be feasible and practical to adopt across a range of institutions of higher learning and academic programs. Based on her experience and based on multiple successful implementations, the author identifies the advantages of the proposed global collaboration model and critically evaluates its potential benefits.

Immersive Learning in Preservice Teacher Education

In this academic article the authors describes how Second Life was used as part of an online course to support preservice teachers and provide a means to investigate their beliefs and attitudes about gender roles in society. The data showed that using Second Life in this way created a more transformative and interactive online course experience which led to new insights about gender roles in society.

Social Media: Why This Matters To Everyone in Education

In this opinion article the author explores social media and the use of social media in an educational context applying a staged model proposed by the author. Daniel Clark views social

media as an immediate challenge with the potential to introduce major changes to educational approaches and paradigms.

Review of Ronald Barnett’s “Being a University”

In this book review of Ronald Barnett’s inspiring book the author successfully merges the general reader’s perspective with the insight and knowledge of an experienced educator and academic administrator to develop an intriguing and engaging story about the book and its author. The review helps guides the reader through the concepts and ideas of the author and summarizes the main points for the benefit of the reader. The reviewer complements her review with suggestions for extending the book’s scope and adding to the depth of the discussion. Overall, the review provides an excellent and in-depth commentary to the book.

The NAIRTL Threshold Conference Report

In this conference report the authors participated in the biannual NAIRTL Threshold Conference at Trinity College in Dublin, Ireland and also served as HETL Liaisons at the conference. In their report the authors summarize and briefly discuss the key points made by the distinguished conference presenters. The reader is able to gain an insight in how the conference worked and familiarize themselves with a number of viewpoints and new ideas. The authors suggest that the framework at the center of the conference (i.e., the threshold concept model) offers possibilities and options that can be explored further when the model is applied in a local context.

Exploring Tensions between English Teachers

In this academic article the author investigates how teachers’ beliefs and attitudes towards teaching academic writing translates into classroom practice and reveals some of the reasons for the mismatch between ‘intended’ and ‘real’ teaching. The author who is an expert in the area discusses the implications of the study with respect to improving language and writing teaching by adopting innovative teaching styles.

Academics as Teachers

In this feature article the authors explain how to support academics to become excellent teachers and How to develop strategies to motivate and engage students in higher learning. The authors tackle these difficult questions with rigor and enthusiasm and provide guidelines for academics and academic managers.

Krassie Petrova and Patrick Blessinger

What the Best College Teachers Do

Ken Bain

University of the District of Columbia, USA

HETL: Dr. Bain, in your book, *What the Best College Teachers Do*, you start out by asking the question: What do any of the best college and university teachers do to help and encourage students to achieve remarkable learning results? Then perhaps we should start this interview with the question: How do you define what it means to be a great teacher and how do you define “remarkable learning”?

Ken Bain [KB]: Both excellent questions, but not easy to answer. Let us start with learning and learners. I am heavily influenced by the research and theoretical literature on deep learning. As you probably know, a considerable body of research has found that university students will predominantly take one of three broad approaches to their learning and that these approaches, or intentions, direct what they do.

Surface learners intend primarily to survive, to get out of the course alive. You can hear it in the language they use. They often resort to what they think will be the easiest approach, namely to memorize stuff to be able to simply repeat it on the examination.

Strategic learners are driven by a desire for recognition, usually in the form of higher grades. They will do what they think is necessary to get those grades, but that is not the same as the deep learner who intends to understand, to think about implications of that comprehension, to think about applications and possibilities, to identify arguments and to distinguish in those arguments between evidence and conclusions. Strategic learners tend not to take risks (for fear it will jeopardize their grade point average) or to learn conceptually. They learn procedurally, how to plug the right number in a formula, or the right words in a particular form of essay.

Deep learners, by contrast, grapple with ideas, concepts, and the implications and applications of those ideas and concepts. John Biggs’s Solo taxonomy [1] helps us conceptualize what that deep learning might entail. The students at his highest (or deepest level) will learn to theorize and hypothesize. They will build new conceptual models and use those models to understand, analyze, synthesize, and evaluate. The Kirchner and King reflective judgment model [2] also captures a lot of what deep learners can do, and so does the concept of the adaptive expert. In short, deep learners undergo transformations in the concepts they hold. Their learning has a sustained and substantial influence on the way they will subsequently think, act, and feel.

HETL: Could you elaborate more on the concept of deep learning – how would characterize deep learning and its impact on the learner?

KB: I think learning can be defined in terms of the intellectual, artistic, and personal development of the students. One of the great teachers of the twentieth century, Paul Baker,

talked about helping students develop the dynamic power of their own minds. In Baker's terms that meant helping students realize their own unique perspectives and what it meant to create valuable work of the mind. Baker worked in the performing arts, but his ideas have important implications for all of our fields, from engineering/science to medicine to the arts/humanities to the social sciences.

Baker tried to help students see their own uniqueness and their capacity to develop perspectives that no one else can originate. But if each of us comes from a unique perspective that means that you can develop insights and perspectives that I would never originate on my own, and so can Einstein and Shakespeare. Thus, an important part of the creative process and learning derives from the ability to recognize good ideas that other people have developed and to make our own contributions to them.

I wrote that outstanding teachers will have "remarkable success" in fostering predominantly deep learning approaches and achievements in learning and that kind of unique personal development of which Baker spoke. I used the term "remarkable success" to indicate that such teachers will reach students and influence their learning intentions and successes in ways that go far beyond what anyone might normally expect with a given group of students.

In other words, some people might have "remarkable success" in moving difficult (and even unprepared or ill-prepared) students to a slightly higher level. The conception is not just based on how deeply students learn, but also on the influence that the teacher has had on their learning. Thus, some people working with students who are already learning deeply might not have as much "remarkable success" as someone who takes a group of disengaged students and turns them into very deep learners, with deep intentions.

HETL: Dr. Bain, why is being a great teacher important? Relative to other factors such as course design, subject matter expertise, and research, how important is the quality of teaching in influencing learning outcomes?

KB: I see teaching as anything someone might do to foster someone else's approach to and achievements in learning, including the learning that the professor does to prepare for the experience, or the design of the course and the curriculum. I am not thinking of teaching as just what one does in the classroom in front of students. In the book, I noted that all of the people I identified were accomplished learners in their fields, and that such learning seemed to be a prerequisite to their ability to foster deep learning.

I do not think you can separate the two (research and teaching). I think, instead, that we have to recognize that they are both concerned with learning. One is focused primarily on the learning of faculty and the other primarily on the learning of students, but there is a connection between the two. As it turns out, one of the primary abilities in both is the ability to ask important questions. That is absolutely essential in doing important research and it is fundamental to provoking deep learning.

Sometimes people teach most effectively through their writing, through the courses they design, and so forth. But I see all of these activities as teaching. Is it teaching if I publish an article in an

obscure journal that no one reads? Well, if no one reads it, then obviously not. But if a few people read it and they learn from it, then I have taught them something. The problem arises in terms of scale and in terms of levels of teaching and learning. I may teach those few people who read my obscure article written for very advanced learners, but that will not help me foster learning among my undergraduates, or even some graduate students. We have to think about teaching at different levels and to different groups.



Someone (a chemist, I think), once asked me why so many historians like myself are interested in the “quality of teaching.” That question made me stop and think, and I think it is because in a field like mine, what I learn becomes significant only if lots of other people also learn. But if five people in the entire world can “know” something in a field like chemistry then their understanding can have significance. My chemist friends are probably going to disagree, but my point is that I am not just interested in so-called “great teaching”; I’m interested in great teaching that reaches a large number of human beings, that helps significant numbers of people develop the dynamic power of their own minds and that helps them flourish as critically thinking, curious, creative, and, yes, compassionate individuals.

Achieving that goal requires well-designed courses, knowledge born out of research, sophisticated understanding of intellectual, physical, and social abilities, and what goes on between teacher and student in the classroom. I think we need to stop dividing research and teaching into separate and competing categories. They cannot exist without one another. And, as I say, I am trying to re-conceptualize them to see them as different parts of a common enterprise.

HETL: Dr. Bain, if the reward system for college faculty offers greater rewards for research than teaching then what incentive do teachers have to want to do great teaching and create great learning environments?

KB: I think part of the secret is in re-thinking the traditional divisions that we see between the two. What we have traditionally called teaching and research have something in common: learning. Rather than dwelling on the perceived conflicts between them, we need to explore ways that the learning of teacher and student can complement each other rather than stand in conflict. I think the most fruitful way of doing that may be in understanding the power and importance of good question-making in the success of each. The ability to ask good questions has long been recognized as central to research and publication success, but we also need to see its importance in cultivating someone else’s learning, and how, in turn, the ability to ask good questions to spark someone else’s learning can help drive a research agenda. Great teacher/scholars recognize that already.

The connection is this: people are most likely to take a deep approach to their learning when they are trying to answer questions or solve problems that they, the learners, have come to regard as important, intriguing, or just beautiful. Yet in a formal educational environment, the learner is usually not in charge of the questions. We could solve that problem by putting the learners always in charge of all the questions, and some people have attempted to do just that. But while that has some benefits, it also has limitations. Novice learners cannot imagine some of questions

that advanced learners have begun to consider. Thus, we need to have advanced learners (teacher/scholars) raising questions for novice learners (students) to think about.

However, that often creates a gap between the conditions that prevail in a formal educational environment and the conditions that may stimulate deep learning. The great teachers have learned to fill that gap by asking questions that students will find important, intriguing, or just beautiful, and they manage to do so because of their own deep understanding born out of their own learning. Their own struggle to frame the questions that will provoke students often leads to new insights that will influence their research. Cultivating someone else's learning entails more than asking great questions, but it is the necessary ingredient that underpins everything else.

But because it does involve more than asking great questions, great teachers have to be motivated by a lot more than by “will it help my research”. In my conversations with these people, I have discovered a wide variety of motivations including a sense of responsibility to the intellectual community and to its vitality. I think some people realize that the intellectual community that undergirds all of our research and learning benefits from having lots of people who are highly educated. Indeed, some people tell me that they are driven in part by a realization that every aspect of a good society depends on having an educated population. Thus, they are not content to concentrate rather selfishly on just their own learning, or even just the learning of their generation. Rather, they are driven in part by the sense of responsibility to the learning of all generations.



“What the Best College Teachers Do” published in Korean (2005)

I think some people also find great personal satisfaction in helping other people develop their minds, their knowledge, and their intellectual and personal abilities. These are intrinsic motivations. I have heard some people say that they find great joy in the creative accomplishment of producing a wonderful learning experience for their students, and I have heard people say that they feel a moral responsibility to foster the learning of their students. In short, I think there are a variety of possible motivations that go beyond the typical extrinsic motivations like salary and advancement.

HETL: Dr. Bain, how does the funding of higher education impact teaching and research? Can you provide some insight on that phenomenon?

KB: None of this, however, is designed to excuse or dismiss the enormous pressures that many people place on professors simply to turn out more publications and accumulate research dollars. Part of the problem is the way and the reasons higher education is funded in many countries.

The United States is an excellent example. In this country, we have never had a strong public policy of providing support for higher education. The closest we came to any kind of national policy occurred in the Lincoln administration (1860s) with the creation of land-grant institutions. I believe the last of the land-grant universities that congress created may have been the University of the District of Columbia in the 1960s and 1970s. Following World War II, there was a great push to increase research in the United States, and lots of public money came in the form of research grants from agencies such as the [National Institutes of Health](#), the [National Science Foundation](#), the [National Endowment for the Humanities](#), and others.

Meanwhile, presidents of public universities faced declining public support, which came largely through state monies, especially after about 1980. That meant that many public universities that had traditionally devoted themselves to student learning suddenly felt like they had to get more dollars from grants. But grants, so the perception goes among many university leaders, are most likely to go to people who have the most publications. Thus, presidents and provosts and deans started pushing people simply to publish. The amazing part of that whole history—in which we are still engaged—is that the emphasis on publications did not correspond to any emphasis on anyone’s learning, students or faculty. Thus, deans, provosts, and presidents would often simply count the number of publications someone would generate to decide if they deserved promotion and a higher salary.

They did not seem to care whether or not students or faculty members had learned anything, and when pressed, often could not discuss the intellectual contributions that a professor had supposedly made with all those publications. That process was, somewhat ironically, most likely to happen within the “teaching universities” that decided that they had to become research-intensive institutions rather than within the leading research universities. As a result, there is often a much friendlier atmosphere for people interested in student learning within some—but certainly not all—of the major research universities than there is within the “teaching university” turned “research intensive” university.

The pressures from this process have been slightly off-set in the United States by the other major means of getting funding to institutions of higher learning, financial aid to students. Because a substantial amounts of money flowed through students into the university—even for “private” institutions—there has been some pressure from those students to improve the learning environment. That has helped offset the pressures in the other direction.

I guess my fundamental point, however, is that I believe that there is no inherent conflict between faculty and student learning and that if we understand that research and teaching are really two important parts of a larger process of learning, we can avoid systems that simply blindly encourage publications, publications, publications with no emphasis on anyone’s learning.

HETL: Dr. Bain, you make the statement “that teaching is one of those human endeavors that seldom benefits from its past.” What do you mean by that?

KB: In general I meant that because traditionally people have not recorded and shared the insights they have developed from teaching, those insights and practices are not passed on to subsequent generations. A great teacher emerges, learns a great deal about how people learn and how best to cultivate that learning. They create wonderful learning environments for their students, but they do not necessarily share what they have learned with their colleagues.

We do not have a substantial body of literature that captures the insights and practices of the great courses that have been created in the past. Perhaps colleagues within a particular department spend thirty or forty years with a colleague who has developed great insight and practices and others learn from that experience, but it does not go beyond that point—except that some of the students in those classes may be influenced if they become educators.

HETL: Dr. Bain, then to what degree does personality type play a role in being a great teacher? For instance, are extroverts inherently more likely to be great teachers than say introverts?

KB: I do not know that they are. You can have extroverts and introverts who do not care about anyone else and their learning and you have others of both types who do. I think much depends on how much you care about the development of other people. It is true that in many traditional learning environments, it helps if you can get up in front of people and communicate with them. But I do not think that depends much on personality.

For instance, I am an inherently shy person, and I have had to struggle to learn to stand in front of a class and communicate. People tell me that I do a pretty good job with engaging a group of people now, but I had to learn to do that. It was part of my own personal development, and I pursued it for my own satisfaction, but had I not done so, I might have become better at creating good learning environments in other ways, with games I invented, or online environments I might produce.

I have no idea what kind of personality, for example, the people have who developed the Web site Starfall.com. But it is a wonderful learning environment for children learning to read the English language. It might even work for adults from other language backgrounds. I do not know. My oldest grandson—who is now seven—discovered Starfall.com on his own when he was about two, and by the time he was four, he had learned how to read. My youngest grandson—who is now four—is doing the same thing. The people who created that Web site are wonderful teachers, but they may all be introverts (or extroverts) for all I know.

HETL: Dr. Bain, can a teacher who uses primarily lectures still be able to be a great teacher? In other words, how important is method in being a great teacher?

KB: As I noted in the book, the great teachers I encountered employed a rich array of approaches to teaching. Someone like Derrick Bell—a great teacher who died in 2011 at the age of 80—never lectured as far as I know. Jeanette Norden creates equally powerful learning environments within lectures. As I wrote in chapter five, whether one lectures or not is not the key factor.

Rather, much of the success depends on what we call the creation of a "natural critical learning environment". It was the kind of learning environment that we saw in both Bell's class and Norden's class.

HETL: Dr. Bain, it seems that you are saying that great teachers are not only experts in their subject matter but they are also experts in how to create great learning environments. If so, how does one become an expert in creating a great learning environment?

KB: Two factors that I have not stressed thus far are important. You must have great insight into what it means to learn in your field, and you must have an equally deep insight into how people learn and all the personal and social forces that can both interfere with and support that learning. That is easier to say than it is to do, but it does require attention to the research and theoretical literature on human learning. I sometimes tell audiences that I taught for twenty years before it ever occurred to me to look at much of the literature on human learning despite the fact that such a body of literature existed and I was trying to cultivate other people's learning. Fortunately, I have been at this long enough (because I started teaching when I was five years old) that I have had another twenty-five years to read that literature. I think people should do it earlier in their careers.

Another major factor is the development of the ability to ask important and intriguing questions that will engage our students. We spend too much time pinning our hopes on our machines, hoping that computers or iPads or something magical will help engage our students. They won't. Students will become engaged only when they see the questions and problems as important, intriguing, or just beautiful. We can learn to use the arts—from poetry to film to music—to help raise the question, but we have to understand those questions and their connection with the questions that may already be on the minds of our students.

HETL: Dr. Bain, apart from any specific personality traits, do great teachers have a common set of practices (that is, behaviors) that make them great in your opinion? In addition to practices, do great teachers have a common philosophy (that is, a way of thinking), that make them great in your opinion?

KB: Great teachers will ask great questions in the process of creating that natural critical learning environment. I discuss that environment in the book, but the concept of the natural critical learning environment has continued to grow in our minds; some of our latest thinking can be found in a very simple form at <http://www.bestteachersinstitute.org/id30.html> and in the surrounding pages on that Web site.

As for whether or not great teachers have a common philosophy, it depends on what you mean by a "common philosophy." I do think that all of the people I have studied had a strong devotion to fostering deep approaches and achievements in learning, and they conceived of teaching as anything they might do to help other people learn. But everything I have said might be a part of that "common philosophy."

HETL: Dr. Bain, if you could give one piece of advice to a new faculty member wanting to become a great teacher, what would it be?

KB: I guess it would be to think carefully about what kind of paradigms their students are likely to bring to class and to think about the kinds of questions that might engage students deeply and challenge those paradigms, and how they can let the research on university teaching and learning inform their practices.

I think it is also important that we pay attention to the research on human learning. It never stops amazing me that some people who say they value research never consider to use any of the research findings when it comes to designing their own classes and learning environments.

I think that both new and established faculty members would be well served to look at the research finding on human learning when designing their courses.

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Bio

Dr. Ken Bain is the newly appointed [Provost and Vice President for Academic Affairs](#) at the [University of the District of Columbia](#), in Washington, DC, USA, and Professor of History and Urban Education. He is the founding director of four major teaching and learning centers: the [Center for Teaching Excellence at New York University](#), the [Searle Center for Teaching Excellence at Northwestern University](#), the [Center for Teaching at Vanderbilt University](#), and the [Research Academy for University Learning at Montclair University](#). Dr. Bain has given



workshops and has lectured at over three hundred universities and events in the United States, Canada, Mexico, South America, Europe, Asia, Africa, and Australia. He has received awards from the Harry S Truman Library, Lyndon Baines Johnson Library, the Ford Foundation, the National Endowment for the Humanities, and the International Studies Association, among others.

Every summer for the past seventeen years, he has brought five or six of the outstanding teachers he wrote about together for three days of workshops and conversations, and allowed approximately fifty other faculty members from around the world to join those conversations. This year that [Best Teachers Summer Institute](#) will take place June 20-22, 2012, in West Orange, NJ, just west of New York City. Additional information can be found [here](#).

Mobile Learning and the Future of Learning

Agnes Kukulska-Hulme

The Open University, UK

HETL: Dr. Kukulska-Hulme, let us start with a fundamental question: What is mobile learning? It seems that its definition has evolved to include not only technological, but pedagogical aspects, too. Is there something unique about mobile learning?

Agnes Kukulska-Hulme [AKH]: The use of mobile technology enables learners to make new kinds of connections between contexts; however this is not always the most suitable definition of mobile learning. Even though learners often support their own learning by using the technology to connect with others, or to make connections between learning episodes in different locations, *these are not necessarily the prime objective of mobile learning*. While some known definitions of mobile learning are reflective of specific research studies, a broader definition would include an emphasis on learner choice: learners can be more actively engaged in determining what, when, and how to study, that is, choosing their activities and the time and place to perform them.



With respect to the contextual aspect, mobile learning is not just about *connecting* contexts; rather it is about exploiting, or *creating contexts*. When we look at what learners are doing with mobile learning – it is clear that they take advantage of the convenience offered by having choice; or they take advantage of the specific context. Mobile learning can be taken to different places and then exploited to enhance its ‘learning’ component. In other words, the learner connects with the place where mobile learning occurs. These aspects of mobile learning are quite unique as they offer new ways to use

the features of the otherwise familiar mobile phone. For example, unique mobile applications that use augmented reality are already developed for smart phones and they provide a new type of context for mobile learning activities.

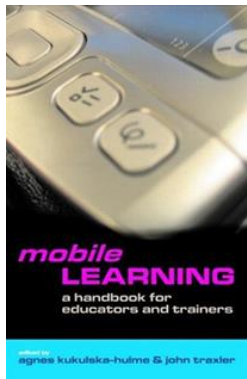
HETL: Dr. Kukulska-Hulme, mobile learning is a new paradigm, which was made possible by the emerging mobile technology. How does mobile learning compare to other types of technology-supported learning?

AKH: Mobile learning differs from other approaches in the pedagogical framing of the activity, as well as the type of software and the device used in the activity. A typical mobile learning scenario includes travelling from one point to another as part of the learning activity so an educational field trip is an example of a mobile learning application where the technology fits in very conveniently. However, such scenarios are quite familiar in education, and it is more difficult to ‘think up’ new scenarios.

New scenarios may be focused on people rather than solely based on technology. For example, these scenarios could be based on social experiences, and involving new types of participants and new types of resources. The traditional elements of pedagogical design will be present – learning objectives, resources, activities, outcomes, and assessment – but perhaps also new ones such as learner-generated content or collective intelligence. New features of the technology can be introduced to improve the learner experience, or enable experiences that would not be possible otherwise.

To develop highly innovative scenarios, one needs to have a good understanding of the opportunities offered by the technology. An excellent example is provided by the educational game ‘Savannah’ in which children played as members of a pride of lions in a virtual savannah (an augmented reality space in their school playground) . [2] The idea originated with and was developed by specialists who were deeply involved in the technology.

HETL: Dr. Kukulska-Hulme, as a practitioner of mobile learning, what are your views on how to deploy it pedagogically – what is the role of the student in mobile learning?



AKH: Students have to show us the way. They are often ahead of ‘us’ in using the technology. We need to tap into their knowledge – not only about technology but also about different ways of studying. Mobile learning provides more flexibility in terms of time, place, and resources and can adapt to their lifestyle. Previously, we as teachers were not interested in what learners were doing outside the classroom but now we have to take an interest and realize that a great deal of learning goes on outside the classroom also. It is not easy, and students do not always articulate their learning experiences and needs, so we need to find ways to ask the right questions.

Mobile technology can be used for capturing learner requirements, eliciting them from the class, or having students elicit them from one another. Learners also need to learn about themselves as learners. For optimal design, students will need to be aware of what learning is. If we agree that there is something unique in mobile learning, we need to know the best strategies for making the most of mobile learning.

HETL: Dr. Kukulska-Hulme, learner-initiated practice in the use of mobile device for learning sounds like a great idea. How are teachers going to cope with the fast developing technology, especially with the increasing student demand for mobile learning?

AKH: Mobile learning is a challenge for teachers. Teachers need to become life-long learners and be able to put themselves in the position of the learner. They have an important role in modeling the learning process. Teachers also need to learn to use the technology, because mobile technology is so personal. If one does not have personal experience, it is difficult to engage effectively with it.

Indeed personalization is a characteristic feature of mobile learning. And teachers need to develop strategies for collaborative learning, so that it is not all up to the teacher to ‘do’ the

teaching. Learners will find their own ways, especially the ones who are highly conversant with the technology.

HETL: Dr. Kukulska-Hulme, there are many ways to implement mobile learning in educational contexts. One of them is foreign language acquisition. Would you tell us more about that context?

AKH: Language learning is one of the key application areas of mobile learning, for a number of reasons. First, language learning is a life-long activity for many people. There may be many compelling reasons to return to language learning – for example career change involving a new requirement to travel and communicate in another language.

Mobile technology supports life-long learning very well. Both Internet-based resources and mobile applications are available to language learners, and it has become very easy for learners to use them. In some countries language learning applications are promoted by telecommunication companies who see them as a revenue gathering opportunity. Examples are studying English as a second language in Indonesia, or studying Spanish and Mandarin. [3] Mobile language learning is attractive because of its immediacy: often there is no need to go out and buy a book or anything else, the resources are already there or can be obtained very quickly.

HETL: Dr. Kukulska-Hulme, it would seem that learning a second language may have become easier with mobile technology. In the future, could mobile learning be a catalyst in the process of developing a truly multilingual global community?

AKH: Yes, it has become easier to learn another language. While language learning may be difficult for some, mobile technology can help them. For example, there are more opportunities to practice and receive feedback. It is also possible to become more active in defining one's personal language learning needs and problems by using a personal device to capture issues as they arise in interactions with target language speakers.

Mobile language learning has another unique feature in that the mobile phone can 'talk' on behalf of the person; it can become an extension of the person. This happens when a user plays something prerecorded, such as a sentence or a phrase, as part of a conversation. With mobile learning people are not going to necessarily master a foreign language, but it will go some way towards helping them to learn and communicate. The mobile phone can become a tool for learning about another culture as well.

HETL: Dr. Kukulska-Hulme, as a follow-up on the previous question, what is the place of mobile learning in other subjects and disciplines? What contexts would benefit most from using mobile learning?



AKH: Many disciplines could use mobile learning to their benefit. Science disciplines, for example, have always been at the forefront of using technology for learning – employing methods such as simulation, field trips, observation, and recording. Medicine- and the disciplines aligned with it (for example health

care) also benefit from mobile learning. Take for example a person who is diagnosed with diabetes. Mobile learning can help that person learn the skills needed to monitor and manage their condition on a personal level, to communicate with other diabetes patients, and to connect with professionals and peers. It is an evolving field with a huge potential.

Another discipline area is sports, both professional sports and everyday activities. As the mobile device is always ‘with you’, it can be used to capture performance data, and to motivate – for example by sharing achievements with others. Yet another area is mathematics in its practical application to the real world; or any area of learning where constant practice is necessary. However, practice-based and applied disciplines are not the only ones to benefit. Mobile learning can equally well support inquiry, theory-building, synthesis, critique and reflection.

HETL: Dr. Kukulska-Hulme, what can we do in order to make successful mobile learning implementations more widely known, and encourage others to adopt and develop them further?

AKH: Mobile learning needs to be demystified. We have to return the technology to learners and teachers, as in a sense it has been ‘hijacked’ by the research community. Research is sophisticated while mobile technology can be seen as just an everyday technology in the hands of its users – learners and teachers. It is important not to be ‘possessive’ about it, and give examples for everyday use – easy examples to start with.

There is a spectrum of possible activities – some not requiring a complex design, or significant resources. We need to identify the more feasible ones, before moving on. Also, it will be easier to adopt mobile learning if the inexperienced person teams up with someone else – working together will be much more practical.

Academics sometimes prefer not teams but informal groups. At the Open University for example, we have an informal group that meets once a month to share knowledge about new mobile applications. This works really well for us: not having enough time is a real problem so learning by sharing is an effective use of time, and has the appeal of a social activity. Informal groups are also effective because people can come and go as they wish, and can ask questions, which is more in tune with the way people prefer to learn these days.

HETL: Dr. Kukulska-Hulme, mobile learning is now a significant area of academic research, with specialized conferences and journals publishing scholarly results on the topic. How does research in mobile learning inform practice and policy development?



AKH: Research adds credibility to the introduction of new practices. It gives a sense of confidence about it. Research has a role in presenting a conceptual framework of the practice, so that practice can be understood and people can feel more secure about what is happening. Research also guides policy. We were trying to combine these elements in our recent project on best practices in mobile technologies for lifelong learning (MOTILL) . [4] We tried to find a way to interpret research for policy makers. We created a database of research that we analyzed for them in a way that they could understand. We had some good engagement and

positive feedback from policy makers in that project.

HETL: Dr. Kukulska-Hulme, a final question. It seems that universities could benefit from mobile learning. What do they need to provide in order to support it? Would mobile learning be disruptive to their current practice?

AKH: I can speak from the example of my own university: it comes down to adapting our curriculum to what learners want and need. For us, mobile learning is partly about attracting students – we know that many of them want to use mobile devices in their learning. Furthermore, mobile learners enrich the curriculum. The creation of the curriculum becomes a two way process. Learners add their distributed data and their global perspective.

However, mobile learning is disruptive because it changes traditional roles. Is disruption good or bad? It could be a threat to the status quo, but also it could be a positive influence – refreshing and revitalizing teaching, making it more attuned to what learners need. People attracted to mobile learning are initially people who like to experiment. If a teacher is not of this disposition, changing one's attitude may be really difficult. A great deal of change is going on in universities anyway so the introduction of mobile learning should be seen in the context of change. Success is not guaranteed and it may feel like a risky thing to do, but the potential rewards make it worth exploring.

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HETL interviewers: Krassie Petrova and Patrick Blessinger

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Bio



Dr. Agnes Kukulska-Hulme is Professor of Learning Technology and Communication and Associate Director (Learning and Teaching) in the [Institute of Educational Technology](#) at The Open University, UK. Her original background is in linguistics, terminology and second language acquisition, and for the past 16 years she has been working in educational technology. Professor Kukulska-Hulme has published widely in the areas of online learning, mobile learning, mobile usability, and mobile assisted language learning. Her recent work includes guest editorship of special issues of *ReCALL*, *Research in Learning Technology*, and *Open Learning*, all concerned with research and practice in mobile learning, as well as leading numerous projects investigating innovative practice with learning technologies in distance education and informal language learning. Professor Kukulska-Hulme is the current president of the [International Association for Mobile Learning \(IAmLearn\)](#). [1]

The Modernization of Higher Education in Russia

Olga Kovbasyuk and Alla G. Kuznetsova

Khabarovsk Krai Institute of Education Development, Russia

Olga Kovbasyuk (OK): It is well known that Russia was in a state of confusion during its first years of democracy in the early 1990s. After the 1991 collapse of the Soviet Union the centralized economic system broke down and the iron curtain fell. The state started to operate in a new political and economic environment. In this context, what major changes have occurred in Russia's education system during the last 20 years of democracy?

Alla G. Kuznetsova (AGK): The changes can be viewed from different angles, reflecting state attitudes towards education. In the 1990s, the state strove to reduce its influence over the domain of education; however the pendulum has swung in the other direction in the last decade with the state enacting modernization of the education system in 2001, aiming to improve the accessibility, quality and efficiency of education. The reforms carried out within this modernization period considerably changed Russian education. Major areas of positive change include: *institutional organization, infrastructure, personnel policy, content standards and educational technologies, quality assessment.*

[OK]: Let us consider each of these areas briefly. As we know, the institutional organization at the school and university levels inherited from Soviet times clearly do not fit in with the market economy, especially when the latter tends to change much more rapidly than the educational system itself. In view of the fact that the Russian educational system as a whole, and as represented by its various units (traditional educational establishments ranging from school to university), was not aligned with the basic mechanisms and values of the free market economy, (*competition, initiative, self-management, choice, responsibility, dynamism, among others*), there was a danger that the diverging paths of development could bring education in Russia into a risk zone. Overcoming the alienation between the economic and educational systems still remains critical in modern-day Russia. This is crucial both for the development of education, and for the development of human resources capable of meeting the challenges of the 21st Century.

Within the juxtaposition of the Russian economic and educational systems, which institutional changes related to education in Russia would you see as positive?

[AGK]: The economic recession of the 1990s led to a sharp decrease in industry demand for employees with up-to-date qualifications. This led to a growing gap between the educational system and the labor market: educational establishments continued to function without getting any signals from the market. The reconstruction of the economy after the year 2000 made use of the accumulated supply of qualified specialists, but most of the vocational schools were unable

to provide labor markets with employees who were equipped with the necessary qualifications in contemporary technologies.

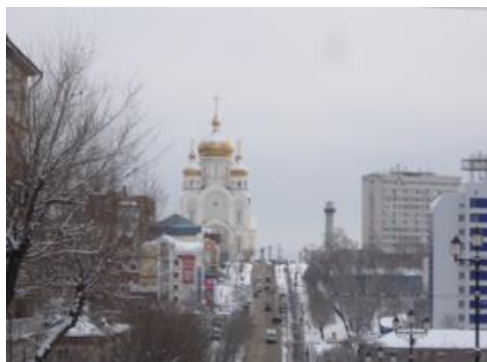


Institutional changes during the modernization period aimed to improve the alignment between the education system and the demands of the labor market. For example, the National Project “Education” was aimed at renewing incentives for professional competition in the educational milieu. The grants awarded by the state to the best teachers and educational establishments began to contribute to the formation of a healthy educational community.

However, allocating funding from the state on a ‘per student’ basis became a means of *quasi competition* among educational institutions, which led to a competition for students under the conditions of demographic decline. On the one hand, this provided a strong motivation to advance the quality of training in educational institutions. On the other hand, it caused an even bigger gap between strong and weak schools as municipal administrative bodies intervened by introducing their own powerful administrative regulations in order not to allow the under-achieving schools to go down.

Another financial tool aimed at fostering the development of education was introduced and tested during the current reforms. This was federal government funding of regional governments in exchange for specific obligations undertaken by regional institutions. For example, if a region wishes to implement an innovative educational programme in its territory, the federal government may share the cost of the programme. Programs such as “Computerization of the Education System”, “Children of the North”, and regional projects for the modernization of education have been funded through this scheme.

[OK]: Citizen education is a key responsibility of the educational system. In present-day Russia, this task is complicated by the historically-conditioned weakness of the civil society and its institutions. I believe that the limited participation of society and social institutions in the study and resolution of the problems of education decreases the activism and initiative of participants in the educational process. How would you describe the changes in public participation in educational management in modern Russia?



[AGK]: Public participation in educational management and policy-making is currently increasing, with educational institutions publishing annual reports on their work and activities on their websites. School boards of regents are being established in different types of educational institutions, and professional associations of teachers and administrators are being developed.

All strategic documents on education development utilized by the government during the modernization were open for public discussion before they were adopted. For example, the new law “Education

in the Russian Federation” was revised as a result of public discussion, and is now called the “Law 3.0” by the public. Federal educational standards were also publicly discussed and were revised twice.

Public experts have been trained and have participated in preparing a number of federation-wide projects which include “The Informatization of the Education System” and “The Development of Education up to 2015”.

The civil society that is emerging in Russia is represented by different kinds of associations, non-governmental organizations (NGOs), and other bodies. Many NGOs, sports organizations, professional associations, cultural societies and unions involve students in social activities - a trend which is viewed as positive.

At the same time, it is important to note that the current education framework represents the interests of individuals and society in a somewhat declarative fashion rather than in practical terms (i.e. paying lip service rather than taking action). Business and local communities do not yet participate in administrative councils which retain substantial powers. The participation of civil society in the development and elaboration of educational policies and in the management of education is not yet defined and regulated sufficiently. Furthermore, the state remains responsible for key functions which range from day to day administration and control to the management of the educational system.

[OK]: Reflecting on the current changes in Russia’s educational infrastructure, I recall the time when people did not have any choice about what school to attend. Every student was required to attend a school in his or her area of residence, regardless of whether they liked it or not. What are your thoughts on that situation?

[AGK]: The situation has changed with the modernization of the educational infrastructure in Russia. Students now have access to education in accordance with their educational interests, regardless of the geographical territory they live in. The introduction of a Unified State Exam has made it possible gradually to overcome two forms of inequality: territorial inequality and inequality linked to corruption and nepotism. As a result of the system reconstruction, financial and logistical support has been provided to small schools and to new types of educational institutions such as resource centers, socio-cultural centers and schools for children of particular ages.



In the area of professional education, infrastructure changes aim to improve the relationship between preparation of students in schools and the demands of the labor market and the economy. Technological equipment in vocational schools has been modernized and availability of software, databases and Internet access are gradually improving. Availability of educational equipment has grown by about 8 percent over three years and has reached 83% for higher educational establishments and 76% for vocational schools.

More attention has also been given to inclusive education for students with physical or developmental disabilities. In 2004, as a result of an important policy decision made by the Russian Ministry of Education, centers for educating students with disabilities were set up at prevocational, vocational and higher schools. As part of this initiative, new advanced courses for gifted students have been introduced. Distance learning has also increased, although a considerable number of distance learning programs set low entry requirements for students. Successful examples of mass distance education programs include the ones offered by the Moscow State University of Economics, Statistics and Informatics, by the Modern University for the Humanities, and by the All-Russian Distance Institute of Finance and Economics.

[OK]: A striking feature of our public schools is that students' performance declines as they get older. One would expect just the opposite. Success at lower educational stages should lead to even greater success at higher stages, but this does not occur. It seems that this phenomenon occurs because young people gradually lose interest in school and lose the desire to learn as they get older. Why do you think this is so?

[AGK]: The motivation of students depends on many factors, as we all know. Among them, educational content and educational technologies play an important role. In Russia, innovation has gradually taken place in both of these areas. New standards have been created for high schools and professional education, which aim at developing the personal and professional competencies of students. Communication and information technologies are being introduced, although the situation with educational technologies in schools is not as good as it should be, given the fast changing global educational environment.

What encourages students' initiative and motivation to study is an effective teaching strategy. Teachers in Russia have gradually moved from a pedagogic approach based on "transmitting knowledge" to a strategy which includes facilitating learning, supporting students and generating interest in learning. I have to admit, however, that recent studies have demonstrated that lecturing as a teaching strategy continues to dominate in the classroom, while active and individualized forms of learning are still not that common.

[OK]: The quality of the teaching profession is vital for any country to succeed in educating the younger generation. What do you think about the changes occurring within the personnel policy and teacher quality assessment system?

[AGK]: I agree that progress in the educational system largely depends on the quality of the teachers. Despite the existence of tens of thousands of outstanding teachers in Russia who are highly educated, dynamic and committed, there is almost no competition for entry to teacher training institutions due to the low enrollment criteria and to the perceived low status of the teaching profession. Most graduates of teacher training institutions do not consider professional work in education to be a means of social mobility and economic success. At the same time, teachers of pre-retirement and retirement age continue to dominate schools; they experience ongoing difficulties with the shift from traditional teaching and learning methods to more modern teaching and learning methods.

The progress in the education system also depends on the personnel policy, which at present is gradually changing in two directions: improving teachers' qualification levels, and providing social and economic support for teachers.

Requirements to upgrade the qualifications of teachers are on the increase. According to the new criteria, teachers need to pass a qualifying test once every five years. The government finances teacher re-training once every five years and provides a choice of programs and locations for this.

Social and economic support for teachers entails increasing salaries, targeting government support schemes (such as co-financing utility payments) at village teachers, offering bank credit for the construction and repairing of houses, government and presidential 'top teacher' awards, 'teacher of the year' awards, and others. However, teachers' wages in Russia remain low and are far behind wages offered in businesses and in industry.

During the last decade a new teacher quality assessment system was introduced, which allows for the monitoring and comparison of educational results and achievements across different institutions and territories. This system consists of three components: student final exam results (state exams for students completing grade 9, unified state exam for high school graduates, and state qualification test of higher education graduates), ongoing monitoring of learning proficiency, and an internal quality grading system within institutions.

In general, the educational system has been changing along with the overall reforms in Russia during the last ten years. Innovations are however often introduced under strict administrative regulations. I think this is the major reason why changes in the system are not internalized and why teacher-student interactions remain hierarchical rather than dialogical. In the hierarchical classroom teachers "transmit" knowledge rather than develop competencies.



To illustrate this, we can look into the achievements of Russian high school students as reported by various international studies. For example, according to PIRLS and TIMSS ([Progress in International Reading Literacy Study](#) and [The International Math and Science Study](#)), which estimate *knowledge and skills*, Russian students score highly.

This is evidence that strongly confirms the dominance of transmissive pedagogic strategies. However, according to RISA (Regional Integrated Sciences and

Assessments) which estimates *competency* level, Russia scored very low in 2000, 2003, 2006, and 2009. This reveals how far Russia underachieves where the efficiency of developing competencies is concerned, and that only a few changes, if any, have occurred in teacher-student

interaction, in spite of the new educational standards, teacher re-training programs and quality assessment systems.

[OK]: What do you think are the main reasons for such underachievement in a number of areas? How can the situation be improved?

[AGK]: As I see it, the modernization of education in Russia was not fully realized due to the inertia in the old administrative regulation of education. The hierarchical system of orders and instructions still dominates and it takes a long time for a new culture and style of management to evolve. What I mean is the style characterized by strategic thinking and collegial decision making, individual responsibility and objective evaluation of the results. People are used to following orders, but not turning their ideas into action. Those who are concerned with following orders care mainly for control and reporting. Only those who translate their ideas into action are able to create new projects, explore new ways of doing things, probe, and innovate.

I believe that a new type of teacher will emerge along with the introduction of a new management system that will enable one to revise and update educational content, to improve student-teacher interaction, and to develop new ways of thinking, acting, communicating, and collaborating.

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Bio



[Professor Olga Kovbasyuk, Ph.D.](#), is Professor and Associate Dean for International Relations at the [Khabarovsk State Academy of Economics and Law](#) in the [Russian Federation](#). She is the founder of the [Far East Russia Global Learning Center](#) and a member of the executive committee of the [HETL Association](#). She has been teaching, training, and managing educational services in the fields of education, intercultural communication, and international management for the past 25 years. In 2008, she founded a global learning center in conjunction with the 3 leading universities in Russia and the USA aimed at integrating global learning into the curriculum. Her international experience includes: [Fulbright International Exchange of Scholars Program](#) at the [California State University, Sacramento](#), USA (2004-2005), [DAAD Academic Research Program](#), Germany (2009), and has worked in more than 15 countries as a manager of academic exchange programs and as a consultant on managing cultural diversity for business companies (Alliance, Shell, Rostelecom). She has delivered over 70 presentations and publications in the fields of intercultural education and management. She is a native Russian speaker who also speaks fluent English and German.



Dr. Alla G. Kuznetsova is Professor of Education and Rector of the [Khabarovsk Krai Institute of Education Development](#), a member of the Research Board at the Institute of Theory of Education and Pedagogy of the Russian Academy of Education, and a member of the Russian Academy of Social and Pedagogical Science. Dr. Kuznetsova was awarded the “Excellence in Public Education” medal by the Russian Ministry of Education for her contributions to the development of education in Russia and in the Khabarovsk Krai. Dr. Kuznetsova has developed an integrated research system approach methodology model that is based on the concept of interrelated development of methodology for pedagogy and methodology for a systems approach. Dr. Kuznetsova lectures on innovative management in education, strategic management of education development, methodology of pedagogical research, contemporary concepts and technologies in teaching, and theory and methods of child development. She has authored nearly a hundred publications in professional journals (in Russian), including numerous research papers and books. She is the Editor-in-Chief of *Education in the Far East: theory and practice* (Образование на Дальнем Востоке: теория и практика). See also Dr. Kuznetsova’s [LinkedIn profile](#)

OnLive Desktop: An iPad Based Technology for the Classroom

Kevin Yee and Lissa Pompos

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Abstract

This article presents a review of the [iPad](#) application “[OnLive Desktop](#)” and discusses its potential classroom benefits. OnLive Desktop allows iPad users to both create and present files and presentations with the full capabilities of Microsoft® Windows® programs such as Word, Excel, and PowerPoint. In addition, OnLive Desktop users can view Flash® files within the application. This unique combination of the iPad’s portability and OnLive Desktop’s desktop capabilities and annotation features has the potential to change teacher-student interaction in the classroom.

Keywords: OnLive Desktop; iPad; iPad apps; interactive presentations; Microsoft Windows; PowerPoint

Introduction

The field of software [applications](#) (commonly referred to as “apps”) designed for the [iPad](#) (a [tablet computer](#)) has quickly become crowded as both users and developers have discovered a need for unique programs that leverage the particular capabilities of the iPad. Although not as big as a desktop PC or as small as a [smartphone](#), the iPad combines features of both devices. Yet, it has been difficult to find true bridge technologies that allow it to replace both the phone and PC, even if only in certain contexts (Travis, 2010). [OnLive Desktop](#) is one such bridge technology. It runs on both old and new iPads with operating system iOS 4.3 and higher.

Much of the iPad’s critique has focused on its status as a “passive consumption device” (Budi & Nielsen, 2011; Foote, 2010; Parry, 2010), but some have argued that the iPad has the potential to actively engage students through its rich media experience and portable, sharable size, both of which foster classroom discussion and collaboration (Bradshaw, 2011; Budi & Nielsen, 2011; Foote, 2010; Wieder, 2011). One way to tap into these educational goals is by using applications that allow instructors to create and share content in a portable and interactive way. Many applications can approximate the functions of full-scale PC programs, but usually at the cost of providing a “workaround” rather than a full-fledged solution.

OnLive Desktop is a new application released in 2012 that combines the power of desktop computers with the mobility of cell phones, all contained in the iPad environment. The basic OnLive Desktop service is free but [enhanced services](#) require a monthly fee. Users upload their files to the company’s Web portal using a service called [OnLive Files](#). OnLive Files stores the

user's files for use with the OnLive Desktop iPad application. OnLive Desktop allows iPad users to both utilize the full capabilities of Microsoft® Windows® programs such as Word, Excel, and PowerPoint, and browse Flash® websites.

Installation and Set-up

After downloading the OnLive Desktop application to the iPad, users sign up within the application, and then are connected to a Windows 7 desktop. This is their personalized desktop space in the cloud. In practice it is exactly like using [Remote Desktop](#) or [VPN](#) to access a computer from a distance. OnLive Desktop is also compatible with many [Android devices](#) in addition to the iPad. Moreover, while the application features a Windows desktop, both PC and Mac users are able to update their application files through OnLive Desktop's external website. However, for users who would like to externally display the application via [streaming](#), OnLive Desktop requires the iPad 2. Lastly, OnLive services are currently only available in North America and the UK, but the company [plans to expand](#) the services into Europe and Asia.



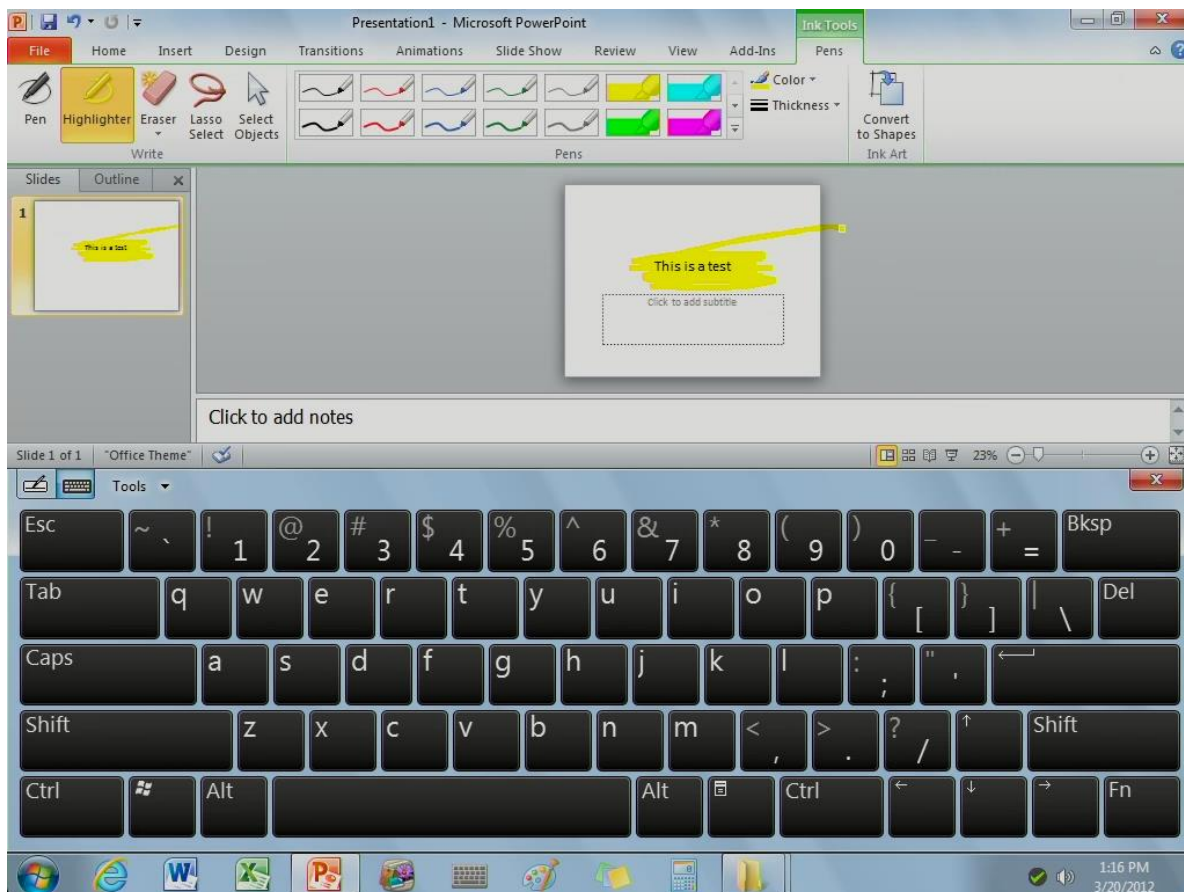
Screenshot: The OnLive Desktop.

In this case, the Windows 7 environment comes complete with many familiar tools already installed, like Microsoft Word 2010, Excel 2010, PowerPoint 2010, Paint, Adobe Reader X, the Windows calculator, and a sticky notes program that accepts both handwritten scribbles or notes typed using the call-up keyboard. Programs load very quickly, and since this virtualized PC is

maintained by the company rather than by users directly, there is no need to run updates or upgrade to the newest program. Regardless of the program run, files are stored on a Documents folder on the desktop.

Knowing that users would want access to those files, the designers of OnLive Desktop have wisely crafted a method to download them (or upload others) from any PC or Mac, in the form of the <http://desktop.onlive.com> Web site. Users sign in here with the same credentials created on the iPad application and click on the “OnLive Files” link to see their files. They will see a browser-based file manager that looks and functions like an [FTP](#) site, with intuitive one-click controls to delete any existing files or upload new ones.

Many users will seize upon the ability to work with native (rather than converted) Word, Excel, and PowerPoint files as the main highlight of OnLive Desktop. The programs here are not limited to partial functionality; they are the full-featured regular Microsoft Office programs. They do have an additional tweak for use in the iPad environment, however, in the form an “ink tools” tab. Here users are provided a pen and highlighter (each available in a variety of colors) and an eraser, which can remove the overlaid pen or highlighter marks.



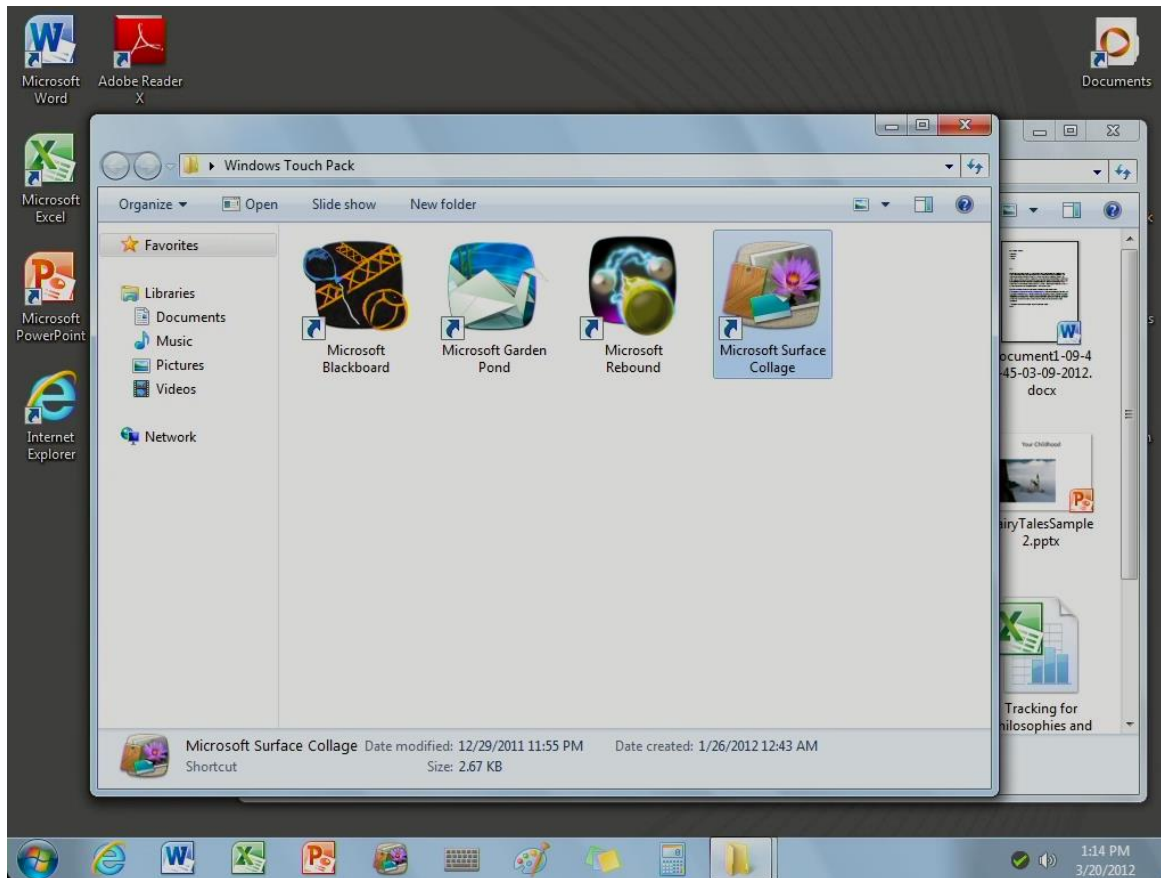
Screenshot: Ink tools and virtual keyboard.

It is somewhat startling to finally see true multitasking on an iPad. Since this is an actual Windows7 desktop users access through the application, the taskbar works just like it does on

any other computer, and it is simple to switch programs simply by touching the icon at the bottom. Multitasking between applications on the iPad is still not possible; if users press the iPad home button as they might do when switching applications, even an immediate return to the same application will require logging in again to return to the Windows7 desktop.

Maneuvering within the Windows programs involves a mix of both PC and iPad functionality. To right-click, users have to touch the screen and hold until a large circle appears. In some uses, the copy and paste functions are grayed out and unavailable. To delete a file, users drag the file out of the Documents folder to the Recycle Bin. To type, users click into a field and a keyboard pops up on the bottom half of the screen. Like other app-based keyboards, this one is highly responsive and sufficient for most purposes. It is possible to pinch-in and pinch-out for zooming purposes, which plays to the strength of the iPad device, but no zooming is possible on the program interfaces (such as menus or tabs). Only the data field can be enlarged.

Included on the OnLive Desktop is a folder labeled Windows Touch Pack, inside of which are several games. Microsoft Blackboard sounds educationally-oriented, but it is merely a somewhat inscrutable physics-puzzle game. Microsoft Garden Pond is a touch game with floating paper cranes. Microsoft Rebound is an advanced ping-pong game. Finally, Microsoft Surface Collage provides a fun means of interacting with photos contained in the Sample Pictures folder. It is possible to upload pictures from a PC via the browser interface and then move them to the Sample Pictures folder. It is usually best to leave files in the Documents folder. It is possible to move files to the desktop, but only files contained in the Documents folder are visible from the browser interface.



Screenshot: Windows Touch Pack.

Educational Benefits

In educational settings, the iPad has yet to realize its initial promise of fundamentally changing the way instructors interact with the room and with students (Parry, 2010; Wieder, 2011). The problem has been that the iPad lacked a way to show truly interactive PowerPoint presentations (Bradley, 2011; Jacobs, 2010). Workarounds included converting the presentations to Keynote, video, PDF, or still images. Other iPad applications can display PowerPoint presentations after an onscreen conversion, usually into proprietary formats. True (and free) PowerPoint applications have proved elusive until now.

OnLive Desktop enables the use of PowerPoint in the iPad, so presenters can now use the tablet directly when using PowerPoint for a live audience. Normally, this requires a VGA adapter so that the iPad can plug into the projector directly. It is true that a computer can project just as easily, but some instructors might prefer to work on presentations using the more mobile tablet.

But that is only half the battle. Using PowerPoint while tethered to the projector is one thing, but a true breakthrough would be the use of the iPad wirelessly. When professors and teachers can leave the lectern to roam the room and still control PowerPoint (adding in the fancy ink and highlighter tools), they will have achieved that elusive promise of tablet computers changing the way we use the technology and how we treat the classroom space. Lecturers could move through the room, engaging students more directly and at closer proximity, while maintaining full control

of the technology on screen. OnLive Desktop provides half the solution—real PowerPoint integration to the iPad at no cost—while the other half has to come from a third party. The simplest solution to streaming an iPad to a projector is to buy the [AppleTV device](#) (\$99) and use the free feature called [AirPlay Mirroring](#). There are no additional or ongoing costs for AppleTV or AirPlay.

Recording audio onto PowerPoint slides is theoretically possible within OnLive Desktop, but the results are silent during playback; presumably what would be needed is to record via microphone at the actual location of the desktop instead of the iPad proxy location. YouTube videos embedded within PowerPoint will not play, due to restrictions placed on web traffic when using the application. Shockwave Flash files that have been uploaded to the documents folder will play, however, which is another first for the iPad. Although double-clicking the .swf file will not open it, dragging the file into a browser will, provided that the user clicks to enable ActiveX content when prompted.

Limitations

As useful as OnLive Desktop is for many functions, it does have limitations, some of which are substantial. It's not possible to create sub-folders in the Documents directory, so once users have uploaded numerous files, the documents may quickly become jumbled. Perhaps confusion can be averted with a rigorous file-naming scheme. We noticed one technical glitch when files were duplicated into a second version with slightly altered filenames, possibly when restoring from a disconnected state.

In addition, users are unable to upload content directly from their iPad into the OnLive Desktop browser; instead, users must upload this content (e.g. photos and videos taken with the iPad) to their Mac or PC and then sync these files with the OnLive Desktop app. For OnLive Files, some file types (such as .exe) are disallowed within the application, while others (in our tests, .mp4 and .m4v) have limited functionality within the app; while they will play independently in the browser, users cannot add them to PowerPoint presentations. Moreover, cloud storage is limited to 2 GB total, with no more than 100 MB per individual file. If users would like more space in the cloud or additional uploading/downloading options (including Dropbox), there are a variety of paid service plans available (including “Plus,” “Pro,” and “Enterprise” plans), which each offer additional storage space, access to a full Flash browser, and customizable features. Unlike some other applications (such as Documents to Go and QuickOffice Pro HD), OnLive Desktop does not require purchase. In addition, other applications (such as Keynote and SlideShark) only allow users to view PowerPoint slides—they do not allow users to actively edit and create PowerPoint presentations on the iPad. When compared to similar applications, OnLive Desktop stands apart because the standard option is powerful and, most importantly, free.

OnLive Desktop's biggest limitation is that it cannot function off-line, since there is no longer a connection to the actual Windows7 desktop. Users with iPads that depend on Wi-Fi will not be able to work on any OnLive documents or files unless they are connected. The application will become inaccessible once removed from a connection. In addition, if users are wirelessly connected, OnLive Desktop requires a network speed of at least 1 megabit per second for

downloads and uploads. The application works best at speeds of 1.5 megabits and above (Mossberg, 2012a).

Plans and Pricing

One of the biggest selling points of OnLive Desktop is that it provides Flash support for the iPad. Previous applications with Flash support have been focused on games ([iSwifter](#)) or were more limited in which Flash-based Web sites could be viewed ([SkyFire](#)). With OnLive Desktop, Shockwave Flash (.swf) files can play with a little effort as described above, but uploaded Flash (.flv) files will not work either by double-clicking or by embedding within an uploaded HTML page. The advertised Flash functionality refers mostly to surfing the Web, but such browsing is not possible with the free plan. Internet Explorer is provided in a prominent way on the desktop for all users, but it will not load any pages whatsoever unless the user has upgraded to the \$4.99/month “Plus” plan. In addition to visiting Flash-capable Web sites, the browser on the “Plus” plan can also access Gmail and Dropbox, increasing the ways files can be moved to and from the iPad.

In the future, there will also be \$9.99/month plans available with 50 GB of cloud storage and collaborative services for “Pro” and “Enterprise” plans. The company does offer enterprise solutions. The OnLive system may prioritize users on the paid plans in rare cases, at which time a user on the free plan will not be able to access OnLive Desktop via the app. In testing thus far, we have found such instances to be not only infrequent, but also short-lived.

For users willing to live without a Flash-capable browser, there is little need to upgrade beyond the free plan. Files can be moved to and from the OnLive Desktop by using the browser-based interface from a PC with minimal effort, and users will realize a true Microsoft Office application that also doubles as a way to control the classroom technology while away from the podium.

Educational Prospects

Learners and teachers alike will welcome OnLive Desktop as the long-desired ability to work with Microsoft Office products natively. Many apps on the market can display Office documents, spreadsheets, and presentations after conversion, but such files either can no longer be edited or must be saved in a proprietary format. With OnLive Desktop, users can revise presentations moments before delivery and easily transfer the file back to a PC afterward.

Faculty who have explored OnLive Desktop also report that the mobility of the iPad creates opportunities for altered and improved workflow. Coffee breaks may more easily become miniature work-sessions, for example, and presentations often become enriched because they can be constructed over longer stretches of time and in stages. It offers some mental comfort to present on the same device one uses to build the PowerPoint, since the document can't get lost and one has assurance that the technology works already. Faculty report that so far their out-of-class workflow has changed more than their classroom use of the iPad, though this may change as more faculty become aware of the possibilities for streaming a PowerPoint presentation from the iPad.

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Bios



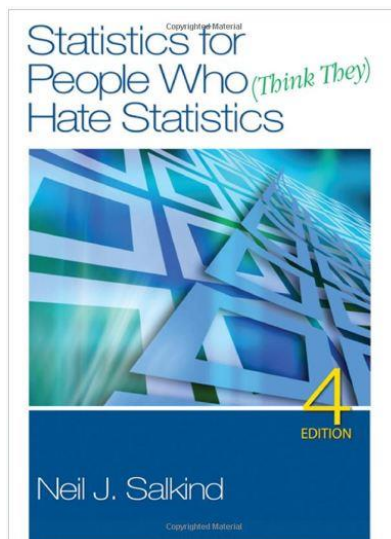
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Review of Neil Salkind’s 4th edition of “Statistics for People Who Think They Hate Statistics” (2011, Sage)

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The book reviewed is an introductory text on descriptive and inferential statistics for students in the social sciences who need to do a research project or who need a basic level of statistical understanding.



The book’s introduction defines statistics as “the science of organizing and analysing information to make the information more easily understood”. The goal of the book is “to provide you with an understanding of these basic tools and how they are used”. The book thus does not aim merely to introduce statistics, but rather to provide readers with an understanding of basic statistical concepts, an understanding which involves both their calculation and their usage. This calls for a higher standard of critical analysis than what would be appropriate for a review of a basic introduction to the field, for “understanding” is not a modest goal. The book “makes no presumptions about what you should know before you start and proceeds in slow, small steps letting you pace yourself.” (p.11). Indeed, the author tries really hard to put students at ease. There are many examples fully worked.

In this review, I will focus on the extent to which the book achieves its goal of having the novice understand the statistical concepts covered. I will consider whether the scope of the book is appropriate to equip its intended audience with the tools to process research data and whether the book explains key statistical concepts better or worse than its major competitors do. Finally, I will consider whether I could recommend this book at all, in its entirety or for some things but not for others.

Aims

There are many introductory statistics books on the market. Any entrant into this market needs to fill a particular niche. This one hopes to fill the niche implied by its name – the niche where people have to take statistics because they are obliged to do so but who do not like the prospect, whether because of innumeracy or other reasons. Because it is aimed at unwilling novices, the book not only has to unpack thoroughly all technical terms and formulae but it also has to explain them in a language plain enough to stop a beginner from becoming frightened, confused

or bored. The writer must have succeeded to some extent in occupying his intended niche; else he would not have achieved four editions so far.

Emphasis and Scope Issues

The main criticism of the book's emphasis is that it has far too much on parametric statistics and far too little on non-parametric statistics. Chi square is dealt with adequately, but the processing of ordinal data and of non-normal distributions is disappointingly thin and could not be used by a student who needs techniques from those areas to process data for their project. These areas are done much better in the classic books by Blalock (1979) and Spiegel (2011), and many students will be dealing with skewed and lumpy data, so they actually need nonparametric more than they need parametric. However, Salkind is not alone in this emphasis on the parametric, unfortunately.

Salkind's concern for strict exactitude in definition is sometimes at the expense of ease of understanding by innumerate students. For instance, "A small "n" represents the sample size for which the mean is being computed. A large "N" would represent the population size. In some books and in some journal articles, no distinction is made between the two." (p. 21). Why does a student at this stage really need that last sentence? Similarly, in contrasting sample statistics' use of roman letters with population parameters' use of Greek assumes readers already know both alphabets (p. 24).

Part 2 on descriptive statistics is good on means and medians but inadequate on skew and kurtosis whose presence can often render parametric techniques quite inappropriate. Other issues of concern include:

- Page 92's Table 5.3: the header "correlation coefficient shopping anyone?" lists five types of correlation coefficients (phi, rank bi-serial, point bi-serial, Spearman and Pearson) and shows the measurement scales applicable to each of the two variables for which each correlation coefficient is most appropriate. This is much too important just to be dropped in without development.
- Appendix E on basic maths: it is good but ought to be a preface rather than an epilogue to the book.
- Statistical software: SPSS is used throughout the book, but the book had earlier raised the expectation of also using Excel and we never hear again about that. Chapter 19's trip through statistical software is clear but why does it omit SAS and STATA when they are so common in social science and business research?
- Chapter 17: this is the one and only chapter that deals with non-parametric tests but does not do so clearly or adequately. It is given four smileys which is too generous, considering that it is not clear which attributes of normality are essential for parametric tests and which are not.

Finally, quite a serious omission in Chapter 14 is the failure to explain the general linear model which is nevertheless heavily introduced (p. 249); similarly the selection of more advanced inferential in chapter 18 has no obvious rationale. It mentions MANOVA, ANCOVA and factor

analysis but makes no mention of PROBIT, LOGIT, discriminant analysis, cluster analysis nor multidimensional scaling, though these are all important in business and social research.

Clarity of explanations

Many paragraphs are accompanied by icons in the margin representing the paragraph's content type (introduced at p. 14). This is a good idea which the author uses well throughout the book. Then we have the smileys representing a difficulty index from 1 to 5. I would have had a 3 point scale and used frowns for hard parts and zero for neutral. This would have made the scale easier to understand and would avoid the spurious precision of a 5 point scale for something as subjective as ease and difficulty. For it is quite hard to gauge relative difficulty for innumerate students and anything rated as hard or very hard by the author may increase rather than decrease a new student's fear of the relevant topic.

Commendable explanations and treatments are many and are, in every case, at least as good as, and sometimes better than, the explanations in most other textbooks. Salkind excels in the following areas: Chapter 4's treatment of pictures, diagrams and charts, mean deviation (p. 40), measurement scales (pp. 103-105), sampling errors (p. 128), null hypotheses (p. 129), chance as explanation of results (p. 130) and research hypotheses (p. 131), the asymptote of normal curves (p. 143), the transition from z scores to probability (pp. 152-153), why type 1 errors affect test design more than type 2 (p. 170), the implication of obtained values being more than critical ones (p. 176), the f test (p. 222), factorial ANOVA design (p. 224), ANOVA's superiority over multiple t tests (p. 232), main effects and interactive effects for 2 way ANOVA (p. 240), how ANOVA spots effects that t tests miss (p. 245), significance versus meaningfulness (p. 260, in contrast to the confusing introduction of the topic on pp. 170-171), regression's line of best fit (p. 271), standard error of the estimate (p. 275), multiple regression and its selection of independent variables (pp. 279-280), chapter 21's ten commandments of data collection, appendix A's guide to SPSS.

Salkind is not quite so clear, however, on several topics, starting with skew which is dealt with much too briefly although clearly enough (p. 27). The treatment of skew is quite a good test of the quality of an introductory statistics book, because it is the moment primarily responsible for partitioning datasets between the normal and the non-parametric and it is quite easy to explain, but rarely done well in the books. Second, when standard deviation is introduced, the book fails to explain why the formula has the content it has (p. 40). There is a very good clear explanation of mean deviation but no mention of why it is hardly ever used (p. 42). It is also hard to understand why the author says (p. 45) that variance will be dealt with later in the book but then it is not; and this omission may magnify its difficulty for some readers-

Further, all of chapter 9 on significance testing is significantly less clearly dealt with than other techniques and needs simplifying for the fifth edition; how to do one tailed tests is not fully enough explained (p. 213, although the much later treatment on p. 258 differentiating one from two tailed tests is in fairness quite clear); degrees of freedom are not well explained in chapter 15. Penultimately, one smiley for chapter 16 on regression is merited, but, for the previous two chapters on ANOVA, it is self-deprecating in a way that may unnecessarily scare the novice, as both chapters are clearer than most of the rest of the book.

Finally, not very user friendly is appendix D which has answers to practice questions. The answers are fine, but the impression is spoilt by the occasional interpolation of the phrase "on your own" in quite a few of the answers without saying it first in the questions within the chapters. The point is that the better the model answers are (and Salkind's are very good indeed), the more frustrating it is to be told some are not given and we have no reason why not.

Comparison with competitors

Gonick and Woollcott (1993) "Cartoon Guide to Statistics" might be the simplest introduction for some students who learn more easily from the visual than from the verbal, but it has not had a new edition for quite some time and has had mixed reviews. It is good on descriptives and display, probability, and Bernoulli trials, but the reader still needs to work, for cartoons do not offer osmosis learning. Salkind compares well with this book.

Spiegel (2011) is well reviewed on Amazon.com; it is long established and very clear text. It is better than Salkind on skew, Poisson and binary distributions, sampling theory and applications and time series analysis, but is not better than Salkind on non-parametrics and more advanced areas like the general linear model. Some reviewers thought some numeracy was a pre-requisite for this book. Weiss's (2010) Introductory Statistics is a full textbook, with many good Amazon.com reviews, and with the same coverage and easier language than Salkind, but it too is weak on non-parametrics and inferential analysis beyond ANOVA.

Wasserman (2003)'s "All of Statistics" is introductory but comprehensive on both inferential and on descriptive, and its language is accessible if not crystal clear. I think it is rather good, but Salkind is easier for the beginner.

Griffiths (2009) "Head First Statistics" looks more novice friendly than the others from a distance, as it is full of puzzles, quizzes, stories and real world examples. It does all the main distributions, probability, and inferentials up to regression and chi square. Some reviewers found it silly, others clear and engaging; it has some spelling errors and wrong answers. It is very good on the meaning and appropriate use of each statistic, but a shade too careless relative to the other books, including relative to Salkind.

Blalock (1979) is a classic text, still easily bought; it is appropriate for the serious research student and has no carelessness in it, but it is, regrettably, too advanced for the novice who is compelled to take a statistics unit in their course, whereas Salkind is not at all advanced and is successful in its targeting the beginner.

Conclusion

Salkind's book is well above average for an introductory statistics textbook and may be the best for its integration of SPSS and its explanation of t tests and ANOVA. It could usefully be followed by a book that builds on what he has already in print and which takes the student from beginner to research capable status. The fifth and subsequent editions will hopefully address the omissions mentioned above. All in all, this book can be recommended as helpful and clear for the beginner.

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Frontiers in Higher Education: A Procedural Model

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Abstract

The paper describes a procedural model implemented at Ohio State University that shares similar content and interaction among international partner classes for a short time, usually 3-5 weeks. The model is flexible and adaptive to any discipline at both the graduate and undergraduate levels and includes expertise from both partnering instructors. Technologies are embedded to integrate a variety of structured opportunities for interaction and to utilize different teaching and learning strategies. There is no exchange of credits or funding, and all instructors are individually responsible for grading their own students, thus allowing subject expertise and peer interaction from around the world at no extra personal cost. The model can be implemented to internationalize an entire curriculum to a broad spectrum of learners world-wide with a significantly reduced carbon footprint, at minimal cost, and in direct response to the needs of higher education.

Keywords: Internationalization, modular design, collaboration, intercultural sharing, curriculum development

Introduction

Instructional technologies and today's techno-communications can enhance the educational focus on the learning/research dimension, but this should go beyond case studies to a more holistic transformation. Caruana (2010) asserts that there is no best practice for internationalization. It is experiential and context specific requiring many uniquely nuanced elements, so it will manifest in different ways depending on the disciplinary perspective. If anchored perspectives from at least two given regions of the world were integrated into the subject content and class activities, courses in every discipline could share and focus on the real world conditions of the consumers/providers (i.e., people and societies of the world). In the process, students would learn how to network and reach across the globe to a variety of different cultures through different subject content, as well as different modes of communication, learning technologies and projects/activities. A highly educated global workforce and more science and engineering scholars would impact the world economy in two very significant ways. First, the acceleration of scientific and technological knowledge would directly impact the economic progress flowing from it, and second, a highly educated global workforce would raise productivity. (Freeman, 2009, p. 399) The outcome is a higher level of world-wide knowledge, competence, readiness, and productivity.

Internationalizing coursework would require students to develop new global competencies. These include mastering the ability to navigate and adapt intercultural attitudes and sensitivities, manage conflict, and relate current affairs and evolving international trends and strategies. Intercultural competency has become an extremely important skill as a result of the cultural diversity manifested in the marketplace. (Spitzberg & Changnon, 2009, p. 337) Developing intercultural competence is also stressed by Paige and Goode (2009) who explain that those who receive such training have more expertise and confidence dealing with cultural issues than those who do not (pp. 333-349). Collaborative coursework can cultivate this broader perspective of both subject content and cultural partners, and thus, better enable students to interact in a global context.

Today, collaborative coursework often utilizes blended formatting, that is both, on-site and as distance learning environments that incorporate both synchronous and asynchronous communications. These blended formats are flexible to varying styles and approaches as well as new information and resources. (Caulfield, 2011, np) For example, many student practice labs interact and respond to industry problems, and medical students often observe live procedures and discuss/respond to them as they happen. These activities are preliminary steps to internships, involve students on joint research projects and disseminate statistics and feedback. Such learning experiences can maximize global synergies by enabling students to collaborate across regions and cultures.

Besides the use of blended learning environments, video conferencing is highly advised for face-to-face spontaneous exchange. This face-to-face exchange has been cited for providing a significant sense of shared humanity that binds together students and teachers. The subtle impact of language usage in tandem with non-verbal behavior, i.e., body gestures, eye contact, and interpersonal etiquette, can be best related through real-time interaction. (Smith, Paige, & Steglitz, 2003, p. 105) This interaction provides an opportunity for students to better understand how a discipline is represented and understood within other cultures. It extends the focus to knowledge created from a different identity and introduces multiple ways to know it. It also shifts the students' frame of reference beyond the theoretical so they can engage in critical debate in their field. (From *Internationalizing the Curriculum Resource Kit*).

Internationally collaborative learning has been in practice at many universities for decades. Surveys conducted at OSU in 2006 and 2007 identified numerous instructors at U.S. institutions who found international partners and redesigned traditional courses to align similar content. However, success was problematic due to content incongruities, approval issues, intermittent and/or dropped connections and numerous other technical issues, including high costs, not to mention aligning time zones and institutional schedules. Grants were often required to purchase compatible equipment for video-conferencing or to cover student fees to share a course management system. Many instructors abandoned the effort because it generated frustration and required more work than they had time for. Their most significant problem was lost class time through technology glitches.

Issues such as these have been observed elsewhere and have led to the conclusion that while international collaboration in teaching and learning may be of interest to enthusiasts and researchers it is not yet "a sustainable mode of education" (Clear, 2008, p. 11). However in line

with previously reported findings (Clear & Kassabova, 2005) the surveys also showed that according to teachers the interaction provided great benefits to their students. Teachers unanimously agreed that interaction enabled everyone to discover something significant through the process; It motivated students, invigorated class discussions and opened new dimensions of awareness and knowledge, and ultimately improved the student learning experience.

Improving the learning experience will affect how students, employers and society view the experience, product and ultimately, the effectiveness of universities and higher education. According to Kim and Zhu (2010), "The need for higher education has become crucial in the age of globalization, as knowledge-based workforces have become an essential ingredient to acquire and maintain a competitive edge in the marketplace." Kim and Zhu (2010, p. 165) Today's technologies, serving as a conduit for higher education, can provide networks for the international integration of education and research and be facilitated to a very broad spectrum of learners world-wide with a reduced carbon footprint, at minimal cost and in direct response to the needs of higher education.

Today's technologies that are vastly more reliable, versatile and cost effective have made a tremendous impact on our lives, both personally and professionally. Demands of higher education to broaden our existing classrooms into new world-wide opportunities have been equally extended. Study abroad, foreign exchange programs, and a diverse faculty base can broaden awareness, but to effectively serve all students we must adapt the subject content and our methods of teaching to gather and exchange information across the international community. This case study from Ohio State University (OSU) offers a single formula that harnesses both institutional and technological synergies for international interaction across the curriculum

Designing an International Collaboration Model

Since OSU's Office of International Affairs (OIA) explores and supports many varied dimensions of internationalization, strategies for collaborative cross-border learning came under its consideration. OIA reviewed the survey information and recommendations, and was interested in exploring a practical values-driven approach evolved from the study to enrich course content. Internationalization occurs when multicultural experiences and perspectives are infused into the teaching, discovery, and engagement of our students, and this new model encouraged more structured and interactive opportunities to facilitate such valuable international learning experiences.

A course development grant was followed by a successful pilot class ("Frontiers in Life Sciences Research: Genomics, Proteomics and Bioethics") coordinated with three institutions in India for five weeks in the spring of 2009 (Simcox, 2009a, b, np). This class shared interactive lectures/discussions, engaged students in group projects and examined case studies that explored ethical issues in the practice of biological research. OIA then provided two years of faculty grants to promote the model utilizing similar course-redesign efforts as those recommended by the [National Center for Academic Transformation](#). NCAT recommends innovative use of technologies and proven methodologies for course redesign such as the modular formatting of content. Modular formatting can be likened to the chapters of a book, thus modular segments can be presented as units of information.

It is difficult to match perfectly aligned classes between universities for an entire semester. There is considerable variance in the subject content and semester alignment, especially if the institutions are in different hemispheres and matching winter courses with summer schedules. Time zones further complicate class scheduling. However, sharing only similar content for a shorter period, perhaps three to five weeks, can facilitate a mutually beneficial learning experience. Mak (2010) clarifies some elemental considerations for multicultural classes in her article and emphasizes that different cultures utilize differing teaching/learning styles. She states that instructors must consider the subject content, course level, class sizes, the proportion of culturally diverse students, and whether it is a theory or practicum session. (p. 370) Attentiveness to issues such as these must be carefully considered.

An International Business Perspectives class (Bus Tec 294T) at OSU's Agricultural Technical Institute (ATI) exemplifies such concerns. This class was coordinated with [Tamil Nadu Agricultural University](#) (TNAU) in India for six weeks. Each university scheduled four lectures/discussions with their own participants followed by one combined lab session to interact with the instructor and students in the other country. Then the class sessions were substituted with international teleconference sessions once a week. The meeting time was 8:00 am at OSU (corresponding to 5:30 pm in India); the sessions lasted between two and three hours with one scheduled break. Students were assigned to group projects, each group consisting of four students with two from each location. Each group developed a realistic import/export plan between their countries. Instruction and interaction was conducted in English. Language issues were addressed by the Indian instructor, Dr. Chinnadurai, and Dr. Kumarappan, one of the OSU instructors originally from India.



Figure 1. Students share insights about the class

All of this planning required the instructors to meet online months earlier to discuss course curriculum and test the technical communication equipment at their respective campuses. Other critical details included aligning comparable course syllabi, reference books, lectures, an international project plan and student group work requirements. The interactive course module would start with an introduction of students and instructors, formation of the teams, identification of import/export products and discussion of the best modes for communication.

The onus is on the instructors to coordinate international business research in their respective campuses. Every week, the students would design a PowerPoint presentation and present it with their team members during the teleconferenced session. The entire class would participate and have an opportunity to comment or provide feedback during each online meeting. Finally, the teams would synthesize their ideas into a feasible business plan. All students would submit their final written project plan to their respective instructor and the groups would present their group plans to the class. The course materials would be maintained and exchanged through the OSU course management system (known as Carmen). Participants from TNAU would become temporary OSU students with guest IDs to provide them access to both Carmen and the OSU library electronic resources. All participants could communicate with OSU librarians through Carmen to find information for their group projects. An OSU-ATI librarian would inform the students about available resources and copyright issues.

Barber (2007) reinforces the importance of creative, experiential learning strategies to engage students, enhance their experiences, and bring about deep learning outcomes (pp. 143-149). Also, Hole and Larsen (2007) define the students as a learning community through which experiential learning is "...integrated in complex practices, and emerges during a fusion of practice experiences, theoretical knowledge and discussions among peer-students and supervisors." The business class provides an excellent opportunity for such experiential learning. The projects simulate an international business partnership that requires students to give and receive feedback across their international communities. Each team creates an import/export plan for an agricultural product and analyzes the domestic supply chains in the U.S. and India. They evaluate and choose a distribution channel (e. g., research regulations) and determine the profitability. Completion of the project requires cross-cultural learning from international peers.

Also of note, Wade, Cameron, Morgan and Williams (2011) found that students in such small group learning communities reported a greater need for personal and supportive relationships with their distance members than with their on-campus members. However, this phenomenon depends on each individual's personality, their level of participation, willingness to engage and interact, and on the time available. (p. 393) This phenomenon may be impacting the business class project teams since each is a small community of learners interacting over a 6 week period through cross-cultural learning. It mimics a realistic situation that agricultural business students may face someday requiring interpersonal relationships at the international level. These learning experiences can sometimes be transformational and can be facilitated in a variety of ways, such as through evolving rational insight and discernment, extra-rational processes that are more psycho-social or ethno-relative in nature, or through small groups that learn collectively. (Wallace, 2012, np) Overall, it is by fostering a talent for synthesizing ideas and creative problem-solving, as well as networking, collaboration and partnerships that students can become multidimensional leaders (Kapur, 2010, pp. 305-334).

OSU participants generally provide ongoing feedback after personal reflection and through group discussions and have cited the interactive projects and class activities as significant factors in the overall success of their classes. Some students expressed a change of focus in their careers and/or a desire to extend their education because of their class experiences. The partnering instructors are best qualified to develop these unique learning activities because they are most aware of the academic needs of both groups of students and are responsible for leveraging the

cultural diversity and subject content between them. The creativity of the technology consultants is equally critical as they must adjust/align the modes and synergies to facilitate effective interaction. However, departmental support, class reserve materials and other pertinent resources should be provided. Associated services and administration are essential for collaborative initiatives to be configured, implemented and managed as seamlessly as possible.

World Class Education by Way of Academic Free-trade

The procedural model is flexible and adaptive to any discipline and includes the expertise from at least the two partnering instructors, though experts from business, industry and professional organizations can be included. Most importantly, it allows students to interact directly with international peers in the same area of study. For instance, Sub-Saharan African students could study with a class from Israel and share cutting edge techniques in irrigation and crop science. American students could study off-shore oil drilling with a Brazilian class. Colombian students could learn about farm fisheries with China where the industry is one of the most advanced in the world. They could discuss unique problems at their different locations and share information to develop and advance methods.

OSU's exploration thus far indicates that this procedural model has the potential to facilitate an exchange of world knowledge and political/economical/cultural awareness in any subject. Currently at OSU, a Dance in Popular Cultures class, an Adolescent Psychology class and a Women's Studies class are considering multiple partners either simultaneously or in rotation. Even with the additional challenges, these traditional classes require only minor variations and minimal costs to adapt. By sharing only similar segments instead of entire courses they have eliminated many hours of work coordinating content and semesters that simply were not aligned with one another.



Figure 2. Dr. Sun introduces his Ohio State University, U.S., students to their partner class at DMU, China

Partners are chosen to complement each other's teaching and research strengths and must agree upon the course content they would share and the type of class activities/projects included. If the initial partnership works well it could be extended to enhance mutual interests. For example, in 2010, an upper-level undergraduate class entitled, "Climate Change and Human Health," was coordinated with [Dalian Medical University](#) (DMU) in China. The impact of this class was transformational in that it inspired students from both institutions to change their majors and focus on study in public health.

Two OSU students approached their instructor stating that they planned to apply for graduate study in the OSU College of Public Health. Three DMU students also wanted to pursue graduate study at OSU (two in the Division of Environmental Health Sciences and one in the Division of Biostatistics), and several others expressed a desire to explore similar possibilities. A teaching assistant from DMU who participated in that first shared class is currently working in a lab for Dr. Sun, the OSU instructor, and is applying for the PhD program at OSU.



Figure 3. Dr. Sun initiates a discussion. DMU's class can be seen on the screen at the right

This shared course has continued and is currently coordinating with four Chinese institutions simultaneously. The president of DMU recommended that this course serve as a model to develop similar courses and others are under consideration. The [DMU College of Public Health](#), was declared a "Sister College" to the OSU College. DMU is a nationally recognized comprehensive university with Bachelor, Master, and PhD programs and includes fourteen colleges, four directly affiliated organizations and five affiliated hospitals; it serves as a strong partner institution to OSU's programs.

A delegation from DMU visited the OSU campus and a Memorandum of Understanding (MOU) for collaborative projects was established. The two institutions jointly applied for research grants to support the programs in Public Health at DMU which has resulted in the development of the Sino-US Environmental Research Center at DMU. Also being discussed is a dual degree

program between the Bachelor and Master programs, a dual graduate training/research program, and a visiting/exchange faculty and student scholar program.

A visiting scholar from DMU has since conducted research at OSU on the effects of air pollution on diabetes and obesity. Another OSU project funded by the Diabetes Action Research and Education Foundation (USA) was subcontracted to Prof. Min Chen at DMU for a collaborative project, and an OSU visiting scholar is currently extending his visit at DMU where he not only teaches English, but is testing the essentiality of *M. smegmatis* *murA* gene (MSMEG_4932) as the first step towards studying the disease mechanism at the molecular level. DMU is currently planning multiple scholarships for OSU graduate students, especially those in the College of Public Health Master's program to study, conduct research, or gain scientific experience at DMU. Other shared courses have inspired similar interests among students, faculty and departments. Basically, these classes can serve as a portal through which other institutional objectives can be developed and expanded.

Though OSU coordinates projects and classes all over the world, this project, which involves about a dozen classes (See Appendix A for subject areas and partner institutions), originally coordinated with the OSU "gateway" countries of India, Brazil and China. However, other countries are now being included. There is no exchange of credits or funding. The instructors are responsible for grading their own students. Most importantly, the students acquire subject expertise from around the world at no extra personal cost. It does require a coordinator to locate a similar international class with a cooperating instructor and administrative approval from both institutions. Some partnerships require a formal MOU. Campus information technology (IT) services determine technological compatibility and tools for collaboration, but there are many low-cost options available. Other institutional services are needed to schedule video conferencing, arrange access to class resources and the same course management system, and to address any unexpected issues created by such unique situations. With appropriate services in place the follow-through can be timely, effective and without excess burden to faculty. OSU's instructors have been enthusiastic, so the current collaborative course modules will be ongoing. However, proving its effectiveness is only the beginning. Internationalizing the entire curriculum is another issue.

Concluding Remarks

Today, internationalizing curricula is often viewed as a goal to improve the quality of higher education and a key tool in bringing us closer to internationally recognized diplomas. Internationalizing coursework could also facilitate developing countries in becoming international players in the global sector of higher education. Shared coursework could contribute to their wealth through technology transfer and knowledge accumulation, as well as raise the economic and social status of their graduates. Some developing countries might possibly evolve into knowledge-centers or cyber-hubs even if only at certificate levels or in specialized fields. Internationalizing higher education could potentially resolve brain-drain issues too, but this is all speculative. The most significant and immediate need for internationalizing curricula is to inspire and share new knowledge and research among the global community of learners, and to better prepare them for jobs in a global economy.

However, this requirement of including international cooperation as the social norm in classrooms brings new challenges to higher education. The learning environment must be adjusted to share classrooms with diverse cultures and institutions. This will require more wired classrooms with cutting-edge technologies. Inter-class discussions, brain-storming lab sessions, collaborative projects, papers, and other shared activities must be uniquely designed to best address the numerous variables such as class size, language differences, diverse resources and so forth. This may require more IT assistants and resource specialists/librarians. The length of the collaborative segment is determined by the partnering instructors, and should be integrated into traditional classes as modular, short-term enhancements without imposing too greatly on the instructors' time.

Class scheduling would also be impacted. Time zone differences could make scheduling real-time interaction difficult. Since the collaborative modules only impact a short period of time, adjustments may be managed through unorthodox scheduling of lab sessions or class meeting times. At OSU it has proven to be easier than expected. Creative scheduling could place synchronous lab sessions in the evenings or weekends for the collaborative segment. For classes addressing a 10+ hour time difference, sessions are often scheduled from 8-10 am/6-10 pm. Scheduling wired classrooms to accommodate as many different class segments as possible in each department may resolve some problems. Traditional classrooms could also be adapted by mounting the necessary equipment to a mobile cart for easy transport. Institutional scheduling constraints determine the choices available, and of course, smaller groups are generally easier to manage. Attention to detail is essential for the collaboration to be most effective but the end result is an inexpensive and effective way to internationalize a curriculum. This type of interaction is not ideal for every class (group piano, for instance), but every department offers some coursework that could benefit from it.

Designing a few internationally shared classes and incorporating them into the curriculum has been done at numerous institutions, but creating a flexible and effective institutional process to internationalize a significant portion of the curriculum is a tremendous challenge. It would require the synergistic coordination of numerous processes, departments, programs, and goals. Success would be predicated on the investment.

Internationalizing curricula would require instructors and university systems to continuously explore new tools, services, and methodologies. Without full commitment, integration could fall short. For example, many OSU instructors generating large funds through grant work and research already manage demanding work-loads and may not choose to participate, and junior faculty may not be advised to develop international partnerships if it is not required for promotion and tenure. How many classes – student learning experiences – could this impact? Universities are complex entities, and there are many ways in which integration could impact other programs and goals. Surviving the highly competitive environment of higher education could be problematic in ways too complicated to predict.

Also, this model is just one formula to share world knowledge. Universities must forge a variety of ways to gather and exchange global information. Ultimately, changing the learning experience will change the effectiveness of higher education. It will evolve as ongoing creative exploration that integrates resources and adaptive methodologies through cutting-edge technologies, and it

will require judicious input and evaluation, as well as critical support from the governing bodies that ultimately control the building blocks. Technology is providing the tools, but they must be implemented to yield the greatest benefits. Higher education must effectively gather, exchange and cultivate information and the methods of education and research to maximize the synergies among programs around the world. This will empower students to work and function in our ever-expanding world of knowledge, which is higher education's new world frontier.

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Appendix A.

OSU's collaborative class instructors, subject areas and partner institutions.

This is not a comprehensive list of internationally collaborative coursework at OSU; only work related to or evolved from my research is included.

Dr. Larry Brown, Agricultural Engineering: Coordinated with the University of Agricultural Sciences, Raichur, Karnataka, India

Dr. Wondwossen Gebreyes, Veterinary Medicine: Coordinated with the Universidade Federal de Goias, Goias, Brazil

Carolina Gill, Industrial, Interior and Visual Communication Design: Coordinated with Northumbria University, Newcastle, UK

Dr. Venkat Gopalan, Biochemistry, Dr. Amanda Simcox, Molecular Genetics, Dr. Daniel Farrell, Philosophy. : Coordinated with Anna University, Chennai, India, the Institute of Life Sciences, Hyderabad, India, and Osmania University, Hyderabad, India

Dr. Kazimierz Slomczynski, Sociology: Coordinated with Renmin University, Beijing, China

Dr. Subbu Kumarappan and Kimberly Hostetler, Arts, Science and Business: Coordinated with Tamil Nadu Agricultural University, Coimbatore, India

Dr. Brian Lower, School of Environmental and Natural Resources: Coordinated with the Universidade Federal de Pernambuco, Recife, Brazil

Dr. Rajiv Ramnath, Computer Science Engineering: Coordinated with the Indian Institute of Technology Bombay, Mumbai, India

Dr. Judy Ridgway, Biology: Coordinated with Osmania University, Hyderabad, India, and Prudence International School, Pune Area, India

Dr. Tracey Stuckey-Mickell, Educational Policy and Leadership: Coordinated with the University of Puerto Rico, Mayaguez, Puerto Rico

Dr. Qinghua Sun, Environmental Health Science: Coordinated with Dalian Medical University, Dalian, Liaoning, China

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Bio



[Ruth Sesco](#) is a program coordinator in the [Ohio State University Libraries](#) (OSUL). She started researching international collaborative coursework in 2006, and her learning process included surveys from instructors who had taught these courses. In 2007 she designed a procedural model for sharing segmented modules of interactive coursework with international partner institutions and piloted it. Later Ruth assisted in developing the [Gateway Interactive Seed Module Grant Program](#) that was modeled on her design and facilitated the conversion of selected course content segments into interactive learning experiences at the global level. Ruth served as coordinator of the grant program and assisted instructors in developing their interactive classes. Ruth is also an adjunct faculty member in the Department of Humanities at [Columbus State Community College](#) in Columbus, Ohio. She can be reached at sesco.3@osu.edu or rsesco@csc.edu

Immersive Learning in Preservice Teacher Education: Using Virtual Worlds

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Abstract

The purpose of this project was to use virtual world technology in a fully online course to assist preservice teachers in examining their stated and implied beliefs, attitudes, and expectations about social roles related to gender. Second Life was explored as a viable means to enhance interactivity and engagement in an asynchronous entirely online class. Data was generated by a social roles questionnaire, a perception survey, journal entries and written final examinations. Results showed that students' initially held beliefs about social roles as determined by the questionnaire did not significantly change; however, data generated from journals and final exam indicated that experiences exploring gender and social roles in a virtual environment were powerful and transformative, leading to new insights into gender roles and how these roles impact our beliefs about ourselves and others and how teachers and students are impacted by these beliefs. Preservice teachers surveyed indicated agreement with the idea that Second Life makes online coursework more interactive.

Key Words: Virtual learning, gender, social roles, teacher beliefs, second life, teacher preparation, online learning.

INTRODUCTION

Professors of all disciplines can impact student learning by varying the way in which they engage students in knowledge sharing and creation. Online education technologies have become an important means to provide a more varied and differentiated curriculum, especially in higher education settings. Not only do online technologies provide an alternative or supplement to face-to-face lecture, but they also provide a variety of ways for students to interact with the content of the curriculum as well as the professor. Through technology experiences, especially when social media is employed, students become more actively engaged in their own learning when provided the opportunity to collaboratively work with their peers in constructing information (Norton & Sprague, 2001). Many universities offer courses through an online learning management system such as Blackboard Vista; Discussions, emailing, virtual meetings, instant messaging and a variety of other functions allow for students to interact with each other and with the professor; however, with the advent and development of virtual world technology for use in education, immersive education within these virtual worlds offer an alternative education experience.

THEORETICAL BACKGROUND

There is emerging evidence that virtual world technologies supplement and provide the online education experience by providing opportunities for meaningful social interaction, a constructivist element that can improve student learning during online instruction. When students meet together in virtual settings where they can “see” each other via avatars and interact in a virtual world a sense of belonging and an embodied social presence is created (Edirisingha et al., 2009; Holmberg & Huvila, 2008; Omale, Hung, Luetkehans, & Cooke-Plagwitz, 2009; Salmon, 2009; Warburton, 2009).

How Do Virtual Worlds Enrich Learning?

Immersive or virtual world learning provides students a multimodality experience. These technologies are 3D Internet-based simulation environments in which users can play games, they are not games (Dawley, 2009). The virtual learning environment offers the opportunity for students to do what might otherwise be impractical or impossible in the real world (Twining, 2009). Students can communicate with each other while walking, running, swimming, flying through environments as varied as coral reefs, Antarctic ice caps, volcanoes, or they can visit museums, art galleries, and classrooms that are virtual replicas of the real-world locations. Users can build buildings, cars, upload pictures and watch movies together.

Web-based applications have facilitated the use of virtual worlds in learning, allowing the development of a range of teaching tools such as document and file sharing, holding meetings, conferences, and class lectures and seminars. In particular, virtual worlds have been studied as environments in which to instruct using problem-based and project-based education methodologies (Mayrath, Sanchez, Traphagan, Heikes, & Trivedi, 2007). Virtual environments appear to provide opportunities for situated learning, contextualized and supported by communities of practice which can provide powerful experiences that engage and inspire education that goes beyond the traditional classroom (Lave & Wenger, 1991; Lave, 1996; Wenger, 1998).

Research on the use of virtual world learning has shown that learners are motivated to engage in the learning events because of the life-like avatars and the interactivity with digital mentors and role-playing actors within world (Veletsianos, 2008; 2009). Ang & Wang, (2006) studied students using virtual learning environments for science education. They observed notable improvements in engagement and in attendance. Scores on science exams were reported to have improved.

Questions remain however, as to how best to utilize the technology available and study is needed to identify the strengths of learning in virtual environments (Prasolova-Forland, et al., 2006). Although virtual world technology has generated a great deal of interest among educators interested in using educational technology, the field is still in its infancy and little empirical evidence is available about its use as an effective instructional tool (Edirisingha, Nie, Pluciennik, & Young, 2009; Jarmon, Traphagan, Mayrath, & Trivedi, 2009; Mayrath, Sanchez, Traphagan, Heikes, & Trivedi, 2007; Warburton, 2009).

Gender, Social Roles, and Teacher Preparation

This project sought to create experiences for preservice teachers in a teacher preparation program that would provoke insight into their thoughts, feelings, and unexamined assumptions if not misunderstandings they had about gender roles and the complexities of gendered experiences. Teachers' beliefs about gender and social roles are often entrenched if not unreflectively established by the time they enter a teaching program. Yet, teacher beliefs and perceptions are the closest predictors of future behavior and, importantly, influence teachers' actions, perceptions, and treatment of children which ultimately impact student performance (Pajares, 1993).

Believing that women and men are fundamentally different and that they are specifically suited for roles in society based upon their gender leads to differential treatment and expectations especially of boys and girls in school. In fact, contemporary research suggests that fixed-gender /sex differences in social behavior do not exist (DeFrancisco & Palczewski, 2007). That is, knowledge of an individual's sex does not predict the individual's behavior (Aries, 2006). Patterns of interaction have been studied; for example, forms of politeness, topic initiation, pauses, interruption, inquiry, amount of talk, and no consistent differences have been found (DeFrancisco & Palczewski, 2007).

In fact, individual differences such as race, ethnicity, language, socio-economic differences, social context, and personality are more a predictor of behavior (Gollnick & Chin, 2009). Still, teachers treat children differently in the classroom and have different expectations of them based upon their sex. Interacting in a virtual world where students could experiment with and experience different gendered behaviors and social roles promised to offer a learning adventure that might challenge personal beliefs about the nature and character of gender and social roles.

Kumishiro (2000) in his theory on anti-oppressive education describes marginalized groups as students of color, students from under-or unemployed families, female, male but not stereotypically "masculine," and students who are perceived to be gay, lesbian, bisexual, transgender, and intersex. Would experiencing the world as "the other" impact these teacher preparation students' understanding of and empathy for children who get "othered" or marginalized at school and in classrooms? How would preservice teachers feel if they experienced what others experience? Would they be less inclined to dismiss or embrace differences or similarities? How would a male student teacher experience the world as a woman? How would a female student teacher experience the world as a man? How would each experience the world as someone whose gender is ambiguous? How could a virtual environment offer a world in which preservice teachers could explore these other identities?

The Purpose of the Project and Study

The purpose of the project and study was to determine the extent to which Second Life, a virtual world, could be used as a viable means to enhance interactivity and provide a transformative experience in an all online class and to assist preservice teacher candidates in the successful in examining their stated and implied beliefs, attitudes, and expectations about social roles related to gender. There were three parts to this small university grant funded project. Part I consisted of

purchasing property in Second Life for university use, building the virtual environment for conducting lessons, and conducting the study. Part II consisted of developing and implementing lessons for a prerequisite course to the university teacher education program that would take place in Second Life within the context of a fully online course. Part III consisted of examining the efficacy of the lessons that took place in Second Life and explored the students' perceptions of Second Life as a viable tool for learning in an online course.

What is Second Life?

The virtual world used in this study was Second Life made by Linden Lab (<http://lindenlab.com/>). Second Life (SL) is a computer-based, simulated multi-media virtual world environment that users inhabit, living, traveling, and interacting with other users representing themselves to others in the form of avatars (Mansfield, 2008; Dawley, 2008). The user selects an initial entry avatar, selects a name, and then, when entering the virtual environment or when going "in-world," can change body type, color, gender, race, weight, height, race and clothing. Second Life also maintains a virtual economy based upon the Linden dollar which is the in-world unit of trade. "Lifers" exchange US dollars for Linden dollars to spend buying and selling in-world. While the emphasis is primarily socializing with others, schools, universities, hospitals, and companies use Second Life as a virtual location for teaching and learning, networking, and holding virtual conferences. Universities such as East Carolina University (Hodge & Collins, 2009) and Ohio University of Athens (Jennings, 2008) have constructed virtual models of their real world campuses in SL, in addition to private universities such as Harvard and Stanford University.

METHOD

Participants

The participants who volunteered in this study (n=15), seven males and eight females, were a subset of 77 students enrolled in two sections of a required course for preservice teachers. The context of this study was a required course in the teacher preparation program in a medium-sized rural, state university. All students were required to complete 10 modules which focused upon topics such as race, language, socio-economic status, religion, exceptionality, age, and gender. The study took place in the module on gender and social roles. Second Life was used as an alternative means to meet the requirements of the module. For the gender and social roles module, students, could volunteer to complete the module using Second Life with readings, posting, and video or complete the module with readings, posting, and video alone. At the end of the semester, they also chose between two final course exams, a school study or a gender study in Second Life.

Data source

The purpose of this study was to assist preservice teacher candidates in the successful in examining their stated and implied beliefs, attitudes, and expectations about social roles related to gender and to explore the extent to which Second Life could be used enhance interactivity and transformative experience in the all online class. Quantitative and qualitative data from three

primary sources were generated to conduct this assignment evaluation. Two sources of data were designed to measure student learning outcomes and one source measured student perceptions Second Life as an effective virtual learning environment.

Measuring student learning outcomes

The targeted learning objective of the course was the following: Candidates will be able to systematically examine their stated and implied beliefs, attitudes and expectations about diversity (race, ethnicity, language, culture, class, religion, gender, and sexual orientation).

1. The Social Roles Questionnaire (Baber & Tucker, 2006) (see Appendix A) was given to students to measure student teacher's attitudes toward gender roles. This data source consisted of a 14-item questionnaire in a Likert-type format (1 strongly disagree, 5 strongly agree). These questions are designed to assess the preservice teacher candidates' attitudes toward gender (gender-linked vs. gender-transcendent).
2. Students wrote a final paper and kept a journal describing their experiences in Second Life as both a man and a woman. In the paper, students were required to reflect upon the following: Part I: The Second Life Experience; Part II: Gender and Social Roles Influence on Students; Part III: Creating An Equitable Environment. Data was analyzed from these sources to determine the impact of assignment of student's attitudes toward gender roles.

Measuring student perception of virtual world learning

Student perceptions of Second Life as viable means to improve learning in an online class were measured by a likert-style survey (5 strongly agree, 1 strongly disagree). Three areas were addressed by the questions: Effectiveness, advantages, and usefulness.

A Student Perception Survey of Second Life (see Table 2) was given to examine students' perceptions of Second Life as a viable means to enhance interactivity in a 100% online class.

Procedure

The Social Roles Questionnaire was given to all students before beginning the Gender and Social Roles module. Then, they took the survey again at the end of the course after they had completed their final papers. Pre and post means for *Gender Linked* and *Gender Transcendent* social role attitudes were generated compared with the intent to compare the pre and post data within subjects who participated in the Second Life project and to compare them with the students who did not participate in the Second Life project but just participated in the Gender and Social Roles Module.

Journal entries and the results of a final assignment were collected and analyzed to discover themes related to changing perceptions about gender and social roles. Students were also given a perception survey to examine students' perception of Second Life as a viable tool for learning in an online course.

RESULTS

Social Roles Questionnaire

The chart (Figure 1) below summarizes pre and post-test data with respect to student attitudes toward gender roles for men and women, children, and mothers and fathers as gathered from the Social Roles Questionnaire (Baber & Tucker, 2006). Items represent either *Gender Transcendent* attitudes or *Gender Linked* attitudes. *Gender Transcendent* items seek to document students' belief that gender role prescriptions although acknowledged are irrelevant when prescribing social roles and responsibilities related to work, child rearing, occupations. For example, "The freedom that children are given should be determined by their age and maturity level and not by their sex" or "Tasks around the house should not be assigned by sex." *Gender-Linked* items seek to determine students' attitudes that social roles are fixed and gender specific, or linked. For example, "Men are more sexual than women" or "Some types of work are just not appropriate for women."

Pre-tests were given at the beginning of the semester and post-tests at the end. In general, it was predicted that these scores would increase from pre to post-test. All of the students in the online course which was the focus of this study completed the required module designed to address gender and social roles; however, the critical issue was whether or not there was a difference between the student who participated in the Second Life (virtual world learning) assignment that focused upon gender and the students who did not participate in this assignment.

An independent t-test was computed to determine whether the differences are statistically significant in general between student attitudes before they engaged in the gender and social roles module and after completing the module (whether or not it was completed traditionally or in Second Life). The t-test comparing pre- and post-test scores was not significant ($t = -495.78$, $df = 77$, $p < .001$). Student attitudes toward gender and social roles regarding gender transcendent and gender linked did not show a significant change in the quantitative results. However, the qualitative data generated from the journal responses showed insight and transformation that numerical data was not able to show.

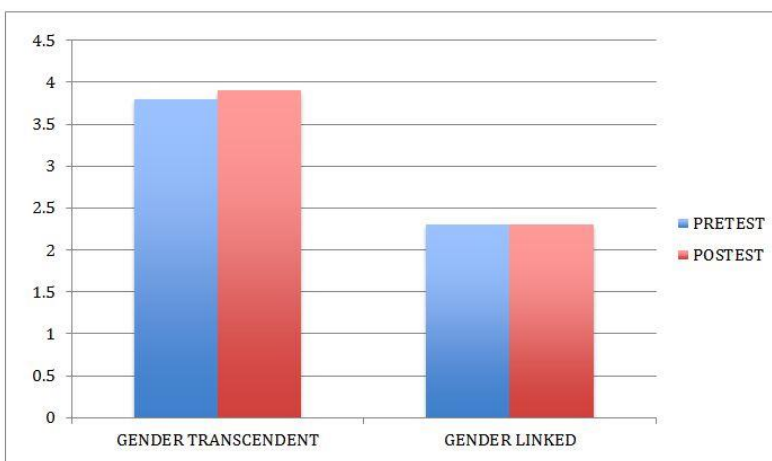


Figure 1. A Comparison of Means: Pre and Post Survey of Social Roles Related to Gender-Linked Beliefs and Gender Transcendent Beliefs. (5=Strongly Agree, 1= Strongly Disagree)

Journal and Final Exam

Although the questionnaire results revealed preservice teachers has not changed their attitudes significantly, their journals revealed significant experiences that challenged their personal beliefs about themselves and others. They were challenged by experiences that stimulated insight that would otherwise have been challenging if not unsafe in the real world. Data generated from the final reports and journal entries that students submitted were analyzed based on a process outlined by Creswell (2002) for analyzing and interpreting qualitative data. Data analysis consisted of the following three-phase process: developing themes from the data; defining themes based on the findings; and connecting and interrelating themes. Journal responses and all of the responses for each part the assignment and of the final paper were read and analyzed. There were three parts of the assignment: Part I: Student Experience; Part II: Reflections upon Gender Roles; and Part III: Creating an Equitable Environment.

Part I Student experience

Part I of the final required students to reflect upon their experience as a woman or a man. That is, they were required to enter and interact in Second Life, first as a gender-like avatar and then as a gender-different avatar. It was up to the student to decide what qualified as “gender-like.” They were instructed to pick an avatar whose gender most closely matched the gender they felt matched who they were. Prompting questions for journaling were: How did it feel to be interacting with others as woman avatar. How did if feel as a man? What are you thinking about? How do you experience your “body?” How do you like your body, your looks, your hair, your shape, your style? Do you notice what you are thinking about other people’s body, hair, behavior, style, etc.? Do you feel you need to do anything differently? Were you treated differently? Did you move, talk, interact, or approach others differently? Were you treated differently? What did you think about not revealing that inside you were different from how you were presenting yourself? The following themes emerged: Appearance, Deception (Hiding), Freedom.

Appearance

A “Just Like Me” theme emerged from the female participants, but a more detached approach was taken from the male participants. Female students reported feeling preoccupied with how their appearance reflected upon them and how they would be treated in Second Life or judged. Overall, however, when participants were creating or adjusting their appearance as female avatars (whether male or female in real life), they spent more time, effort, and attention to creating “a look” they thought was either “just like” who they are in real life (RL) or “attractive, eye-catching, beautiful, not trashy.”

Men seemed less concerned about creating an avatar that reflected who they were in RL; in fact, they were more like to experiment with their looks, creating an avatar with different race, age, and build, wearing hairstyles and clothing that they would not likely wear in RL. Characteristic of women’s responses were the following:

“I first chose to create an avatar that resembled my actual appearance, short, white and blonde.” (female).

“As a female I felt Second life was stressful. Second life was stressful because I never satisfied with my looks. I tried to make my avatar look like me in real life and it was a difficult task.” (female).

One student noted that she felt freer to experiment with her Male Avatar’s looks but did not take risks with her female avatar as she seemed to be more attached to this avatar. She says, “I found that I liked to play with my male avatar’s features or clothing, more than I wanted to change my female avatar. I think this could be because my female avatar was supposed to represent me; I did not want to change her when I got her features just about right.” (female)

“Being a female in sl poses many different questions and “problems” for me as a male. What should I wear, how should I look, what shall I say and how shall I say it...Of course, being heterosexual and being very much attracted to beautiful women, I wanted a beautiful, eye catching female avatar.” (male).

“As a male, I didn’t really care how I looked. Ginger was a different story. I made her to look like one of my first girlfriends, and subsequently best friend for many years.” (male).

“The first thing I enjoyed about being a male avatar was that it was so much easier to create one and even more importantly to dress one, anything you put on it looked good on it.” (female).

“When I was a woman in SL, the gender role schema I’ve developed is that the men should be the ones to come initiate contact with me, particularly in the places I spent most of my time (bars, clubs). When I was dressed in normal attire I generally felt fine, but when I dressed more risqué, I felt that I was being judged for what I was wearing and that men just wanted me in a sexual manner. I felt that I was going out just to get noticed, which was indeed the case. As a man I felt a little bit more normal even though I made my avatar vastly different from myself, or who I would want to be if I had my preference in SL.” (male).

Deception

Overall, students reported feeling “deceptive” in “hiding” their real selves when they were interacting with others as the other gendered avatar. The following are characteristic responses:

“It was like I was tricking the girls into believing I was someone I wasn’t. Even though I don’t think they were interested in us in that way I found it hard to talk to them normally without consciously thinking of myself as a female. I can’t imagine if I had to do that every day, day in and day out, just to feel accepted. I would probably go crazy and at the least slip into a form of depression” (female).

“I felt that I was required to act differently when I was using my female avatar versus my male avatar. This was mostly due to the fact I was, in essence, tricking people into making them think I was something I wasn’t. Kind of hypocritical because my male avatar is a different race and

size than myself, thus also leading people to think I am something vastly different than what I am in real life” (male).

Freedom (safety, boundaries and approachability, movement)

Another typical response reflected students gendered experiences related to feelings of safety, personal boundaries, and freedom to have a say regarding who they want to be, how they want to look, and who they want to approach or be approached by. Characteristic responses were the following:

“I felt the need to be perfect before I could even go anywhere but as a man I was fine with the body I had. I think that directly correlates to societal stigmas that women must look a certain way, whereas for men that concept is not as prevalent. Women, responsible—Man, less responsible. As my female avatar, I did not really notice other people’s appearances or clothes. I think in my female state I was more so concerned about getting my schoolwork done rather than frolicking around. However as my male avatar I found myself looking a lot closer at clothes and other people. I felt more comfortable as a male approaching other people than I did as a female. I was also approached more often as a male than a female avatar.” (female).

“I was concerned someone would think I would dress or act like that in real life. I also thought if I had a wholesome outfit I would be more approachable. I didn’t want to give wrong impression (tattoos, short skirt)” (female).

“As a male avatar I felt I could go anywhere. I visited random locations, simply because I felt more free.” (female)

A female student had an interesting freedom experience at the Holocaust museum. She describes her feelings about the museum when she prepares to go and enters:

“Today I visited the Holocaust Museum. I am Jewish and I felt that since Passover just ended it was appropriate for me to visit the museum. I went as my own gender. I changed my clothes into more formal wear before I went. I also cut my hair so it was more appropriate looking. At first I thought this seemed silly because no one truly would see me and I was just an avatar. However, I realized that as a woman I could not go into such an important place looking shabby. When I entered I was incredibly curious. I came to a place of pictures and memorials. I began to read different memorials and felt happy that I had dressed up my avatar. There were two other people in the area but as I approached them it was clear they did not want to interact. I still do not know if I am ready to talk to anyone.”

Then, she decides to compare her feelings as a man:

“I was curious at this point what it would feel like to be a man in this situation. I went into my appearance menu and changed my gender. I instantly felt new. I felt less emotional and less scared to talk to people. I guess my view of gender is that men are more powerful and have less to be concerned about. When I was exploring this museum as a woman I felt overwhelmed and depressed. I read almost every memorial. However, as a man I felt more empowered. I did not

feel the need to stop and read everything I searched over the museum in more of a broad sense. I went into fly mode and cruised around. As a man I felt freer almost as if I was not placed into a mold. I stopped to think about how silly this was. It was just an avatar. Nothing had really changed but my hair became shorter. Why did I feel so different?" (female)

All students reported that as females they were approached more often than when they were males:

"As a male avatar I feel I had more fun and freedom. I chose a male avatar that was attractive to me and went with it. I did not fuss about my/his looks at all." (female).

"As a female avatar, I was approached more often for conversation and on a couple of instances I was asked for friendship by strangers without even talking to them." (female)."

Although female students reported being approached by strangers regularly without their permission, none of them reported feeling that it was out of the ordinary nor did they report feeling like prey; however, all of the males were approached without permission and reported feeling afraid (logging off immediately), surprised, or generally uncomfortable with this social phenomenon that happens regularly for women. A typical response from a male was the following:

"I'm a male in real life and when I first started to travel as a female avatar in Second Life it made me feel uncomfortable. An example would be the time when I went to the Midnight Blues Club. At the club two male avatars approached my female avatar and started talking to me. The two same guys came back to me and tried to IM me again. At that point I just quit and logout of Second Life. The environment and social atmosphere at this club got me uncomfortable plus I'm not use to having guys coming up to me in real life or Second Life and trying to hit on me. That incident made me realized that I wasn't comfortable being a female in Second Life." (male).

There was no evidence in his report that the men approaching him were "trying to hit" on him; however, as a female, he seemed to feel more vulnerable. So much so that he logged off. Another male student had a similar experience. He too logged off in fear or discomfort rather than just informing the strangers that he was not interested in talking with them. For example, RH (male) reports while being female:

"While I was looking at the "secret hideaway at the Holocaust Museum", and listening to the old woman describe what it was like to live for years in hiding as a child, an blond male avatar walked up to me. I received an IM from him asking "A/S/L". I paused for a second. Why was he asking my age, sex and location in a museum? I figured it was worth the experiment though. "19, female, 20 miles north of L.A. U?" I responded. "21, males. I'm in San Diego, yet how about I drive up there and by you some whine?" The English major in me really wanted to correct him on his many errors, but instead I just said "Sorry, I'm just here to learn about the Holocaust" and logged off. I was stunned. Apparently I was successful at being a female. So much so a stranger was soliciting me in a museum- A museum about genocide. I found myself actually disturbed by this experience. For the rest of my journeys as Ginger I found myself vastly uncomfortable as a woman." (male).

Part II Reflections upon gender roles

Part II of the final required students to reflect upon gender and social roles influence on students in schools. Prompting questions were: How do social roles and expectations impact how we arrange learning experiences for children. How do these roles and expectations impact how children socialize with each other and how they treat each other? How do you think children feel when they have to hide who they are or hide what they really want to say and do based upon a role they believe they must play? If being gay is not okay, how does that feeling of hiding one's real self-impact a student day-to-day? Do males who like to sew feel they have to hide this? How were your attitudes and beliefs about yourself and others illuminated? The following theme emerged: Socialization and Stereotyping.

Socialization and Stereotyping

Students noted that gender is a socialization process and that stereotyping children has a negative impact. These observations were noted in the textbook chapter on gender and social roles also. Students were noting that their experiences in Second Life (general socializing, hiding gender identity, appearance adjusting) impacted their sensitivity toward children who are interested in atypical gender roles, interests, or have an atypical appearance. Clearly, they were empathizing with the feeling of being an outsider or feeling different or "other." The following is a characteristic statement:

"I would imagine that most students who do not fit into the specific gender roles and try to hide it have a horrible time emotionally, which would, more than likely, make its way into the classroom and affect their schoolwork." (male).

Another student (female) reported:

"I have a friend who experienced gender stereotyping. He has been dating one of my best friends, who is female, for three and a half years. However, once he began to attend the Art Institute for Fashion, a whole string of rumors and questions began on whether or not he was gay. Studies show that those who feel threatened, bullied, or the minorities at school tend to do poorly with their studies. Lack of self-confidence, self-worth, and society's acceptance can impact how a student performs in school and socially amongst friends."

Part III Making recommendation

Part III of the final required students to reflect upon and make recommendations for creating an equitable environment for all students in schools. Prompting questions were: How can you create an environment in your classroom that honors individuals instead of stereotypes? What are examples of ways in which gender stereotyping and social roles can inhibit children from learning and impact their social, emotional, physical well-being?

The answers to the final question were looked at specifically as the others were clearly pointing students in the direction of the readings and text: Describe how this experience impacted your

attitudes and beliefs about gender stereotyping and social roles. The following theme emerged: Personal Transformation.

Personal Transformation

Students reflected upon how the assignment and the experience “feeling” like the “other” impacted them. One student called the professor conducting the study during office hours on several occasions to ask questions about the material, wanting to process the question of gender and social roles more personally. Thinking about her experiences was starting to impact her relationship with her husband in their new marriage. She was living with him on a military base in another state and was grappling with the new roles she felt she was having to assume as a new wife. She reports:

“My upbringing definitely influenced my actions in second life. I was raised with the “traditional” female social roles instilled in me. My favorite color was and still is pink. Although my favorite color has not changed, my views on social gender roles has changed dramatically. Since I began the assignment I got a job and I no longer tend to the home and my husband has begun to help around the home. My husband helps with laundry and even takes pride in learning how to cook. My husband likes to brag to his friends that he can cook! I appreciate all that he does around the house, and feel a bit saddened to think that it is “expected” of us, but it is something that deserves appreciation when a “man” does it.”(female).

Other characteristic responses were:

“I consider myself a “good” guy. I’ve always tried to be respectful to women and their differences to men. In my youth, I always had more friends who were female than male, and was usually having brotherly chats with their boyfriends about how they should change how they treat them. I don’t think, however, I ever actually put myself in their shoes until I stepped into Second Life.” (male)

“One of the things I have realized throughout this experience is that as a male avatar I felt frustrated, shy, unwilling to participate at times. In real life I am not this way. I am outgoing, and rarely hesitate to participate in discussion. I credit this to an adolescence and early adulthood in which I was never, relatively speaking, sent the message that I am not okay. This tells me that when people are sent the message that what they do or who they are is not okay, they will not grow to have the confidence they deserve to have. This is not only true for the gay student and transgender student, but also for the boy who wants to take home economics or the girl who wants to play football.” (male)

“Educators should provide a safe environment for their students so students feel more comfortable being themselves. They themselves should be role models. Understanding the influence of students’ cultural memberships will be important as teachers try to open up the possibilities for all of them, regardless of their sexual orientation and gender. When school officials and teachers are supportive of (LGBT) students, the students will feel safer in school and do better in school. Educators have the responsibility to eliminated homophobia inside there schools. This experience helps me to understand and realize the impact gender stereotyping and

social roles have on children. I realize that although educators simply can't eliminate gender and social roles stereotypes from occurring in schools they can help limit its effect on students." (female).

"This class opened my eyes wider to the fact that most of what happens in life can be attributed to societal constructs. Pink is a girl color, football is a male sport, secretaries are all females, iron workers are all males, and so on. Now that I see how these norms have no logical basis, I can implement a more open environment for my students to learn." (female).

Student Perceptions of Second Life

A Student Perception Survey of Second Life (see attached) was given to examine students' perceptions of Second Life as a viable means to enhance interactivity in a 100% online class. The Student Perception Survey of Second Life was given to all students who participated in using Second Life. Descriptive statistics were generated examining three areas: *Effectiveness*, *Advantages*, and *Usefulness*. A student perception survey was administered to the Second Life cohort. The results of that survey are provided in Table 1 below (n=15)

Table 1.

Student Perception Survey

STUDENT PERCEPTION SURVEY DATA

	RATING					
						1=disagree
						5=
	1	2	3	4	5	strongly agree
EFFECTIVENESS	Q#					TENDENCY
Most people believe that SL is more effective than traditional methodologies.	1	1	2	6	4	1 Agree
In a course with both traditional and SL methodologies, I learn better through the SL portion.	2	1	4	5	2	1 Disagree
I prefer SL use in an online course to traditional online courses.	3	0	3	4	5	1 Agree+

I believe that I can learn the same amount using SL in and online course as in an all online course. 4 0 3 3 6 1 Agree+

I believe that I can make the same grade in an online course that uses SL than in a course that has online course tools only. 5 1 1 2 8 3 Agree+

ADVANTAGES

I would benefit if there were more Online Line courses using Second Life. 1 1 1 3 5 3 Agree+

Second Life does not offer any advantages to me. 2 1 4 6 1 1 Disagree+

I believe that I can learn more or would learn more through on-line material that included Second Life experiences than through online material alone. 4 0 4 3 5 1 Agree

I prefer on-line courses that include Second Life to traditional courses. 5 0 3 4 5 1 Agree+

On-line courses using Second Life make me uncomfortable. 6 2 6 3 1 1 Disagree+

I would feel comfortable taking courses on-line if they used Second Life. 7 0 3 2 7 1 Agree+

I contribute more in class discussion in Second Life. 8 1 3 3 3 3 Agree+

It is difficult to contribute to class discussions in Second Life. 9 0 5 4 3 1 Disagree

I would like to have more courses taught using the SL methodology. 10 0 5 1 6 1 Agree

USEFULLNESS

I believe Second Life in education is useful. 1 0 2 2 7 2 Agree+

Second Life provides me with a valuable learning experience. 2 0 1 2 7 3 Agree+

SL makes online feels more interactive 3 0 1 2 7 3 Agree+

I felt more connected to the professor and students in an online course using SL than I did in an all online course that did not use SL 4 0 2 3 6 2 Agree+

Evaluation of success using SL is objective 5 0 3 2 7 0 Agree+

Using SL requires significant changes by a student 6 0 2 3 6 2 Agree+

The “Tendency” column results below are established by counting the responses higher or lower than the neutral value of 3. For example, in question 7 under “Advantages” there were 4 responses above the neutral value and only 3 below, so there was a very slight agreement with the idea that students would be comfortable if their online class included Second Life components. The + or – quantifiers indicate that the tendency is more significant. For example, question 3 under “Usefulness” earned the + designation because 8 of the 9 students surveyed indicated agreement with the idea that Second Life makes online coursework more interactive.

DISCUSSION AND CONCLUDING REMARKS

The t-test comparing pre- and post-test scores was not significant revealing that attitudes toward gender and social roles regarding *Gender Transcendent* and *Gender Linked* did not show a significant change. The results revealed that these preservice teachers were already aware of stereotypical attitudes toward gender social roles and were already open-minded, if not answering in ways that would paint them in a positive light, especially with a heightened understanding of their role as teachers in equitable teaching all students. However, this data did not reflect a comparison between Second Life participants and non-Second Life participants. To more clearly identify the value of virtual learning as a tools for improving outcomes compared to

more traditional, text-based learning management systems (discussion posting, viewing videos, web searches, reading), the study should be repeated to generate more reliable quantitative data that compares the traditional online tools in Vista for example, and the use of virtual learning technology such as Second Life.

The qualitative data generated shows that students using virtual environment learning to explore gender roles were having experiences that stimulated them to more deeply engage in perspective taking, stimulating them to empathize and learn about their perceptions of gender and beliefs about social roles. Second Life provided a virtual environment for students to engage in learning experiences that would not be possible or practical in the real world classroom. Their responses indicated that virtually experiencing gender roles in Second Life impacted their ability to empathize with others, recognize some of their own prejudices, or at least become aware of the ways in which they think about gender and socialization. The experiences students had gave them insight into a deeper thinking about gender-linked perceptions. For example, feeling vulnerable when approached by a stranger led a male student to have insight into how women may, feeling afraid to be deceptive about one's "real" gender gave students insight into how a high school student may feel if forced to hide his/her sexual identity. Virtual world learning was used successfully to provide students with an experience that would have been impractical or impossible in the real world classroom setting.

The results of the survey indicated that these students have a generally positive attitude toward their experience learning in Second Life. Notable responses include that students apparently would like more online courses that use Second Life. Notable result of this survey is that the cohort strongly agrees that Second Life represents a valuable and interactive educational tool.

Second Life is clearly a very rich virtual environment that with continued experimentation and use will reveal its advantages for providing a more experiential, more interactive component to online learning. The difficulties encountered were primarily with extra time it took for the professor to meet once a week in world to orient students to the environment, take them on field trips, and debrief their experiences. Students voluntarily attended a weekly meeting held in the evening for an hour and sometimes depending upon interest, two hours. These informal discussions and trips were interesting, engaging, and created a kind of group intimacy not usually developed in an online course. Faculty and students talked about feeling as if they "really knew" each other. Yet, all of the interaction was in the form of avatars. Students were not native to the Second Life environment or familiar with gaming technology had more difficulty initially learning the tools for navigating Second Life. However, with the buddy system, students joined together and often met to explore during the week, doing their assignments (exploring social settings) together. On the other hand, they all seemed to enjoy learning about the new environment and they all engaged in unsupervised exploration.

Second Life is a viable means to provide an experiential component to teaching a subject that requires an interactive, social context or social exploration to prompt reflective learning. However, in order for the project to be successful, the professor set a time once a week to meet with students discussing gender issues, debriefing their experiences, going on field trips, and otherwise, teaching an additional class within Second Life to ensure student success and feelings

of interactivity with the professor and each other. This extra time amounted to another class that was taking place within the class.

On the other hand, these meetings, held while sitting around the campfire under the nighttime sky created a sense of intimacy and safety. After all, none of the participants had met each other, knew what the others' age, sex, height, weight, or race unless the participants volunteered this information. All in all, the experience both the professor and the students had together was positive and an intimacy developed that would have been difficult to develop in an otherwise asynchronous fully online course. Anecdotal reports from students indicated that the experience was interesting, exciting, and for some life changing.

Becoming the "opposite sex" sometimes provoked feelings of vulnerability that when reflected upon led students to reveal experiences they had as children with bullying and sexual harassment for example. These conversations took place during the nightly meetings in Second Life while sitting together around the fire at the university home location debriefing the experiences they had during their SL adventures. Students said they would not have revealed in the classroom on campus. These experiences, when revealed, allowed for the professor to guide students in connecting their experience to readings, social theory, teacher/student roles, course films and to the student learning objectives. A social constructivist theory of learning suggests that deeper, longer lasting learning takes place when situate within a socially and culturally shared context (Lave & Wenger, 1991). Second Life offers a possible means to improve the traditional online learning context by providing such a context.

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Appendix A. Social Roles Questionnaire

I am interested in the ways that people think about different social roles. The following statements describe attitudes different people have towards roles for men and women. There are no right or wrong answers, only opinions.

Please express your personal opinion about each statement. Think about your opinions now and indicate how much you agree with each statement with 1 meaning you strongly disagree and 5 indicating you strongly agree with the statement.

1. The freedom that children are given should be determined by their age and maturity level and not by their sex.

1	2	3	4	5
strongly disagree			strongly agree	

1. Some types of work are just not appropriate for women.

1	2	3	4	5
strongly disagree			strongly agree	

3. A father's major responsibility is to provide financially for his children.

1 2 3 4 5

strongly disagree

strongly agree

4. Tasks around the house should not be assigned by sex.

1 2 3 4 5

strongly disagree

strongly agree

5. Only some types of work are appropriate for both men and women; for example, it is silly for a woman to do construction and for a man to do sewing.

1 2 3 4 5

strongly disagree

strongly agree

6. Mothers should make most decisions about how children are brought up.

1 2 3 4 5

strongly disagree

strongly agree

7. Men are more sexual than women.

1 2 3 4 5

strongly disagree

strongly agree

8. People can be both aggressive and nurturing regardless of their sex.

1 2 3 4 5

strongly disagree

strongly agree

9. For many important jobs, it is better to choose men instead of women.

1 2 3 4 5

strongly disagree

strongly agree

10. People should be treated the same regardless of their sex.

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Social Media: Why This Matters To Everyone in Education

Daniel Clark

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My son, who is eight, is a fanatical Pokémon gamer. If he cannot work out how to solve a particular problem in the game, he will find a video on YouTube that tells him how to do it (there always is one). He is now taking the logical next step of making his own videos to let others know about things he has discovered. The number of YouTube views, “likes” and comments provide immediate feedback on how useful his video was. He doesn’t know it (and isn’t interested when I try to explain it to him), but what is going on here is free, spontaneous, self-directed and very effective skills-based education. Does this scene provide clues to the future of education?

Put another way, in ten or fifteen years’ time, students may expect to find educational nuggets on demand whenever they need them. Some will have had many years’ experience of creating and sharing content, perhaps quite complex, perhaps to do with education. Will they be happy to accept timetabled classes and sit through lectures?

Is this scary? Back in 1999, when there were still a few people muttering that the Internet was “just a fad”, the science fiction writer and visionary Douglas Adams wrote an article expressing amusement at the way the mainstream media considered the Internet something odd, and slightly sinister:

...you would think we would learn the way these things work, which is this:

- 1) Everything that’s already in the world when you’re born is just normal;
- 2) Anything that gets invented between then and before you turn thirty is incredibly exciting and creative and with any luck you can make a career out of it;
- 3) Anything that gets invented after you’re thirty is against the natural order of things and the beginning of the end of civilisation as we know it until it’s been around for about ten years when it gradually turns out to be alright really. (Adams, 1999)

Mr. Adams claimed this could be applied to any innovation, from the wheel onwards. Sadly, he died before the rise of social media, but a very similar pattern (with some flexibility about the ages), can be seen today. Many companies ban the use of social media at work (Adeyeri, 2011). In June 2011, *The Economist* website hosted a debate with the title, “This house believes that we are in a new tech bubble.” Among many contributors was someone posting under the name of “Kool-Aid”:

“What is the value of websites where people post pictures and mostly useless comments? If any site had value it’s LinkedIn. The rest are fluff or at worst bait to allow companies and governments to data mine the general population, which is how Facebook gets its income...” (“This house believes”, 2011).

Meanwhile, hundreds of millions of people, many but by no means all of them under 30, are getting on with making posting “pictures and mostly useless comments” into the technology phenomenon of our era. For today’s teenagers, and anyone younger, online communication, sharing content, self-publishing and collaboration are not a new thing, they are “just normal” (Lenhart, 2009). Over time, this will have a profound impact on education, and we need to start adapting.

This article aims to help anyone involved in education with this adaptation. I still find there is some confusion about what is meant by social media and what is actually new about it, so the article deals with this, before looking at the impact these media are already having on education. I have divided this impact into what appears to me to be three phases, depending on who is originating the content and who is the target audience. Examples are discussed within each of these phases. My aim is to raise awareness of innovative efforts that are taking place to use social media tools in a positive way, and encourage experiments that will enable educators to take advantage of the new tools and techniques on offer.

What are Social Media?

The term “social media” is everywhere, but, surprisingly, there is no generally accepted definition of it. It is helpful to consider a definition to clarify what we mean by the term, and in particular how it is distinguished from similar terms such as “social networking”. A recent informal survey of experts by blogger Heidi Cohen yielded 30 different definitions - perhaps the most useful for our purposes comes from consultant Doreen Moran:

Social media is a collection of online platforms and tools that people use to share content, profiles, opinions, insights, experiences, perspectives and media itself, facilitating conversations and interactions online between groups of people.

- Social Media is the platform/tools.
- Social Networking is the act of connecting on social media platforms.
- Social Media Marketing is how businesses join the conversation in an authentic and transparent way to build relationships (Cohen, 2011).

It is also useful to contrast social media with “industrial media”, such as newspapers, television and film. Industrial media can be powerful tools for broadcasting information, opinions and entertainment, but they are generally expensive to use, require specialist training to produce, and are often heavily regulated. As such, the content broadcast via these media has tended to be dominated by financial, political and/or intellectual elites.

By contrast, social media requires no training to become a contributor, can be free or cheap to use, and is regulated lightly, if at all. Anyone with an Internet connection can publish a blog,

start a group on Facebook, or send tweets. Add a phone or other inexpensive video camera and you can upload a video to YouTube. With a little more support, a microphone and some free software, you can record a podcast and make it available. Any of these tools allow you to broadcast to billions of Internet users worldwide, who make up your potential audience. The direct impact of this on industrial media is, of course, profound. *The Economist* recently published a special report on the news industry which quoted Arianna Huffington, co-founder of the successful news website the *Huffington Post* as saying: “They [readers] don’t just consume news, they share it, develop it, add to it – it’s a very dynamic relationship with news.”

Substitute “education” for “news” here and we may just have a glimpse of our future. The report’s conclusion could also apply to our sector: “A new generation that has grown up with digital tools is already devising extraordinary new things to do with them, rather than simply using them to preserve the old models. Some existing media organizations will survive the transition; many will not.” (Standage, 2011)

Social Networking

Social networking is the most pervasive use of social media. Its roots have been traced back to the earliest days of computing in the 1970s but it gathered pace in the early 2000s, with the founding of numerous social networks such as Friendster, Friends Reunited and Bebo (Cellan-Jones, 2011). The statistics showing the sheer popularity of social networking today are well-rehearsed but, to select a few:

- In 2012, Facebook had 900 million active users, 526 million of whom were active daily. More than 300 million photos were uploaded *every day* (“Key facts”, n.d.).
- In 2012, 72 hours of video were uploaded to YouTube *every minute* and over half of the content had been rated or commented on (“Statistics”, n.d.).
- The most “followed” celebrities on Twitter in 2012, Lady Gaga and Justin Bieber, had over *24 million* followers each (“The 5 most popular”, n.d.).
- According to research by Morgan Stanley, *social networking surpassed email* in terms of number of users in July 2009 and in terms of time spent in November 2007 (Meeker, Devitt & Wu, 2010).

There can now be no doubt that “the rules of the game” have changed for anyone involved in any sort of communication. Those who communicate for a living, such as marketers, politicians and educators, are among the first to experience the impact of these changes.

Social Media in Education

Any major change in the way people communicate is bound to have major implications for education. Consider the impact of the printing press, which made near-universal education feasible for the first time. It took centuries for the impact of the printing press to be fully felt and, while the impact of social media will no doubt be felt more quickly, it still has many years to run. However, it is possible at this stage to discern the outline of three distinct phases of its impact. These are running in parallel, but each began later than the previous one, and they may be distinguished by the main originators of content and the main “target audience” of the content.

Phase one was when faculty started to use the potential of social media to support each other and for their personal and professional development. In phase two, faculty began using social media tools to provide educational content, in one form or another, to students. Phase three, which began recently, is when students start to originate educational content. This content can be aimed primarily at fellow students, faculty, or a mixture of the two. These phases are illustrated below (Table 1).

Table 1. Social media in education

		<u>Originators of Content</u>	
		Faculty	Learners
<u>Target Audience</u>	Faculty	Phase One: "Support for educators	Phase Three: Social learning: student blogging and other learning tools
	Learners	Phase Two: Delivery of content	Phase Three: Social Learning: peer-to-peer

Phase One: Support for Educators

Many educators are keenly interested in new technology and self-improvement, and were quick to utilise social media from its earliest days to share resources and best practice, as well as discuss issues they face. Today, there are countless blogs maintained by and for educators, and there are even award programmes such as Edublogawards. There are resource-sharing sites such as Google for Educators, discussion groups and even dedicated video-sharing sites such as TeacherTube. Twitter is increasingly popular among educators, with “rock stars” such as Sir Ken Robinson (<http://twitter.com/#!/SirKenRobinson>) clocking up over 110,000 followers.

Educators can also leverage social media to expand their network and possibly to carry out collaborative research, although some have suggested that take-up in this area has so far been quite limited (Weller, 2011). It is not obvious whether any of this phase is changing the process of education itself. Educators aim to become better at delivering a very similar “product”. Communication is also intended to be into and within the community of educators, rather than being aimed at students or the wider world.

Phase Two: Delivery of Content

The second phase began when educational institutions started to see the potential of delivering content to students, and any other interested users, via social media or similar channels. The obvious advantage is that it is very easy to access the content. Usually, this is free of charge and therefore amounts to “open sourcing” educational material. Three of the most high-profile examples illustrate some of the range of options here.

- The U.S. Massachusetts Institute of Technology's OpenCourseWare project was the pioneer in the field of open sourcing, albeit publishing material via its own website rather than social media channels -which were not well developed in 2001 when the project started. It has published notes, assignments, videos and other materials from many MIT courses, for the use of other institutions, students or anyone who is simply curious (<http://ocw.mit.edu/index.htm>). MIT have recently announced plans to expand their free provision of material in a collaborative venture with Harvard called edX (<http://www.edxonline.org/>).
- Apple Inc, which dominates the market for legal music downloads, announced in May 2007 that it would allow universities to deliver content either to their students or publicly via the iTunes Store. Over 800 universities worldwide now use iTunesU, with about half making content publicly available, including many of the world's leading institutions. The site offers 350,000 free resources, which have now expanded from audio files to include slideshows, files in pdf format, and films (<http://www.apple.com/education/itunes-u/>).
- Khan Academy was created in 2006 by Salman Khan, at the time a hedge fund analyst. He aimed to record high-quality educational videos and make them available for free on his site and via YouTube. It has been astonishingly successful and now offers over 2700 videos, along with many tests, teaching resources and a game-based reward system. It is run as a not-for-profit organisation and has attracted funding from Google and the Gates Foundation, among others (<http://www.khanacademy.org/>).

It is uncertain how far the “open sourcing” of educational material will go, or what the implications for educational institutions are. On the one hand, MIT's project has not noticeably damaged their business model. One cannot get a degree from MIT via OpenCourseWare and people are still happy to pay for the overall experience and the validation of their learning. On the other hand, some are starting to question whether ever-increasing university fees are really justified when more and more resources are available for free (Kamenetz, 2010); the OER University project aims to offer formal academic credit to learners using only open access content (<http://wikieducator.org/OERu>).

Although phase two may have profound implications for some organisations, it is striking how similar it still is to the traditional model of education. In particular, the style of delivery in material from iTunesU or Khan Academy is identical, or very similar, to that of face-to-face learning in the classroom. There is scope for students to get involved here, for example, by sharing research essays, but the main communication flow is one-way, from the educator(s) to the student(s), with the students at best able to contribute some comments and ratings. This does not really seem to be in the spirit of social media!

Phase Three: Social Learning

Social learning with videos

I started this article with my son's approach to learning about Pokémon games. He does not seem to be particularly unusual - interestingly, the phenomenon of spontaneous, on demand, peer-to-

peer learning has so far been closely linked to gaming, with gamers being by far the most active users of wiki-hosting site Wikia (McGonigal, 2011).

However, it is not restricted to gamers. In 2009, UK telecommunication giant BT rolled out “Dare2Share”, which is a YouTube-style network allowing employees to upload video or audio content covering any work-related topic. The system also allows social features such as comments, instant messaging and rating, to make the most useful content most visible. The company expects substantial cost savings and efficiency gains but acknowledges that the major barriers to its success will be cultural not technological (Overton, 2009).

Peer-to-peer learning on Facebook

Students on many courses around the world have seen the benefits of organising “study groups” on Facebook, or other social networks. It is an easy way of offering support and encouragement, and sharing resources. More formally, it has been widely noted that Facebook has many similarities to a Learning Management System (LMS) (Wang, Woo, Quek, Yang & Liu, 2011) and, with the development tools now available, it is increasingly customisable. There are widely recognised privacy and intellectual property (IP) concerns with using Facebook. However, it has recently been argued that the familiarity students have with Facebook, and the presence of their support network on it, makes it attractive, at least to supplement the “official” LMS (Wing, 2011).

This approach has been piloted by Purdue University (Indiana, U.S.A.) whose developers have created Mixable. This is generally used as an application within Facebook, allowing students to share and store resources, post new content such as videos, comment and discuss. Students are automatically invited to join groups for all their classes, but can opt not to join, or to make content viewable by some fellow students and not others. Purdue’s faculty are keen to emphasise that Mixable is a supplement to faculty-driven learning, not a replacement for it, and results of the pilot are not available as yet (Kolowich, 2010). However, it is possible that this type of social learning may, over time, reduce the amount of faculty-driven learning required and change its nature.

Student participation on Twitter

The real-time, informal nature of Twitter means that it lends itself well to educational discussions. There are many examples of Twitter being used to discuss topics, complete assignments, carry out research and provide a live “backchannel” when a lecture or class is taking place. One high-profile example has been at the University of Texas, where Professor Monica Rankin encouraged her students to use Twitter for discussions during and after their history class. She identified two benefits of doing this:

- It encouraged wider participation, including students who were nervous about speaking up in a class of 90 people.
- It provided a permanent record of the class discussion which students could go back to in order to reinforce learning and develop a stronger sense of community (Ferenstein, 2010).

In this example, the education is still faculty-driven, but these tools may increasingly allow students to take control, and reshape the way they interact with their faculty and each other.

Student blogging

Another possibility opened up by social media is for learners to use the new tools as part of their coursework. An increasing number of university courses are requiring students to maintain blogs as part of their course, possibly even as part of the assessment (McClurken & Meloni, 2010). My own experience of blogging my way through a course I am currently studying has been that it makes a profound difference. Work which would have stayed within the confines of my tutor group can be shared with a wider audience, and I can benefit from the comments and feedback of anyone who is interested. It has opened up my network among academics and learning technologists. And it is a good discipline, knowing that whatever I write can be read by anyone.

Of course, if we are to expect students to blog, educators need to lead by example. It has been strongly argued that blogging carries many benefits for educators, including opening up new audiences, providing feedback and encouraging creativity (Wheeler, 2011).

Conclusion

The key conclusions of this article may by now be fairly clear:

- Social media are now used throughout society and by educators at all levels. This is a radical change in the way we communicate with each other. It will have profound implications on any business that involves communication, certainly including education.
- Despite increasing use of social media by educators, the approach of most educational institutions still seems very “industrial media”, with timetabled classes, an emphasis on learning delivery in person and by printed books, transmission from educator to students and much assessment being by written exams. No doubt this will take time to change, but we can begin with small steps and small-scale experiments.
- As with all new technologies, it is impossible to predict what those implications will be in any detail. However, they are likely to include greater transparency, more involvement from students, including opportunities for live collaboration and learning in small, on-demand pieces rather than in a logical, sequential structure.
- Specific actions for educational bodies can be grouped around the three phases described above. Relating to phase one, all faculty should be provided with support and encouragement to use social media as part of their professional development, and to use social media tools to improve communication and sharing of knowledge. Relating to phase two, universities should look at how they can share their educational content more widely using tools such as YouTube and iTunes. This will build valuable expertise, fulfil their social mission and promote their brand. The development of phase three is unclear as yet, but the key here is to experiment with ways of increasing student participation, such as discussions on Twitter and blogging.

Changes in the education sector will probably include the rise of new participants and the demise of some existing ones. The most successful organisations are likely to be those who embrace and

experiment with the new technologies and gain experience in them, rather than those who hang back. Engagement with social media needs to be seen as a strategic priority for all institutions and individuals involved in education.

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Bio



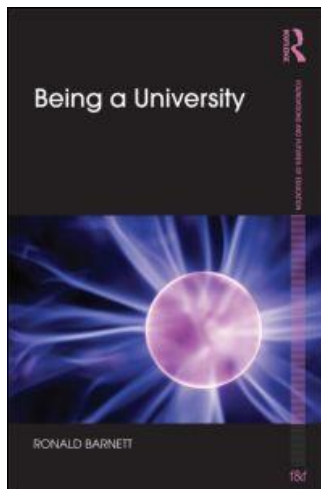
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Review of Ronald Barnett’s “Being a University” (2010, Routledge)

Ariadna J. Rodríguez Díaz

National University of Mexico, Mexico

This book presents educators with a variety of possibilities to consider as their respective academic institutions evolve into 21st century universities. The author suggests that the original spirit of the university can be rescued and preserved by studying its development history over the last several hundred years, as well as by understanding better the state of contemporary higher education and how it is likely to evolve in the future. Knowledge of higher education’s academic and historical past and its current trends, and recognition of the different aspects of its behaviour may equip educators with the skills needed to successfully guide their institutions into the future.



The book is written for professionals and academics in higher education and for all who are interested in education policy, although at times the reader is expected to have some background in pedagogical and academic research regarding educational trends. The author follows a formal presentation and writing style, splitting up the book in three parts and subdividing each part in chapters. The first part describes six different types of universities based on their current status and academic and managerial practices. The second part treats the university as a part of a number of different networks from an academic and a managerial perspective, and from different viewpoints. The third part describes four possible and feasible “utopias” considering a variety of scenarios and viewpoints. The book ends with a conclusion that brings together the main points: the necessity of rescuing and preserving the original spirit of the

university, and the need not only to accept students but also to accompany them through the learning process till they graduate and help them embrace the continually evolving university values. At times the author uses a particularly “technical” language that is not always easy to follow; however the references and the bibliography help the reader understand the concepts and the inferences.

Three major themes emerge across the three parts of the book: the purpose and nature of education, the interdisciplinary approach to university education, and the theory-practice divide. The author begins with some of the well-known and well understood concepts about what the university is from different perspectives. The main focus is on the definition and analysis of the university historically, contemporaneously and in the context of multiple networks. Thus the first part of the book draws the reader’s attention to a logical end by piecing together the facts presented and the ideas introduced. However, later the author digresses somewhat with bringing in unusual concepts about the university’s behavior; these could be a little confusing for a reader not immersed in academic research.

Further, the author describes universities in the increasingly knowledge-based society as immersed in a triple helix model of academic-industry-government relationships; this is the "entrepreneurial" university, with technology being a strategic variable. In the emergent entrepreneurial paradigm universities play an enhanced role in technological innovation. The entrepreneurial university is a global phenomenon with an isomorphic developmental path, despite different starting points and modes of expression. The concept of the entrepreneurial university was introduced in (Etzkowitz, Webster, Gebhardt, & Cantisano, 2000) which is recommended for further reading and a discussion of the salient points.

Regarding the two contending concepts of "being" and "becoming" discussed in the second part of the book (chapter 5) the reader expects a definition of the university of the present and of the future; however, these needed definitions are somewhat understated. Rather, the author reveals his fondness for philosophy and poetry, and attempts to provide a philosophical and poetical context for the content of this part of the book. A recommendation for further reading and reflection is Hashimshony and Haina's (2006) article about designing the university of the future.

Hashimshony and Haina describe six main layout prototypes and identify several factors that are particularly important in defining the nature of the future university: financial challenges, collaboration with industry, increasing student population and greater diversity, new patterns of teaching and learning, growth of interdisciplinary fields of knowledge, and openness to the community. Hashimshony and Haina point out that universities will undergo major organizational and physical changes as they adapt their activities to meet present and future needs since the physical layout of the future university will need to respond to these changes. This vision complements Barnett's ideas about the university's evolution by adding a physical and a design perspective. While Barnett focuses on the university from a social and philosophical perspective, Hashimshony and Haina's analysis covers industrial and technological issues.

Furthermore, in considering the entrepreneurial university as the academic university of the future, the author provides a compilation of 'entrepreneurial university' perspectives based on examples from universities in the United States and in Europe. These points of view are analysed along two axes: scale (small-large) and risk (innovative-high / conserving-low). A further review of some experiences in countries and universities around the world could make for a richer discussion regarding the "becoming" concept of the university. It would also be relevant and useful to review the history of medieval European universities in order to add to the author's past and present of the university concept, and to include a vision of the new American university concept as the future of his university concept (Kauffman-Planck Summit on Entrepreneurship Research and Policy, 2008).

As discussed at the Kauffman-Planck summit, European universities are opening up to the challenges and opportunities of the future. One of their main concerns is about the rather rigid process that students need to follow in order to enroll, study and obtain a degree. I would suggest considering government policy as another important variable involved in the transition to the entrepreneurial university especially as it may encourage a collaboration between academic and applied researchers.

In relation to the concept of "institutional courage" the author adds a quotation from a Walt Whitman's poem which talks about "negative courage" for doing things. Even though it is interesting to read a poem about space, time and the unknown, in my view it does not support the "time and space" concept developed by the author.

Further forward, in chapter 8 concerning two other contending concepts ("authentic" and "responsible") and their interrelationships: in practical terms universities do not really lend support for some of the definitions. For example, by being authentic and responsible, Barnett describes the university's behaviour as turning inwards and beyond itself without the need of external support, and by being inauthentic and not responsible, Barnett describes the university's behaviour as working for its own interests. Such extreme behaviours are not witnessed in the real universities we know – indeed the author later clarifies that the behaviours described are not necessarily found in real universities.

The author also provides some theoretical and empirical examples for a better comprehension of each type of university; these examples illustrate the flow of the argument and help justify the introduction and analysis of the university types including critiquing and contrasting them. By the end of the book (the "Coda" chapter) the reader is ready to accept the author's thesis about the need of rescuing the spirit of the university, even if some of the interrelationships between the contending concepts about the university mentioned in Part II of the book could be better supported - either because the concepts may not be totally realistic (e.g., an irresponsible and inauthentic university) or because in the case of some concepts (e.g., being and becoming) the definitions derived from poetry and philosophy could be more succinct or precise. Nonetheless, the reader is able to appreciate the value of the author's vision about the university: it goes beyond understanding the university solely in an academic setting (i.e., providing a learning process for students), or in an administrative setting (i.e., providing a framework for selecting students to enroll and complete a degree).

To conclude, through reviewing, analysing and critiquing ideas and visions about university types and models, the author is successful in introducing and explaining the concept of "being a university" by both charting its history and critically examining future development trends.

My personal experience reading the book was that it opened up my mind about what a university was, immersed like I am in both the undergraduate and graduate university environments. To gain an appreciation of the normal daily behaviour of the academic and administrative environment enriched my experiences as a student and now as an academic. In the context of my own academic and technological background the book broadened my own overall understanding of the university (the place I work for) by highlighting it from a social and philosophical (even poetical!) perspective.

The author successfully argues that a university's past needs to be viewed from a social and philosophical point of view, in order to understand actual and future university behaviour - one of the main points made in the book. Thus the book will be an important source for further social sciences research that aims to create new knowledge by adding a science and technology dimension. The university's behaviour will no longer be perceived as static; rather the university will be seen as a dynamic, non-stationary environment, with research considering variables that

evolve with time. Furthermore, this book can help deans and other education decision makers in transforming their respective departments, schools and faculties into ecologically and socially responsible organizations that meet the broader actual and future needs of the professionals they educate.

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Bio

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The NAIRTL Threshold Conference, Trinity College Dublin, Ireland, June 2012: A Conference Report

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University of Colorado Boulder, USA, and University of Tennessee, U.SA

In June 2012, Laura L. B. Border and Taimi Olsen served as HETL Liaisons at the Threshold Conference, held by the Irish National Academy for the Integration of Research, Teaching and Learning (NAIRTL) at Trinity College, Dublin (Ireland). The Academy dates from 2007 and promotes the investigation, practice, dissemination, and recognition of the linkage of research on teaching and learning with improved practice in Irish institutions of higher education.



The Academy hosted the fourth biennial international conference on “Threshold Concepts” in tandem with their sixth annual NAIRTL Conference in June 27-29, 2012. More than 280 delegates represented 16 countries from four continents, including 26 Irish institutions and 112 others. Prior Threshold Concepts Conferences were held in the United Kingdom (Scotland), Canada, and Australia. The theme of this year’s conference was “Engaging Students with Threshold Concepts, Interdisciplinary Threshold Concepts, Threshold Concepts in Professional Development, and

New Developments in Threshold Concepts.” Bettie Higgs (University College Cork, Ireland) chaired the conference committee, which included Vick Davies and Sarah Maguire (University of Ulster, UK), Ray Land (Durham University, UK), Erik Meyer (University of Queensland, Australia) and Catherine O’Mahony (NAIRTL, Ireland).

Brendan Hall, University of the Highlands and Islands, in Inverness, Scotland led a pre-conference workshop for newcomers on the historical background, definitions, and explanations of “threshold concepts.” To best understand the conversations at this conference, it is helpful to know the working definition of threshold concepts and its characteristics. In 2003, Ray Land and John Meyer introduced the threshold concept as one which is “troublesome” to students and has five characteristics: it is transformative (changing how a student views a concept), troublesome (in that it can be counter-intuitive), irreversible (once learned, it cannot be unlearned), integrative (bringing aspects of knowledge together) and bounded (in terms of disciplinary boundaries). They also suggested in following work that a threshold concept is discursive and recursive. The conference itself was structured around four keynote talks, a series of Pecha Kucha (a Japanese word for “chats” in which 6-7 speakers had about 6-7 minutes each to make a point, then opened

the discussion up to questions), and concurrent sessions made up of series of presentations by different speakers.

Ray Land, co-editor with Jan Meyer and Jan Smith, of *Threshold Concepts within the Disciplines*, (2008) addressed the notion of the incorrigibility of the liminal state of learning in the first plenary session. Bettie Higgs, in the second plenary session, addressed troublesome concepts that students find hard to grasp, attributing some of the problem to students' desire or lack of desire for action. In the third plenary session, Glynis Cousin (University of Wolverhampton, UK) focused on the need for faculty to shift attention to the relationship that exists between themselves and their students, and how the instructional duo shapes together what is taught and what is learned. In the fourth plenary, Patrick Carmichael (University of Stirling, UK) spoke about his experience working with research and development projects that integrate threshold concepts and troublesome knowledge. The [plenary session](#) talks can be viewed at the conference site.

In line with the conference theme, the concurrent sessions and Pecha Kucha sessions were organized around the following tracts: Engaging Students with Threshold Concepts; Interdisciplinary Threshold Concepts; Threshold Concepts in Professional Development (which encompassed both teacher education and faculty development in higher education); and New Developments in Threshold Concepts. Several themes that crossed multiple disciplines also emerged during the conference, such as the need for formative feedback from students in order to understand where they are struggling and why. This undercurrent was present in the keynotes but came out particularly in session presentations, in the juxtaposition of different disciplinary experiences.

Tony Ryan (Cork University Hospital, Ireland) presented a talk on, "Medical Student Reflections of Newborn Medicine," giving an example of the use of student reflections, as he identified thresholds for learning under stressful situations (medical students watching doctors and nurses treat at-risk newborns). Anthony Ciccone's (University of Wisconsin, Milwaukee) presentation, "Accepting Ambiguity, Enjoying Complexity: Threshold Concepts in the Humanities" emphasized differences between expert and novice. While humanities experts are comfortable applying critical analysis and literary theory—in his course, students are uncomfortable with such critiques concerning comedy. Ciccone used student reflections to show their progression as thinkers, as they were coaxed to analyze and evaluate texts.

A second observation, concerns the presenters' use of various research methods. Student feedback, reflective statements, and interviews were used heavily, as with the two presenters already mentioned, and for some, the studies encompass multiple sections or courses. Lee Wertzler (Mount Royal University, Alberta, Canada) presented the "Self as Learner as a Threshold Concept" and described student experiences in "First Year Studies" courses that introduce Canadian students to the collegiate academic environment. She based her study primarily on structured interviews with students and argued that metacognitive awareness is a threshold concept with which undergraduates must grapple.

A third, related theme, addressed the patience, time, and willingness to work with and dialogue with students in a messy, liminal space. Several presenters, as well as speaker Patrick

Carmichael (John Moores University, UK), remarked on the desire in some disciplines for students to stay in the liminal space (which is seen to encourage creative thought).

The conference demonstrated the existence of the potential for explicit comparisons and contrasts among disciplines to inquiry about threshold concepts. A more deliberate move to form research agendas and discussion of research methods would be helpful in bringing more cohesion to the variety of projects presented at the conference. It was difficult as a novice just learning about threshold concepts to hear individual presentations and understand whether there is yet any agreement in a particular disciplinary field about central threshold concepts. It will be exciting to see how this movement continues to grow, particularly given the level of energy and the quality of presentations.

The keynote talks were most helpful in that they provided broad perspectives that were theoretical, reflective, and speculative, and they are worth [viewing online](#). Ray Land divided his talk between two topics: the spatial metaphor of liminality and the concept of ontology in liminality. First, he considered the potential usefulness of a variety of spatial metaphors as providing different understandings of liminal space. He considered what might better describe the student's experience when confronted with difficult concepts, and the potential for transformation.

Land explained that change in a student's thinking involves "oscillation" as students fluctuate between old and new knowledge. Language is important in this space, argued Land, because letting go of currently held concepts is difficult—as he said, you have to "let go of your prior experience." In this situation, space can be a space of emergence since "rethinking" has "emergent properties." Land proposed that "the learner encounters something new and tries to integrate it," in which case that student will find that his or her former view is inadequate and will have to let go of it. He explained that for the student, all of your learning is part of the conception of yourself, and as you are joining a "community of practice," you have to experience this "reworking" of yourself, a "re-authoring of self." Thus, the metaphor of space should encapsulate this idea of oscillation.

Land pointed out that educators often use the trope of the "zone of proximal development," a metaphor of space which implies that we need to get closer to expert status by crossing through a space. He queried the audience: Is it space or just relationship with someone else? For architects, Land explained, a curved line suggests possibilities whereas a closed line creates a threshold, a crossing out or in. Therefore, changing our metaphor changes our conversation. With a curved line, architects are more interested in connections. At this point, Land showed a slide of a London Underground transportation map and cited Beck (developer of the London underground system, 1931) who said that connection is more important than containment. In transformational space, there are degrees of connection, and the map shows points of connection. As educators, Land asked, how do we help students get from "here" to "there"?

The second half of Land's talk dealt with aspects of conversations between teachers and students. Frequently, teachers transmit content through lecture, yet students will get stuck by threshold concepts. Part of the problem, Land explained, lies in the process of students adding new terms to their stock of concepts. Communication between professor and student, when new

terms are introduced, can lead to difficulties. Land asked, “How does the teacher become aware” of these instances when students have trouble integrating new terms? Students need to engage and manipulate new knowledge—and the professor provides the framework. However, for the teacher, it may be difficult to figure out when students are in this state of struggle and when they need a clear framework, because “they may not want to reveal” what they don’t know. They may continue to use an earlier signifier, a term which means one thing to the student and something else to the teacher, a situation which disguises their lack of understanding.

Another problem, said Land, is that in order to integrate new knowledge, students need to understand aspects and terms sequentially, yet concepts are holistic. “In the end, hopefully” it all comes together when they have all the pieces. Until then, there is a time of “conceptual uncertainty.” He reached the end of this talk by asking the audience, what might help students acquire “threshold capital?” What disposition or affective aspect might help students acquire signifiers more readily?

Land may have begun his talk with a highly abstract consideration of spatial metaphors, yet he quickly moved into the area of student understanding and teacher-student connection and communicative relationships. In this regard, his talk melded nicely with the two shorter talks by Bettie Higgs and Glynis Cousin. All were addressing an emerging concern—the centrality of teacher-student interaction in the learning process. Higgs spoke about the affective domain of learning and examined why students would fall short of ‘crossing’ the threshold. She posited that students adopt coping mechanisms and do not fully communicate with their teachers, because they may face barriers in addition to threshold concepts in academic studies, such as difficulties in their own lives or problems internalizing university academic expectations.

Through her research, Higgs noted that students have a period of time where they are transitioning into readiness to address threshold concepts and that this space may be “messy” with confusion and questions (she notes that Cousin has previously suggested such as well). She noted that when students start asking questions, this is a sign that students are starting to work out concepts. Students need to start discovery of new concepts for themselves, but, Higgs argued, teachers can help this process. Rather than speeding up the transmission of content in an effort to get coverage and possibly ‘leapfrogging’ through complex concepts, teachers can pay attention to what students need to learn. They can also incorporate activities that invite students to work with and integrate new knowledge. The act of trying to put things together can cause students to raise questions. More importantly, students are developing skills in self-assessment, self-awareness, and self-direction—these are capacities that we can help students build, says Higgs.

Glynis Cousin, too, argued for a focus on the teacher-student relationship. In her discussion of her various educational research projects, she exhorted the audience to be neither teacher-centered nor student-centered but to center on the relationship. In one example, she discussed teaching a study skills module meant to introduce first year students to academic practice. She explained that she was working with a phenomenon she explained as what is happening “in the wings” for the students. The students who aren’t engaged, she noted, “don’t accept the exchange relationship” that is necessary for themselves as university students. Reciprocity between student and teacher is key to their learning, she stated. One of her students said that “you have to learn to feel like a student” at university and recognize that you have relationships with teachers. Cousin

asked the audience, how do we typify the student-teacher relationship? As educators, she said, we think in terms of being either student-centered or teacher-centered. Cousin argued that we need “to restore relationship to centrality.”

The conference ended with a talk by Patrick Carmichael, who began with an overview of the conference topics, then focused on curriculum development in the context of threshold concepts. Following Cousin’s talk, it was not difficult to see the influence of Cousin on Carmichael and the similarities of their thinking, since Cousin has written about threshold concepts and curricular design (2006). Cousin laid out principles of design, including “listening with understanding” to the student and “tolerating the confusion” which students exhibit as they learn a troublesome concept. Given this ongoing conversation about teacher-student relationships and communication, Carmichael brings us appropriately to the level of the decisions we make in delivering a course of study.

In the first half of his talk, Carmichael addressed common assumptions among educators that our curriculum is well-understood and that what we are doing when we examine threshold concepts is just a mapping of “our existing practice” and a subsequent directing of students’ attention to these concepts. In one professional development project, Carmichael and his colleagues asked teachers to identify areas of conceptual difficulty. Then, the teacher would explain a concept not as a lecture but as if a student had come to the office having trouble with a concept and seeking help. These “talks” were video-taped and posted online, along with any drawings and other artifacts produced by the teacher during the explanation. All were seen as highly useful by both students and teachers (who appreciated not having to make explanations repeatedly).

However, Carmichael noted, in this early project, the teacher’s thinking was about “mapping existing territory”—with the assumption that the curriculum is understood and that all that is needed is to look within understood curriculum. In further work with this “mapping out” exercise, he discovered that teachers and students in engineering had “radically different ideas” about what was troublesome knowledge. Hence, Carmichael pointed out, there was a need for more dialogue between teachers and students. Carmichael walked the audience through several more examples and reached the following conclusion: none of his examples matched the five characteristics of threshold concepts. Rather, one discipline addressed a network of concepts, another addressed pedagogical strategy linked with underpinning concepts, a third, boundary crossing and engagement strategy, and a fourth concerned critical engagement leading to different space.



In short, he challenged the straight-forward conceptualization of uncovering disciplinary threshold concepts by presenting the audience with counter examples. Given the complexity of complex concepts in disciplinary studies, it is perhaps not surprising that not all disciplines fit into neat categories of learning. In some disciplines, concepts are elaborately networked, in others, teachers push to teach students critical, foundational concepts, in others, teachers and students move into liminal space—the space of questioning and creativity—and simply stay there, rather than ‘crossing’ the threshold. Yet underlying this

variety of cognitive processes are a common element—the interaction of teacher and student in the learning process. Communication, relationship-building, attentiveness, and engagement with the subject matter were—it was argued by each speaker—at the core of a student’s struggle with difficult knowledge.

To conclude briefly, both Olsen and Border report that the threshold concept model was intriguing, the quality of the talks engaging, and that both intend to use threshold concepts at their home institutions. Border is integrating the threshold concepts model into a new project at the University of Colorado Boulder, and Olsen is weighing the impact of the model and possible new practices at the Tennessee Teaching and Learning Center. The next biannual Threshold Conference will take place in 2014 at the University of Durham in the United Kingdom.

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Exploring Tensions between English Teachers' Beliefs and Practices in Teaching Writing

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Abstract

This article presents results of a case study examining relationships between instructors' pedagogical beliefs and teaching practices with respect to university writing instruction. The exploration sought to outline the teachers' beliefs about, and classroom practices in, teaching academic writing. Participants included three instructors of English working at Wolaita Sodo University, Ethiopia. Data were collected over a four-month period using successive interviews and observations of instructors' actual classroom practices. From the interviews, it was apparent that teachers' beliefs about teaching the writing process and appropriate writing strategies for enhancing and supporting the development of students' writing skill were constant. In the study, however, teachers' classroom practices did not always correspond to their beliefs. The reasons for a mismatch would seem to be highly complex, but there was evidence to suggest that teachers' ability to teach related to their beliefs was influenced mainly by contextual factors such as class time, students' expectations, teaching the test rather than teaching the subject and focusing on classroom management concerns. Some implications of this study for language teacher education are also discussed.

Keywords: Teacher cognition; teacher beliefs; teacher education; writing instruction; process writing; second language teaching

INTRODUCTION

In the last two decades, the study of teachers' beliefs has received attention from many researchers in the field of language teaching. The relationship between teachers' beliefs and their classroom practices has been one thread of the work. More specifically, researchers have been interested in the extent to which teachers' stated beliefs correspond with what they do in the classroom, and there is evidence that the two do not always coincide (Gebel & Schrier, 2002). Such differences have been viewed as unwanted or negative phenomenon and a handful of studies (e.g., Tayjasanant & Barnard, 2010) have described it using terms such as incongruence, inconsistency, and discrepancy. In this article, I argue for a more positive perspective on such differences, conceptualizing the phenomena as 'tensions', that is, "divergences among different forces or elements in the teacher's understanding of the... subject matter..." (Borg & Phipps, 2009, p. 380). This study specifically explores divergence between what English language teachers 'say' and 'do' in teaching writing. By exploring the reasons for this mismatch, I provide insight into deeper tensions among competing beliefs that teachers hold.

Significant contributions to understanding the relationship between teachers' beliefs and practices have been made in first language (L1) education contexts. English-speaking countries such as the United Kingdom (Phipps & Borg, 2009; Kuzborska, 2011) and a Spanish-speaking country (Lacorte & Canabal, 2005) are examples.. However, studies investigating teachers' cognition in foreign language (FL) contexts have been limited (Borg, 2003, 2006). Further, studies of this type have so far mainly been conducted either in English as a second language (ESL) settings, such as Singapore (Ng & Farrell, 2003) and Hong Kong (Andrews, 2003), or in Western English as a foreign language (EFL) contexts (Borg, 2009), but not very much in non-Western EFL countries, such as Ethiopia. Moreover, very limited studies to date have focused on the relationships between university teachers' theoretical orientations and teaching practices with respect to writing instruction in EFL. Thus, I provide some contextual background to Ethiopian education, especially the status of English.



The Ethiopian education system follows an 8-4 system, that is, eight years of primary education and four years of secondary education. Primary education has two distinctive stages: first cycle (G1-G4) and second cycle (G5-G8). Similarly, secondary education is staged as general secondary (G9 and G10) and preparatory education (G11 and G12). Students who qualify for preparatory education and who fulfill the requirements to apply for university studies are enrolled in universities. English plays an important role in Ethiopian education: It is widely considered an 'intellectual language'. In many regions, starting from late primary school (G7 and G8), English is used as a medium of instruction for all subjects except local languages. Success in higher education usually depends on academic English competence, part of which is competence in English writing. English teachers are required to develop students' academic and professional communicative competence, enabling them to effectively communicate in academic and further professional contexts. By examining the links between personal theories and practices, this study intends to assist teachers to become effective professionals and increase students' achievement in core subject areas.

The Concept of Teachers' Beliefs

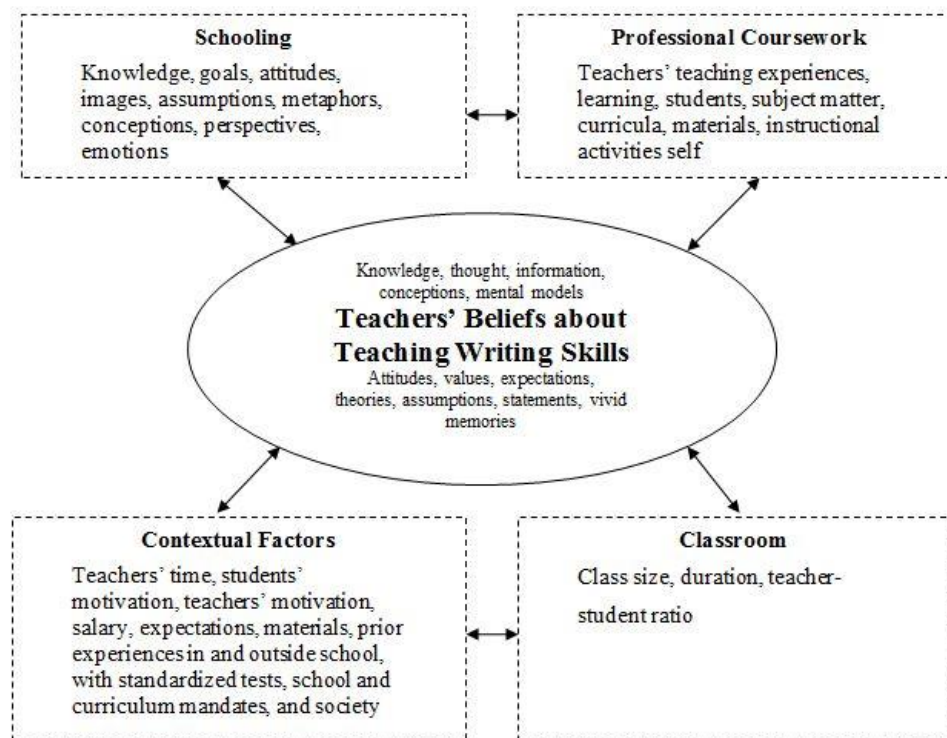
Mansour (2009) argued that beliefs are one of the most difficult concepts to define. Although the educational literature has paid great attention to teachers' beliefs, there is still no clear definition of belief as a term (Savaci-Acikalin, 2009). As Pajares (1992) argued, "the difficulty in studying teachers' beliefs has been caused by definitional problems, poor conceptualizations, and differing understandings of beliefs and belief structures" (p.307). He suggested that researchers need agreement on meaning and conceptualization of belief.

Researchers have defined the term, beliefs, in different ways. For example, Pajares (1992), in his literature review, defined belief as an "individual's judgment of truth or falsity of a proposition, a judgment that can only be inferred from a collective understanding of what human beings say, intend, and do" (p.316). According to Aguirre and Speer (2000), current definitions of teacher beliefs in the educational literature focus on how teachers think about the nature of teaching and

learning. In this context, beliefs are defined as “conceptions” (Thompson, 1992, p. 132), world views, and “mental models” that shape learning and teaching practices (Ernest, 1989, p. 250).

Despite the difficulties related to clearly defining this “messy construct” (Pajares, 1992, p. 307), Kuzborska (2011) proposed that all teachers hold beliefs about their work, their students, their subject matter, and their roles and responsibilities. Borg (2003, 2006) categorized teachers’ educational beliefs within their broader belief systems. In Borg’s view, beliefs can be narrowed and categorized. For example, educational beliefs about the nature of knowledge, perceptions of self and feelings of self-worth, and confidence to perform certain tasks, are categories. Following these recommendations, this study focused specifically on teachers’ educational beliefs about teaching and learning the beliefs teachers have about how English writing skill is taught, and factors influencing the implementation of these beliefs in classroom practice. The term beliefs here refer to teachers’ pedagogic beliefs (Borg 2001), which are related to convictions about language and the teaching and learning of it. These beliefs are manifested in teachers’ approaches, selection of materials, activities, judgments, and behaviors in the classroom.

The researcher adapted the following diagrammatical representation of the conceptual framework of the nature of teachers’ writing instruction beliefs and factors influencing the manifestation of these beliefs in classroom practices.



(Adapted from Borg, 2003)

Figure 1: A model of teachers’ writing instruction beliefs and practices

Several studies have examined relationships between teachers' beliefs and their practices. However, perhaps partly because of the variety of definitions in the literature, relationships between teacher beliefs and practices have been questioned. Some researchers in science and mathematics reported a high degree of agreement between teacher beliefs and the practice of teaching (Aguirre & Speer, 2000; Ernest, 1989; Standen, 2002; Thompson, 1992) while others have identified some inconsistencies (Kynigos & Argyris, 2004; Lfebvre, Deaudelin & Loiselle, 2006; Zembylas, 2005).

Findings from some recent studies (e.g., Savasci-Acikalin, 2009; Mansour, 2008) illustrated that relationships between teacher beliefs and practices were controversial and complex. Results suggest that researchers should question their common assumptions because several factors are believed to contribute to the complexity of these relationships. After a review of research, Borg (2003) commented that factors such as parents, principals' requirements, the school, society, curriculum mandates, classroom and school lay-out, school policies, colleagues, standardized tests and the availability of resources may hinder language teachers' ability to carry out instructional practices reflecting their beliefs. Thus, contextual factors need to be part of any analysis of the relationship between teacher beliefs and practices. Others (e.g., Phipps, 2010; Phipps & Borg, 2007, 2009) have claimed that the dichotomy of beliefs and practices may stem from teachers' professional course work and prior experiences in and outside of school with teaching, learning experiences, students, or their activities.

This study examined the relationship between language teachers' elicited beliefs and their classroom work through the analysis of interview responses and observed teaching practices. From this point forward, the term teachers refer to language instructors, particularly instructors of writing courses at an Ethiopian university.

STUDY DESIGN

In order to gain insights into links between teachers' theoretical orientations toward academic writing instruction and their teaching practices, the study posed the following research questions:

- What beliefs do teachers hold about teaching writing? To what extent are these beliefs internally consistent?
- To what extent are teachers' beliefs about writing instruction congruent with their observed practices?
- What factors may have influenced the teachers' approach not to teach writing in line with their beliefs?

Study Participants

The study lasted one semester (four months) at an Ethiopian university and involved three EFL teachers. Each teacher had been teaching English for about three years at the university at the time of data collection (March to- June 2011). The teachers' English teaching experiences in general (including English teaching at the university) ranged from 3 to 6 years. Each teacher held a university master's degree (M.A.) issued by an Ethiopian university after two academic years of study in postgraduate courses and completion of a master's thesis. Each was qualified in

Teaching English to Speakers of Other Languages (TESOL) with an MA degree in Teaching English as Foreign Language (TEFL). However, none of the teachers had initial, direct training in composition studies, rhetoric or applied linguistics.

Participants were a volunteer sample of three EFL instructors working at the University of Wolaita Sodo, Ethiopia. Ten instructors, out of 30 academic staff members in the department of English, volunteered to participate in the research in response to a solicitation letter circulated by the department head. The researcher purposively selected three instructors who had experience teaching writing, and informed those chosen about the general purposes of the study. Table 1 summarizes the backgrounds of the instructors who volunteered, as well as periods of time when interview data were collected in their four-month EFL courses.

Table 1. Interviews and participants.

Time period	Teacher	Years taught EFL	Years taught writing	Teacher's education (Qualification)	No. of interviews
March-April	T1	20	6	M.A.	4
March-April	T2	10	4	M.A.	4
April-June	T3	7	3	M.A.	4

The teacher in the first row of the table was an Assistant Professor.

Students were first-year undergraduates, most of whom had entered the university directly from preparatory school. All students were required to complete a compulsory two-semester EFL writing course based on their field of study. Further, in university classrooms in the education system of Ethiopia, both English and other subjects are likely to be eclectic in nature.

The Investigation

This study adopted a qualitative case study approach to investigate the relationship between beliefs and actual classroom practices for teaching writing (Borg & Phipps, 2009). Data collection occurred over a period of three months. Sources of data included one scheduled pre-study interview with each of the three teachers, four non-participatory observations of the teachers' classes with pre-lesson and post-lesson interviews, as well as a collection of random samples of students' written work. The initial interview questions were piloted with the help of two different teachers not involved in the actual study and the questions were further refined as a result of this process. The interview questions were designed to elicit information about the teachers' beliefs regarding writing and teaching writing, and about different approaches to teaching writing, including error correction. Other questions were aimed at obtaining information about the teachers' actual teaching practices as well as factors that influenced their choice of approaches and strategies.

The interviews were the primary research tool used to obtain information about teachers' beliefs about teaching writing. Based on a structure of four interviews in a series (Seidman, 1998), four interviews of one hour each were scheduled with each teacher: a pre-study interview to establish

the context of each teacher's experience, a pre-lesson interview to obtain information about the lesson to be implemented and a post-lesson interview to help the teachers reflect on the meaning that the whole experience held for them. All the interviews were audio-recorded and then transcribed in full and coded.

Four classroom non-participatory observations (McDonough & McDonough, 1997) were carried out over a period of three months with each teacher to obtain information about their actual teaching practices. Specific episodes of events observed during the lessons and the accompanying observer's field notes were used to generate discussion topics during post lesson interviews. The audio-recordings of the lesson observations were also transcribed, as were the accompanying observer's field notes. In addition, random samples of students' marked composition scripts were collected and analyzed for information about the ways teachers approached writing errors. These samples of students' written work were triangulated (Miles & Huberman, 1994) with data obtained through the interviews and the lesson observations.

Data Analysis

Data collection and analysis involved a cyclical process, and the analysis of the data already collected aided in the successive stages of data collection. Findings from all the varied sources were validated through a triangulation process. For example, data from the individual teacher's interview, classroom observations and the analysis of students' composition scripts were matched for convergence and divergence between beliefs and practices. Further analyses of the interview data were focused on the discovery of salient themes and patterns using inductive analysis procedures (Bogdan & Biklen, 1992).

In relating the teachers' stated beliefs to observational data, my intent was not to simply confirm or disconfirm stated beliefs in the volunteers' teaching practice. I had expected that there would be occasions when a stated belief was contradicted by practice, perhaps due to constraints. I did not expect a teacher's practice to either always or never match his or her stated beliefs. Rather, this study's aim was to examine the extent to which the teachers' stated beliefs were reflected in their practices.

FINDINGS

To address the three research questions, I discuss the findings of the current study for each of the questions in turn in the sections that follow.

Teachers' Stated Beliefs

During the interviews, the teachers generally revealed their beliefs about teaching writing. All of them stated that many of their beliefs had been built up over their formal training and many years of teaching writing in varying contexts. They believed that the act of writing involved some kind of process and that it takes time and effort to produce.

T1: Writing is an intellectual activity which takes a lot of time for thinking and analyzing.

T2: Writing is a process through which....

T3: Writing involves thinking, creativity and practice...

Although the teachers said that they took a process approach to teaching writing, they also made their own interpretations about how to apply this approach to writing: “I want my students to understand the processes involved in writing a good composition, as opposed to focusing only on the final product in writing” (T1). He said that this involved getting the students “to understand the different stages a composition goes through from brainstorming to planning, drafting, and peer-conferencing/peer-editing to an eventual final draft composition.” “Teaching of writing,” he added, “also incorporates teaching structural features of the language including controlled practice of writing correct grammatical clauses and sentences.” Thus, his beliefs about teaching writing were consistent with deeper, general beliefs about learning and teaching writing as a process.

The three teachers also made many statements that described their existing writing instruction beliefs and practices. One expressed that the act of “writing takes a lot of time for students to think and analyze and also writing can be a means for students to discover new ideas during the writing process. Make students write more than one draft” (T3). He also said he makes writing activities collaborative: “...drafts are exchanged so that students become the readers of each other’s work.” He also said that feedback on students’ writing “should not focus on grammar alone, but also on the contents of writing.” T2 also shared a similar observation: “Help students [to help] one another shape their writing”. He maintained that writing is a communicative as well as a social act: “One does not write for oneself or only for the teacher but to share with others” (T2). He continued, “It is important to show students how the text conforms or does not conform to the reader’s expectations.”

Tensions between Teachers’ Beliefs and Classroom Practices

The analysis of teachers’ beliefs and practices in teaching writing indicated that generally these were aligned. All three teachers tended to adopt a ‘process-approach’ to writing (Ferris & Hedgcock, 2005), namely, planning, drafting, revising and editing, and writing a final text. However, these data also highlighted a number of tensions between the teachers’ stated beliefs and practices, mainly related to core steps of the writing process. I considered tensions related to three core steps of teaching writing—pre-writing, writing, and revision--by drawing on data from all three participants in the study to illustrate these tensions and the reasons for them.

a) Pre-writing activities

The first example of a tension relates to one teacher’s approach to presenting a writing task. His observed approach was to provide a formal explanation of the issues related to the core steps that the writing process involved, and then to administer a model text to mimic or analyze, followed by possible writing topics for students’ writing. For example, in the first observed lesson, he wrote the topic “Essay writing” on the blackboard and discussed the important tips for writing an effective essay. Then he provided copies of a printed essay, one each for two students, and told them to analyze the important elements that the model essay contained. Students read and tried to

highlight the features of the genre. He alleviated their concerns and worked together with the students by identifying the important elements in the essay. Then he assigned each student to write an essay of 500 words for the next class by selecting among the list of titles or topics he had provided them on the blackboard. When he talked about this practice in the post-lesson discussion, though, he explained that it was not something he was satisfied with:

“I didn’t exploit the writing instruction as much as I believe and used to. Today, unfortunately, it is more traditional-teaching. I know it. This encouraged the students to mimic my model. Sorry, I couldn’t help it, you see, [they have to] learn it because there is going to be final exam after a few days... (T1: Post-observation interview 1)”

A key reason for the difference in the ‘before’ and ‘now’ he contrasts here was the time constraint. Previously, he had used varied classroom activities to promote the development of an idea as well as language use, before asking students to write an essay. In this situation, he rushed because he felt he would run out of class time and would not be able to develop the necessary course content before the exam. This approach did not, however, reflect his belief about effective writing instruction, a tension he himself was aware of:

“I know the ideal scenario would be providing students with a source of information to read so that they will use it while writing. Or students could be discussing it. I should have remained in the background during this phase, only providing language support if required, so as not to inhibit students in the production of ideas. But it doesn’t always work like that here. (T1: Post-lesson interview)”

In this example, the tension in the teachers’ work was between ideal and actual ways of teaching writing. He approached essay writing through such a traditional approach not because he felt this was ideal. Rather, he noted that it was due to the contextual factor of constraint in class time that he did not have the students work longer. The teacher also considered that students may lack engagement and motivation if he had used his ideal ways of teaching. He reflected, “Yes, today, for example, I did identify the features in the model essay together with the students. Everybody paid attention then. You see it was more motivating.” (T1: Interview 2).

Thus, his particular belief in the need to motivate and engage students outweighed his general belief in leaving more room for students’ autonomous learning in writing activities: discussing, producing ideas and analyzing by themselves with little intervention or support from their teacher. Although he believed in the value of student-centered writing, he also believed (more strongly it seems) that students learn more when they are engaged cognitively, when their expectations are met, and when they are well motivated.

b) Writing activities

Further evidence of tensions comes from the second and third teachers’ use of controlled grammar activities in class despite doubting their value for acquiring writing skill. During the classroom observation, both the second and third teachers were teaching about ‘revising or avoiding erroneous sentences’. Their teaching approach tended to planned focus-on-form and they were using grammatical terminologies like sentence fragments, comma splice, dangling

modifiers, faulty parallelism, etc. Many of their activities and classroom exercises were controlled corrections of grammatical errors. Despite using these regularly, T2 explained that “I don’t like such exercises, I’m trying to move away from them, I don’t think they’re at all beneficial (T2: Post-observation interview). In reflecting on this tension during an interview, the teacher seemed to become aware that he could have used revision tasks better to engage collaboration in pairs or group work with the students rather than individual grammar revision practices.

“I think...erroneous sentences within written discourse...actually that would be interesting...I never noticed that about my teaching...but the problem is the students are still... That that’s why I was doing it...because maybe the students enjoy and expect to do shorter mechanical exercises, rather than longer texts. They may also be aware that such exercises are features of the tests students have to take. “

This is a clear example of how explicit discussion of teachers’ stated beliefs and actual practices can stimulate an awareness of a tension in their work and a deeper understanding of their own teaching. This teacher realized that while he did not believe in the value of learning to write only with the controlled, individual practice of language structures, he did it because he felt that students do expect it. It is also clear from the teacher’s remark that he was “teaching the test” rather than “teaching the subject”. The teacher revealed that his consideration of that feature of the standardized test (language structures) led his teaching approach away from teaching the subject matter in ways he believed were more effective. However, at this University, he argued, students have learned that semester tests for common courses given across various departments are not written by the same teacher who gives the course. Rather, standardized tests are prepared at the department level.

I found a similar tension in the third teacher’s work. This tension was evident after the first observed lesson in which he used a controlled individual work/exercise from a reference book to practice revision of erroneous sentences. This was, he felt, “a very mechanical exercise.” He also believed that he had used it “because it was presented in the text book”--the most available reference book for students in the university’s library.

These two examples show how contextual factors such as students’ expectations, the teachers’ concerns about poor performance, and the teaching material most available to students can cause tensions between teachers’ beliefs and practices. The examples indicated once again how engaging teachers in talking and thinking about these tensions can raise their awareness of them.

c) Error analysis

Analysis of beliefs and classroom practices of the third teacher stood out as uniquely focused on error correction:

“Every time there is an error, I pick it up. I do error analysis almost every day in the class. I believe that effective composing should begin from constructing correct and grammatical clauses and sentences. (T3: Pre-observation interview)”

In the pre-observation conversation, this teacher expressed that he believed written errors should be treated in a way which provokes students' self-reaction and/or encourages peer correction.

“I believe it would be better eliciting students' errors through peer correction...to give room for each other to react to their errors. (T3: pre-observation interview) “

During his first class observation, however, I found that this reflection about his particular belief (the need for students' error correction and feedback) was not congruent with and seemed not to influence his actual practice. He had come back to the classroom with corrected student papers. The papers were students' written paragraphs, which the teacher had taken with him for home correction. After returning a corrected paper to each student, he chose erroneous sentences from the students' writing and wrote them on a whiteboard. Then he pointed out each error as he discussed it with the class: errors of verb tense, punctuation, sentence structure, diction, meaning and spelling.

In the post-lesson discussion, his explanation for not using peer correction with pair/group work with teacher's correction and presentation of error types to correct students' written errors, was that peer corrections might be time consuming, make it difficult to measure students' learning and give feedback on errors. He also worried that pair/group work might cause classroom management problems:

“Having them working in pairs or groups, asking each other, would be difficult...How would I monitor them? How would I measure them that everybody is aware of his/her errors? ...If they produce something incorrectly it could become fossilized...So I choose to correct them and present. (T3: Post-observation 1)”

Our discussion helped raise his awareness of the tension between his beliefs and his actual practice. In subsequent lessons he consciously decided to try peer evaluation and feedback. He soon found that it actually gave him time in the lesson to monitor students' learning and to think and adjust the students' practice as he wished. This gave him more flexibility in teaching writing. It made him feel more, rather than less confident in editing students' errors, as he had feared might be the case.

DISCUSSION

This study suggests that the beliefs of the three teachers studied were not always aligned with their practices. Table 2 is a composite summary of the aspects of writing instruction examined. The beliefs teachers expressed in relation to these aspects of practice, their observed practice in each case, and the factors teachers referred to when accounting for differences between their beliefs and practices are presented. There were several cases where teachers' professed beliefs about language learning were in strong contrast with practices observed in their lessons. Similar phenomena have been widely reported elsewhere (e.g. Farrell & Kun, 2008; Karavas-Doukas, 1996; Richards et al. 2001).

Table 2. Tensions in writing instruction and beliefs.

Aspect of practice	Stated belief	Observed practice	Reason explained
Pre-writing activities	Reading texts should be used as source of information Generating ideas via student-centered brainstorming and discussion	Imitated text Teacher-oriented presentations, explanations, and modelling	Time constraint Concern for lack of students' motivation and engagement
Writing	Help students in drafting and redrafting Writing should be collaborative	One draft with focus on final product Individual work submitted to the teacher for home checking	Students' resistance and lack of persistence Assessment of students' interest and unwillingness
Revision	Help students to edit text content for grammatical and mechanical features	Almost sidestepped	Students' expectations for assessment
Error correction	Eliciting peer correction should be encouraged	Teacher directly corrects students' errors	Because eliciting is time consuming, teacher's correction is faster Peer correction may create classroom management problems

In this study, factors which led teachers to teach in ways contrary to their stated beliefs were primarily time constraints, their perceptions of students' expectations, classroom management issues, and perceived lack of student motivation. Evidence of such factors and their influence on teachers' work has been noted in previous research (e.g., Andrews, 2003; Li & Walsh, 2011; Burns & Knox, 2005; Mak, 2011). These authors have documented similar findings across contexts in their research studies. I interpreted these findings to mean that features of these contexts are shared with this new Ethiopian EFL context and with previously conducted studies in L1 and/or ESL settings. I argue that one reason for this similarity is shared features of English language teaching in classrooms, irrespective of differences in the setting and national context of English language usage. Although the role of English language teaching and learning varies according to the different national contexts in which it is used (Kachru & Nelson, 2001; Zacharias, 2003), it is commonly held that ELT classrooms are often subjected to various contextual factors beyond the teachers' beliefs, and that these factors influence teachers' instructional choices.

The definition of tension cited earlier is nonspecific, and it covers any kind of divergence between what teachers believe and do. The above table, however, illustrates more specifically the different forms in which tensions can occur. Thus, the teachers' view might be symbolized with the following expressions (with A and B signifying divergent positions): "I believe in A but my

students expect me to do B”; “I believe in A but my students seem to learn better via B”; “I believe in A but the curriculum requires me to do B”; and “I believe in A but my learners are motivated by B”.

The tensions found in this study allow for more specific descriptions. However, they are two-dimensional: Some are tensions that the teachers were aware of and had specific reasons for in their teaching practices. As the observer, I brought other tensions to the teachers’ attention. I drew on emerging elements during interviews with the teachers and used these in making classroom observations. Thus T1, in the pre-writing steps, for example, felt that there was tension between his actual and ideal ways of teaching writing, and that this was due to contextual forces such as time constraints that did not allow students to work longer.

This teacher also considered that his students may lack engagement and motivation for his ideal ways of teaching. In the writing steps, however, T2, for instance, seemed to become aware after the post-observation interview with the observer, that there was a tension between his belief on “collaborative/peer revision” strategies and controlled, individual revision practices. This finding was analyzed from this teacher’s response: “...I never noticed that about my teaching.” Another kind of tension which emerges here then takes the form ‘I believe in A but I also believe in B’, with practice being influenced to a greater extent by whichever of these beliefs is more strongly held.

Though the discussion so far has focused on divergences between the beliefs and practices of the teachers in this study, the above analysis also indicated that while teachers’ practices often did not reflect their stated beliefs about language learning, these beliefs were consistent with deeper, more general beliefs about learning. This study clearly evidenced that teachers’ practices reflected their beliefs that learning is enhanced when learners are engaged cognitively, when their expectations are met, when they are well motivated, and when order, control, and flow of the lessons were maintained. These beliefs clearly exerted a more powerful influence on the teachers’ work in teaching writing than their beliefs about the limited value of leaving more room for students’ autonomous learning in writing activities, student-centered writing, and peer correction of errors.

CONCLUSION

The findings of this study have clear implications for teacher education. I argued that it is not enough for language teacher cognition research to identify differences or tensions between teachers’ beliefs and practices. Rather, studies should also seek to explore, acknowledge and understand the underlying reasons behind such tensions.

Early studies focusing on tensions between thinking and doing in language teaching suggested that tensions provided a potentially powerful and positive source of teacher training (Freeman, 2002), while more recent work found that a “recognition of contradictions in teaching context” is a “driving force” in teachers’ professional development (Golombek & Johnson, 2004, pp. 323-324). I support such claims and suggest that teacher education programmes would do well to consider ways in which participants can be encouraged to explore their beliefs and their current practices, and the links between them. Collaborative exploration, among teacher educators and

teachers, of any tensions which emerge is also desirable. Teacher learning that ensues from such dialogic exploration of teachers' practices and beliefs has, I believe, the potential to be more meaningful and long-lasting. This study sheds some light on the feasibility of such explorations.

The findings of this study disclosed that "teaching the test" rather than "teaching the subject matter" is one source of tension between what teachers believe and do in classrooms. Borg and Al-Busaidi (2012) claimed this as a well-known problem for language teachers. This has a suitable implication for language teachers in general and teachers teaching writing in particular. I suggest that a teacher can develop tests in other ways than those he/she believes that students expect.

The most salient conclusion drawn from this study was the presence of tensions between what teachers believe and do in writing classes in Wolaita Sodo University. Because Wolaita is largely a macrocosm of university conditions in Ethiopia, this conclusion is likely to apply to writing classes at other Ethiopian universities. As this research revealed, writing classrooms are not an ideal place where every teacher can be expected to consistently employ practices that directly reflect his/her beliefs.

The interviews used in this study valid and reliable through pilot-testing the questions. Participants were volunteers and interested in engaging in the interviews and in being observed while teaching in their classrooms. Data were collected and analyzed objectively and carefully. This methodological approach suggests that studies which employ qualitative strategies to explore language teachers' actual practices and beliefs may be more productive than, for example, questionnaires about what teachers do and believe, and in advancing our understanding of complex relationships between these phenomena, because participants have an opportunity to explain their responses.

Yet there are still some limitations. First, the interviews were conducted in one institution, Wolaita Sodo University, and the number of participants was far from enough for a systematic study of the problem. If the investigation were carried out in universities in Ethiopia with more qualified professors who had greater experience in teaching writing, and with more participants, perhaps the study results would be more persuasive. Second, owing to the controversial definition of "teacher beliefs", the interviews, as well as the classroom observations, may have other issues that I failed to address. These limitations were also where I found recommendations for further studies. Firstly, the study can be replicated in another setting. Secondly, if possible, a larger sample could be identified in order to further explore and analyze the phenomena.

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Academics as Teachers: New Approaches to Teaching and Learning and Implications for Professional Development Programmes

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Abstract

This article reviews academics' changing conceptions of and approaches to teaching and learning and how these changes vary according to their professional development, discipline and context. The discussion is structured along these academics' conceptions and approaches and makes recommendations to enhance professional development programmes. A suggestion is made to take an institutional perspective for quality teaching that effectively aligns the university's teaching and learning strategy with teacher training and assessment, recognition and quality assurance.

Keywords: Professional development, teaching beliefs, teaching approaches, teaching development programme, learning transfer.

APPROACHES TO TEACHING AND LEARNING: SHIFTING OVER TIME

The way academics teach at universities make a difference! Although the specific relationship between academics' teaching and students' learning is anything but clear, hardly anybody challenges this assumption. But how do academics teach? And how do they come to develop their teaching conceptions and approaches?

Over the last three decades, there has been a considerable amount of research investigating the range of meanings of teaching as experienced by academics and the intentional nature with which they approach their teaching. Such studies include teachers' beliefs and knowledge (Marcelo, 1987; Calderhead, 1996); conceptions of teaching (what they believe about teaching) and approaches to teaching and learning (how they enhance teaching and learning); and the relations between these research topics (Dall'Alba, 1991; Kember 1998; Marton & Säljö, 1997; Murray & Macdonald, 1997; Norton et al., 2005; Prosser & Trigwell, 1999; Ramsden, 2003; Samuelowicz & Bain, 2001).

The objective of this article is to evidence that academics' teaching approaches and conceptions can change and develop towards a learning-centered approach if the provision of teaching development programmes fit the teachers' particular needs and concerns at the different phases of their professional development as teachers.

This paper reviews recent research on the conceptions of and approaches to teaching and the changes that occur in academics' teaching in different phases of their professional career. It also considers the ways teachers learn and the implications that such evidence have for teachers' professional development. Two statements are made. First, any initial teacher development programme must be comprehensive, and viewed as a transformative process to change teachers' approaches. Second, any measure for quality teaching and learning should effectively align with the university's teaching and learning strategy, particularly relating to teacher training, assessment, recognition and quality assurance.

Teaching beliefs, practices and strategies

All teachers hold personal conceptions of and approaches to teaching resulting from their experiences as students and teachers (Dall'Alba, 1991; Pratt, 1992; Ramsden, 2003; Samuelowicz & Bain, 1992). Studies on teachers' approaches to teaching identify two qualitatively different categories. The 'learning-focused' approach is about teaching as facilitating students' learning and learning as knowledge construction, while the 'content-focused' approach concerns teaching as transmission of knowledge and learning as absorbing the transmitted information (Kember & Kwan, 2000; Prosser & Trigwell, 1997; Trigwell, Prosser & Waterhouse, 1999). Among these, Kember and Kwan (2000) identified four subcategories of teaching: teaching as transmitting information; teaching as making information accessible to students; teaching as meeting learning needs; and teaching as facilitating students to become independent learners. Each of these conceptions is manifested through teacher behaviour such as motivational approaches, teaching strategies, attention to and engagement with students, and assessment practices.

Åkerlind (2005) argues that individual academics experience the world of teaching differently and therefore have different conceptions of it. She states that a teacher-centered focus is seen across the range of studies as constituting a less sophisticated view of teaching than a learner-centered focus, and is regarded as less likely to produce high-quality learning outcomes amongst students. She suggests that teacher-centered approaches and student-centered approaches do not constitute two different categories, but rather that they relate to each other, in the same way as there is a relationship between conceptions of teaching and learning (Åkerlind, 2003).

The debate surrounding the idea of considering whether student-centred and teacher-centered approaches represent two ends of one continuum or whether they are separate categories has also been investigated by Postareff, Lindblom-Ylänne and Nevgi (2008). In their opinion, the latter view emphasises that a student-centered teacher might sometimes use features that are typical of teacher-centered teaching depending on the teaching context. However, a corresponding relationship in the opposite direction is not possible.

Some studies have explored the relationship between teachers' conceptions and student learning (Hanbury, Prosser & Rickinson, 2008; Kember & Gow, 1994; Trigwell, Prosser & Waterhouse, 1999) or focused on the university teachers' experience of change in their understanding of the subject matter (Trigwell et al., 2005). Others have linked the perceptions of the teaching environment or the disciplines with approaches to teaching (Prosser & Trigwell, 1997; Lindblom-Ylänne et al., 2007) and maintain that changes in the teachers' teaching and learning

environment prompt new concerns and changes in teaching practices. Finally, research also investigated the relationship between the teachers' initial training and their approaches to teaching and learning (Gibbs & Coffey, 2004). They all agree that teaching approaches are a manifestation of the teachers' conceptions, practices and beliefs, mainly in interaction with their students but also as a reflection of their attitudes and skills when working with other colleagues, at a particular period of time and given a specific context.

Teachers' educational beliefs also influence and determine their teaching behaviour. According to Marcelo (1987), some teachers experience conflicts between their beliefs and their behaviour in class; consequently, their behaviour does not correspond to their beliefs and vice versa. This view is supported by Samuelowicz and Bain (2001), who claim that teachers have 'ideal' conceptions of teaching and 'working' conceptions of teaching; therefore, even if they believe that student-centred approaches are best, they may not act on this belief. It is likely that during the first years of teaching, educational beliefs and classroom behaviour may conflict. Over time, teachers are likely to strengthen their beliefs, which may also result in an increased consistency with their teaching behaviour. Consistency between beliefs and behaviour are also increased if beliefs are adjusted towards behaviour.

Many studies confirm the idea that changes in teacher beliefs and behaviour and student learning approaches occur over time (Cilliers & Herman, 2010; Hanbury, Prosser & Rickinson, 2008; Ho, 2000). Ho (2000) and Kember and Kwan (2000) conclude that changes in teacher's conceptions of teaching are necessary before changes in teacher behaviour towards more student oriented approaches can be expected.

Norton et al. (2005) maintain that teaching intentions are a compromise between teachers' conceptions of teaching and their academic and social contexts. In accordance to this, Eley (2006) adds that the link between teachers' conceptions and teaching practice is tenuous and that the relationship is one of espoused conceptions and reported approaches. Kane et al. (2002) caution that the connection between teachers' beliefs and their actions must be viewed as tentative since few studies provide sufficient evidence of changes in classroom practice.

In her study of the changes in teaching throughout academics' professional careers at two universities in Catalonia (Spain), Feixas (2010) focused on the effects of teacher preparation on pedagogic understandings and orientation, as well as on changes in teachers' approaches to and conceptions of teaching and learning. Results suggest that some teachers were clearly and systematically either learning or content focused but most teachers reported a hybrid approach to teaching. Termed "dissonant profiles" (Postareff, Katajavuoria, Lindblom-Ylänne & Trigwell, 2008), it means that most profiles consisted of combinations of learning and content focused approaches or conceptions and varied depending on the disciplines. Additionally, evidence of a shift from teachers' to learners' needs was seen in those teachers with considerable pedagogical training (such as an initial training programme), in those with previous teaching experience (e.g., in secondary education), and in those teachers of social sciences rather than other disciplines.

To sum up, all these studies report the idea that change is a process; it is developmental and occurs over time. Practice changes before beliefs do and that it is a strictly personal experience conditioned by the teachers' academic and social context.

Teacher development

Teachers' evolving approaches to teaching may be aligned with the stages of their professional development, from less sophisticated conceptions and strategies to more sophisticated ones. According to Kugel (1993), Nyquist and Sprague (1998) and Robertson (1999), university teacher development has a sequential and progressive structure. The theoretical perspective in Kugel's work assumes that knowing the content and presenting it in a fluid way is sufficient for good teaching (what do I want to teach or what can I teach?). The theoretical perspective adopted by Nyquist and Sprague complements this picture with additional skills and improved teaching strategies (how can I teach better?). The third perspective (in Robertson's study) presupposes prior competences and understands teaching as a process aimed at changing teaching conceptions and helping students to develop their own rationale (what do students need to learn?).

Kugel's development schema (1993) describes five stages in the development of a university teacher and explores what happens within each stage and in the transition process from one stage to the next. Stages 1 - 3 comprise a single phase in which academics work on different aspects of teaching or presenting the material, while in the second phase, there is a shift in the focus from teachers' teaching towards students' learning. Similarly, Nyquist and Sprague's scheme (1998) underlines a shift in the development of beginning teachers from the emphasis on the self (stage 1) to the skills (stage 2) to the student (stage 3). Changes in the development of beginning teachers are described according to four dimensions: concerns, discourse level, relationship with students and relationship with authority. They conceive the development as occurring in a three-stage process.

While Kugel (1993) and Nyquist and Sprague (1998) focus on how new university teachers go through phases of development and their implications for staff development, Robertson (1999) analyses each of the phases of the development process of professor-as-teacher. According to Robertson (1999), there are three different perspectives regarding how academics view their work as teachers, which are organised as they usually appear in the teachers' development process: egocentrism (focused on the teacher), aliocentrism (focused on the student) and systemocentrism (focused on the student and the teacher). They are analysed from the following dimensions: content, process, students, teachers and context.

In an attempt to shed new light, Feixas (2010) identified three different approaches to developing as a university teacher and suggested that these are hierarchical with each phase building on the achievement of the previous. The phases are: a) a focus on self and surviving the first teaching semester which leads to improving content knowledge or what to teach, b) a focus on improving the repertoire of strategies in order to gain experience in how to teach more effectively, and c) a focus on reflecting on what works and why in order to effectively facilitate student learning.

The previously espoused theory (Feixas, 2010; Kugel, 1993; Nyquist & Sprague, 1998; Robertson, 1999) states that academics' approaches to teaching and learning develop in pedagogical phases and gradually shift from a focus on self, to a focus on teaching until teachers adopt the perspective of the students' learning approach. This suggests a progression in teachers' beliefs in their approaches to teaching and learning and an improvement in the sophistication of teaching strategies, leading to deeper engagement with students. Teachers' beliefs are also

affected by personal and contextual factors related to their professional pathway (e.g., including experiences with various teaching models, teaching working culture, own teaching philosophy, pedagogical training). Feixas (2004) concludes that it is impossible to claim that all teachers can reach a teaching approach focused on the students' learning, unless they undergo extensive pedagogical training. Teaching preparation courses do have an influence on teaching conceptions and behaviour but there are many other variables to be controlled for to support efficient changes in teaching practices.

IMPLICATIONS FOR TEACHING DEVELOPMENT PROGRAMMES

The literature presented allows many suggestions for improving teaching development programmes. In the following section, some considerations on the pedagogical design of the teachers' training programme

are provided, including how academics learn better to become effective teachers and the impact these programmes have in changing teachers' approaches and practices. An institutional perspective for quality teaching should effectively align the university's teaching and learning strategy with teachers' training, teachers' assessment, recognition and quality assurance.

Teaching development programmes

At present, most universities offer professional development activities designed for new staff, and for other academics wishing to develop advanced expertise and leadership skills in university teaching roles. Through a combination of seminars and practical activities such as peer review of teaching and reflective portfolios, participants gain insight into principles and theories of effective university teaching. These insights can be used to inform their teaching practice.

In addition to their primary goal of developing teachers' repertoire of skills in teaching (course planning, teaching, assessing), professional development programmes promote the scholarship of teaching and learning (Boyer, 1990) and aim "to infuse teaching with scholarly qualities in order to enhance learning" (Brew & Ginns, 2008, p. 535). Teacher development programmes encourage good teaching practices designed to promote good student learning and engagement. Good teaching and good learning are linked to the students' experience of what teachers do in classrooms. As Ramsden (2003) points out, "we cannot teach better unless we are able to see what we are doing from their point of view" (p.84). It is important therefore that professional development programs focus on approaches that foster 'scholarly teaching' and 'excellent teaching' (Healy, 2003).

The post-experience programmes may also be complemented with other dynamic measures such as specific teaching staff development activities including systematic mentoring, observation-based video feedback, action research and work-based learning to enable participants to develop subject-specific pedagogical practices. Additionally, they promote the creation and consolidation of professional communities of practice to support the application of disciplinary and pedagogical knowledge and skills among peers.

How academics learn to become effective teachers

No matter the age at which it occurs, human learning is based on a common set of principles. While adults have more life experience to draw from than younger learners and are often clearer about what they want to learn and why it is important, the means by which the learning occurs is remarkably similar: Learning is experience plus reflection (Handy, 2006), and the ability to acquire new ideas from experience and retain them in the memory (Kandel, 2007). Learning is organic, sometimes incidental, not highly structured; it only partly happens in the formal setting or classroom, it is more or less intentional and driven by the learner. Learning also happens informally while working (Marsick & Watkins, 1990).

According to Vermunt and Endedijk's (2011) review, teachers employ a great variety of learning activities, regulate their learning in different ways and report a great variety in learning outcomes. This may include different kinds of teaching practices, beliefs about learning and teaching, behavioural intentions and affective states. Teachers learn from their own practical experience (Eraut, 2007; Kolb, 1984) and enhance their learning in the workplace in collaboration with their peers and students.

Deep approaches to learning have to be considered in the design of teachers' training to enhance academics' learning processes. There are some implications in doing so. First, teaching and learning methods should support the aims and intended outcomes of the programme. Learning methods used in professional development should mirror the methods teachers are expected to use with their students as closely as possible. Second, teaching should make the structure of the topic explicit, and should elicit active responses, confront and eradicate misconceptions, and build on what teachers already know. Finally, teaching should promote deep rather than surface learning.

Teachers develop through a cycle of continuing reflection and through conventional forms of staff development (e.g., workshops and conferences). They also learn through informal forms of training (including peer review, reading, sharing within their communities of practice). These forms of learning should be enhanced by capturing what teachers learn from these activities and by exploring in their own teaching context how they might test and apply what they have learnt. Series of opportunities to reflect with colleagues from different disciplines can contribute to enhancing the scholarship of teaching and learning.

In sum, staff development units should expose teachers to challenging experiences, support them to reflect on their learning of such experiences, and help them to apply and test their learning.

Sharing practical experiences and ideas both within the workplace and within the larger community can lead to better understanding of various teaching contexts.

Development programme impact

As seen above, research into teachers' learning over the last decades has repeatedly shown the existence of qualitatively different pedagogical models in the way teachers learn. However, empirical evidence of the effectiveness of these models is rare (Grossman, 2005). For many years, academics have learnt to become teachers by applying the models they had experienced, thus their teaching approach has been content-centered rather than student-focused. New developments and research reported above require changes to the way teachers teach and think.

Academics must begin to think about teaching and learning differently, in a scholarly way (Ramsden, 2003) in order to challenge their long-held conceptions. McAlpine and Weston (2000) and Norton et al. (2005) coincide in that fundamental changes to the quality of university teaching can only come about by changing teachers' underlying conceptions of teaching and learning.

Knight (2006) states that teaching training programmes which are based on conceptual change models can be effective in shifting teachers' beliefs from a teacher-centred to a more student-focused approach. These changed conceptions then have the potential to move students' learning from surface approaches to approaches which focus on understanding and conceptualisation of new realities which are more likely to promote deep learning (Hanbury et al., 2008).

In the past, systematic impact evaluation of educational development has not been common or very superficial (Kreber & Brook, 2001). Evaluation was rather descriptive than evaluative (Gilbert & Gibbs, 1998) and usually restricted to immediate event evaluation of participants' satisfaction. However, in recent years, research on the impact of pedagogical training is reporting gains in changing teachers' behaviour and conceptions (Gibbs & Coffey, 2004; Lindblom-Ylänne et al., 2006; Postareff, Lindblom-Ylänne & Nevgi, 2007; Stes, Clement & Van Petegem, 2007; Stes, Min-Leliveld, Gijbels & Van Petegem, 2010).

Professional development programmes can lead to changed conceptions of teaching with consequential changes in teaching practice and student approaches to learning over time (Ho, 2000; Stes et al., 2007). Stes et al. (2007), Postareff et al. (2007) and Feixas (2010) also confirm that in general academics who participate in extended pedagogical training which challenges conceptions of teaching demonstrate positive self-efficacy beliefs considerably more than those who take short courses who can remain uncertain about their understandings of teaching and their abilities.

Still, while there appears to be tentative evidences that professional development programmes can lead to changes, conclusions from research have to be drawn with caution. In fact, learning is a complex and challenging business that takes place in different ways, in different contexts. Many factors encourage or inhibit learning and these will vary from learner to learner, depending upon purpose and environment. A study of the impact of pedagogical training into the classroom can be approached differently according to the objective. Kirkpatrick's (1998) evaluation model essentially measures reaction, learning, application and impact whereas Holton, Bates and Ruona (2000) explore a model diagnosing the system of factors influencing learning transfer.

In the context of higher education, Feixas and Zellweger (2010) found that factors influencing learning transfer from teachers' development programmes can be classified into those related to the training's design, to the individual teacher and to the workplace context. More specifically, individual factors relate to motivation, self-efficacy and performance expectations to transfer. Contextual factors consider the resources and opportunities of the learning environment, peer support, supervisor support, students' feedback, the workplace teaching and learning culture and resistances to change. Assessing learning transfer from a holistic perspective can shed new light into the arguments supporting pedagogical training for university teachers.

CONCLUSION

Although there is a diverse range of disciplines, institutions, and individuals, several major conclusions can be drawn from the studies reviewed. First, academics approach teaching either as the transmission of content to students or as the development of conceptual understanding in students. Second, academics focus either primarily on their teaching strategies, or on the students and their learning and development process. Third academics' practical teaching experiences and their beliefs influence each other mutually. More sophisticated teaching beliefs emerge from experience and reflection as academics create their own teaching approaches over time; even though the development of teaching approaches can be depicted as a succession of stages, not all academics end up at the highest stage.

Since fundamental changes to the quality of teaching and learning are unlikely to happen without changes to lecturers' conception of teaching, teaching development programmes have to address academics' conceptions of teaching and learning. Changes in their approaches can only take place in extensive training programmes.

Additionally, it is argued that teaching development programmes for academics have to be linked closer to the developmental phase of their teaching beliefs and behaviour. For instance, novice teachers have different training needs and expect training programmes to address their attitudes and skills differently than mid-career academics. A number of methods are suitable for designing powerful teaching development programmes by combining formal and informal phases. Research on teaching development programmes indicates major factors that should be considered when designing effective programmes, including personal (motivation, self-efficacy) and contextual factors (peer support, supervisors' support, opportunities and resources to transfer and a learning culture supportive of change).

As a final reflection, it is strongly suggested that professional development for university teachers should be embedded in an institutional framework for quality teaching or within a university's teaching and learning strategy. Programmes should also be aligned to teachers' professional evaluation, recognition and reward of good teaching. Teaching quality has to be assured and enhanced by, in part, the evidences collected and reported from students' feedback on teaching. The desired institutional learning culture should assure coherence among these diverse institutional programmes aiming at supporting teachers, students, and the enhancement of professional practice. An institutional developmental framework with opportunities for formal and informal training is a suggested approach which will likely engage academic staff in actively pursuing their own personal learning.

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