



visible knowledge project

a collaborative investigation of learning, inquiry, and technology



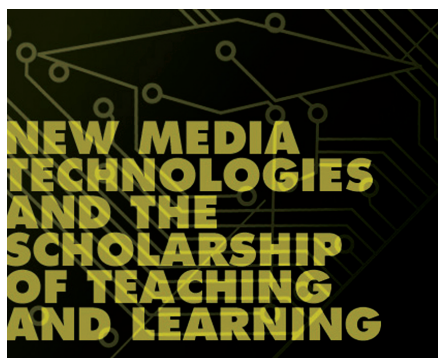
The Difference that Inquiry Makes:

A Collaborative Case Study of Technology and Learning,
from the Visible Knowledge Project.

Edited By Randy Bass & Bret Eynon



Center for New Designs in Learning and Scholarship



"The Difference that Inquiry Makes: A Collaborative Case Study of Technology and Learning, from the Visible Knowledge Project," *edited by Randy Bass and Bret Eynon*

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From *The Difference that Inquiry Makes: A Collaborative Case Study on Technology and Learning*, from the Visible Knowledge Project¹, edited by Randy Bass and Bret Eynon

What happens if we shift the focus of our teaching and learning innovations from a single classroom to an entire institution? What new kinds of questions and possibilities emerge? Can an entire college break boundaries, moving from a focus on “what teachers teach” to a focus on “what students learn?” Can we think differently about student learning if we create structures that enable thousands of students to use new media tools to examine their learning across courses, disciplines, and semesters? What is possible if, as John Tagg has suggested, we stretch our frameworks, moving from course-centered to student-centered frameworks for encouraging and examining student learning?²

Those practicing the scholarship of teaching and learning are rarely able to ask such questions. Certainly within VKP, most participants by necessity studied their individual practice in their own

About VKP: In all, more than seventy faculty from twenty-two institutions participated in the Visible Knowledge Project over five years. Participating campuses included five research universities (Vanderbilt University, the University of Alabama, Georgetown University, the University of Southern California, Washington State University, and the Massachusetts Institute of Technology), four comprehensive public universities (Pennsylvania’s Millersville University, California State University (CSU)--Monterey Bay, CSU Sacramento, Ohio’s Youngstown State University, and participants from several four-year colleges in the City University of New York system, including City College, Lehman, and Baruch), and three community colleges (two from CUNY--Borough of Manhattan Community College and LaGuardia Community College, and California’s Cerritos College). In addition to campus-based teams, a number of independent scholars participated from a half dozen other institutions, such as Arizona State and Lehigh University. The project began in June 2000 and concluded in October 2005. We engaged in several methods for online collaboration to supplement our annual institutes, including an adaptation of the digital poster-tool created by Knowledge Media Lab (Carnegie Foundation), asynchronous discussion, and web-conferencing. The VKP galleries and archives (<https://digitalcommons.georgetown.edu/blogs/vkp/>) provide a wealth of background information, including lists of participants, regular newsletters, and reports and essays by participants, as well as a number of related resources and meta-analyses. For this article, the author gratefully acknowledges the students whose work is cited here. All students whose work is included have granted the author permission to use the material.

This article and the project it represents were made possible by our funders (including the Title V program and the Fund for Innovation in Post Secondary Education at the US Department of Education) and the efforts of many at LaGuardia, led by President Gail O. Mellow, Vice President Peter Katopes and former VP John Bihn. Dean Paul Arcario skillfully guides the ePortfolio initiative and so much more. Our hardworking faculty, ePortfolio staff and IT staff are incredible, and our students are fascinating and inspiring. The thoughtful students I’ve quoted deserve particular mention—particularly Rezwana Islam, Omar Garcia Navarro, and Ying Chow. Denis Bejar and Roslyn Orgel played essential roles in data analysis, working with our Institutional Research Office. The lessons I’ve learned working with Randy Bass over the past fifteen years are embedded across this article and throughout our work at LaGuardia. I am pleased to gratefully acknowledge my debt to each and all.

² John Tagg, “Double-Loop Learning in Higher Education,” *Change Magazine* (July/August 2007): 39-40.

classrooms. While I valued (and sometimes envied) their classroom projects, I found myself in a different situation. As an academic dean at LaGuardia Community College at City University of New York (CUNY) and the director of a robust Center for Teaching and Learning, I helped guide a series of teaching and learning innovations taking place on a broad, institutional scale. I was—and continue to be—privileged to work in an institution blessed with a tradition of innovation, a critical mass of creative and engaged faculty, and an executive leadership that values innovation and deep learning. This gave me a relatively rare opportunity to address VKP's questions on a broad, institution-wide scale.

Over the course of VKP's five years, I helped to lead three inter-related initiatives at LaGuardia that in some meaningful way embodied the salient themes and issues of VKP:

1. *Designed for Learning*: Beginning in June of 2000, we organized a series of year-long faculty development seminars that highlighted faculty design of carefully-scaffolded inquiry learning projects, engaging students with Web-based primary sources. Over 150 LaGuardia faculty have taken part, and the program is still going strong. For examples, see <http://www.laguardia.cuny.edu/ctl/dfi/default.htm> and <http://www.laguardia.cuny.edu/ctl/dfi/sampler/default.htm>.
2. *Electronic Student Portfolios or ePortfolio*: LaGuardia has created one of the country's largest ePortfolio initiatives. Since 2002, more than 17,000 LaGuardia students have built ePortfolios. Guided by the VKP focus on constructivist approaches to student multimedia authoring, the LaGuardia ePortfolio speaks directly to the research theme of the power and importance of embodied pedagogy, pedagogy that links the cognitive to the affective, the academic to the personal. See <http://www.eportfolio.lagcc.cuny.edu/>.
3. *In Transit*: The LaGuardia Journal on Teaching and Learning: In 2006 we used a VKP mini-grant to launch *In Transit*, a campus-based SoTL journal, with VKP participant Gail Green-Anderson as the editor, joined by Michele Piso. As of Fall 2008, we've just published our fourth issue, which focuses on the theme of "Work," and we're beginning work on the fifth issue, which will focus on the theme of Reflection. More than seventy-five LaGuardia faculty have written SoTL articles for *In Transit*, many of them on topics related to VKP themes. See <http://www.laguardia.edu/ctl/journal/>.

While all of these efforts are worthy of attention, in this space I'd like to focus on the second initiative, the ePortfolio project, to draw out the connection to VKP and to discuss what we've learned about learning. Our ePortfolio seeks to enhance student success while advancing an institutional inquiry into student learning, manifested both in individual faculty inquiries (see Heidi Johnson's recent *In Transit* article about the issues of class and students' approach to their ePortfolios, at <http://www.laguardia.edu/ctl/journal/v3/pdf/Johnsen.pdf>) and in the College's holistic approach to institutional assessment. In this article, I'll focus on the ways that ePortfolio supports embodied pedagogy and situated learning, using multimedia authoring tools to build student engagement in learning. In particular, I want to report on our efforts to address these questions:

If, as a College, we support the broad use of student-authored multimedia projects that help students examine their learning across courses and semesters, how does this process affect students? What can we say about the ways the ePortfolio process

affects the student learning experience? And can we demonstrate its impact on student learning in terms that a large, public institution such as CUNY can recognize?

First, because this is a college-wide project, I need to provide some background on LaGuardia, which has several features that were relatively unusual in the VKP network. An open-access community college based in Queens, New York, LaGuardia is one of seventeen campuses of CUNY, the nation's largest urban higher education institution. Initially founded in 1971 as a small, experimental community college, LaGuardia now enrolls thirteen- to fourteen thousand academic students each year, plus another forty thousand continuing education students. Liberal Arts is LaGuardia's largest major, but most of our students are enrolled in one of our many professional majors such as Nursing, Paralegal Assistant, Physical Therapy Assistant, Network Systems Administration, etc. New majors are appearing all of the time, such as Education, Forensic Science, Engineering, and Environmental Science.³

As Queens has emerged as New York's leading immigrant destination—the Lower East Side of the twenty-first century—LaGuardia's student population has taken on a unique and exciting cast. Each year, roughly 60 to 70 percent of our student body is foreign-born, coming from more than 160 different countries around the world, speaking (at last count) 119 different primary languages. Our student body is almost two-thirds female, predominantly first generation college-goers, overwhelmingly poor and working class. The combination of cultures, stories, journeys and changes embodied by these students make them an inspiring and fascinating group to work with. At the same time, our students confront a range of intimidating academic challenges. The educational backgrounds and levels of preparation of LaGuardia students are wildly uneven. In any given year, 80 to 90 percent of our entering class needs some type of basic skills course (ESL, reading, writing, or mathematics) before they're ready to do college-level academic work. Teaching at LaGuardia (where faculty carry a nine-course annual workload) is an intense combination of daunting and exhilarating.⁴

It is in this context that ePortfolio has become a signature feature of a LaGuardia education. In 2007-08, slightly more than eight thousand of LaGuardia's academic students actively worked on their ePortfolios. Students begin their ePortfolio early in their tenure at the college and continue building and re-building until they graduate. The portfolio process is both longitudinal—helping students connect their learning across courses and semesters—and college-wide, ultimately aiming to engage all LaGuardia students.

As is common in ePortfolios nationwide, the core of a LaGuardia ePortfolio is a student's collection of coursework, drawn from a range of disciplines, assembled across semesters. The "My Classes and Projects" area presents research papers, poetry, spreadsheets, lab reports, PowerPoint presentations and artwork, as well as video and audio-recorded speeches and performances. Students are encouraged to include written reflections on their learning, related to particular assignments and courses as a whole. They also examine their processes of learning and change in two other sections of the ePortfolio: first, the "About Me" section, where they assemble multimedia life narratives; and second, the "Educational Goals" section, which focuses more specifically on their educational futures. Nearly all ePortfolios

3 No extensive history of LaGuardia has been published. For a brief overview, see Joanne Reitano, "LaGuardia Community College: A Case Study in Academic Audacity," *Academe* (July/August 2002), <http://www.aaup.org/AAUP/pubsres/academe/2002/JA/Feat/Reit.htm>.

4 The LaGuardia Community College 2008 Institutional Profile, assembled by the LaGuardia Office of Institutional Research, provides the most recent data on LaGuardia's enrollment and demographics. Available at http://www.lagcc.cuny.edu/facts/facts03/PDFs_profile/Complete.pdf.

include a resume. Most students use photographs and visual art prolifically throughout their ePortfolios; some also utilize music, video, and Flash animations.⁵

The college offers students a choice of HTML templates to start their ePortfolios, and trains them in how to edit and adapt those templates. Using Netscape Composer, Dreamweaver, and other authoring programs, students transform the look and feel of their ePortfolios to express their own individual personas. Some students with advanced technology skills start from scratch and create their own designs. Providing students with this degree of flexibility is relatively rare in the ePortfolio field. Some of the most advanced LaGuardia students become ePortfolio Consultants, hired to help other students build their ePortfolios and to develop new templates for others to use.

LaGuardia's work with ePortfolio has been shaped in important ways by VKP and by our long-term collaboration with Randy Bass. While many ePortfolio projects nationwide are focused most centrally on ePortfolio as a tool for assessment, LaGuardia has sought to focus equal attention on ePortfolio as a tool for transforming students' learning experience. In guiding the ePortfolio initiative, we've been highly conscious of the ways in which it links constructivist pedagogy and the use of multimedia authoring tools. As students select samples of their classwork and create Web-based self-portraits, they engage in a sustained, self-guided inquiry into their own learning. In the process, students not only create evidence that faculty can use as part of their inquiry into learning; perhaps as importantly, students themselves become engaged in the examination of learning. Reflecting on their growth and change, they take a new stance towards their learning, explicitly connecting past, present, and future in rich, thoughtful hypertext-based autobiographies.

The multimedia element of the ePortfolio is critical in allowing students to incorporate visual creativity in their self-portraits. Unlike ePortfolios at many colleges, LaGuardia ePortfolios are visually diverse and dramatic, a riot of color and design. (For sample ePortfolios, see <http://www.eportfolio.lagcc.cuny.edu/scholars/sp07.html>.) Giving students tools to craft the look and feel of their ePortfolios' has a broad and significant impact. LaGuardia English professor J. Elizabeth Clark has argued that our students are inventing "a new digital rhetoric," using text, images, music and video to project evolving identities that synthesize their rich cultural heritage with their new urban experiences— hypermedia contributions to a new global literature. Reviewing his students' ePortfolios, LaGuardia Fine Arts professor Michael Rodriguez argues that the combination of different types of media in the ePortfolio helps students take themselves and their learning more seriously. Rodriguez prompts faculty in his program to encourage students to dialogue across different genres, including the written and the visual. "The ePortfolio prompts my students to move forward in expressing their creativity across different media, in art and language," he explains. In his view, this cognitive and affective synthesis "leads to new discoveries: educational, artistic, intellectual and personal."⁶

5 The ePortfolio field is large and fast changing. One way to get a sense of the field is at Helen Barrett's abundant site, <http://electronicportfolios.org/>. *The Handbook of Research on ePortfolios*, ed. Ali Jafari and Catherine Kaufman (Hershey: IGI Global, 2006) is also useful, as is the Web site of The Inter/National Coalition for Electronic Portfolio Research, <http://ncepr.org/>. The forthcoming I/NCEPR report *Electronic Portfolios 2.0: Emergent Research on Implementation and Impact*, ed. Barbara Cambridge, Darrell Cambridge, and Kathleen B. Yancey (Sterling, VA: Stylus, 2009) will advance discussion in the field.

6 Clark and Rodriguez perspectives shared during discussion of visual creativity in LaGuardia's ePortfolio Leadership Colloquium (November 12, 2006).

Let's focus on three individual ePortfolios to get a better sense of what they're like and the nature of the ePortfolio experience. We'll start with Rezwana Islam, a Liberal Arts major who starts her self-description this way: "I was born and raised in Bangladesh, a country which is poor when it comes to financial wealth but rich when it comes to culture and tradition, a country where I breathed and opened my eyes for the first time . . ." Rezwana's ePortfolio is filled with images of flowers and water, her family, and her native country, including a photo of a sailboat with a triangular red sail, journeying in a vast green sea. (See http://www.eportfolio.lagcc.cuny.edu/scholars/doc_fa07/Rezwana.Islam/index.html.) After describing her experience growing up and then moving to New York, she remembers her arrival at LaGuardia:

Entering this college was a major step for me. It introduced me to a whole different environment. Studying and working among diverse students with different racial backgrounds has improved my interpersonal skills. It has taught me that each culture has different ideas and ways of thinking. I came to realize that sometimes an image can represent some thing without saying anything. When I first came to LaGuardia, I had no idea about college life. I was worried about how I was going to fit in. The first things I noticed were all the flags on the ceiling of the building. When I saw the flag of my country, I had a feeling that I would be able to blend in. That's how my journey at LaGuardia began.

Rezwana discusses in her ePortfolio how difficult student life was for her, at first, because of her difficulties becoming fluent in the English language. Her ePortfolio documents her steady progression through the college, and her growing interest in a career in education. "I would love to start off my professional career by being an elementary school teacher," she explains. "We spend eight hours a day in our workplace so it is very essential to be satisfied with our job at the end of the day. As a teacher, I won't be making enough money as a lawyer, a pharmacist, or a doctor make but I will be doing something that I love."

Rezwana traces her growth through her courses such as Writing Through Literature, Introduction to Computers, Introduction to Anthropology, Fundamentals of Biology I, African American fiction, Western Civilization II, and Mathematics in Early Education. One of her courses was the Liberal Arts Seminar, meant to serve as a kind of interdisciplinary capstone experience where students "apply knowledge and critical strategies developed in other courses to significant contemporary and historical issues." In Rezwana's class, her professor focused on issues of culture, language, religion and prejudice, asking students to study the internment of Japanese-Americans in World War II, the Mexican Day of the Dead, and an article, "Crushing the Pistachio," exploring Senegalese traditions about body decoration and eroticism, which Rezwana described as "the hardest article I ever read." Another assignment made the connection for her between themes of the course and her own life:

For this assignment I had to read two articles. One of which talks about secular humanism and another one speaks about religion . . . I couldn't ignore some facts of secular humanism that I liked. But, at the end I tried to stick with religion.

Rezwana's ePortfolio includes a substantial reflection on the experience of building her ePortfolio. It's worth listening to her at some length, to hear the different issues she identifies in analyzing the impact of the experience:

Creating an ePortfolio was not only challenging but also a rewarding experience for me. Through the development of my ePortfolio not only have I improved my technological skills but I have learned how to express my self as a hard working student. Being a shy girl and not able to open up was always an issue for me. This ePortfolio helped me to see a new me who was unaware of her creative side...

This ePortfolio shaped me up as a dedicated student and helped me to be a better organized person. My experience with ePortfolio at LaGuardia has made me see the potential I have as a student and what I want to accomplish in my life. I feel like I was living under a rock up until I was introduced to ePortfolio . . .

Working on the About Me page was interesting because I got to think about myself the way I never thought before. Writing about Educational Goals also helped me think how far I am from reaching my goal. Having all my assignments under the Classes and Projects section was the most important thing while developing my ePortfolio. It is a great way to see the things that I have accomplished, assignments that I have done as well as classes that I have taken during my time at LaGuardia.

After successfully completing my ePortfolio, I was given a great opportunity of presenting my ePortfolio at the ePortfolio student showcase. Even though I was scared and wanted to flee from there at the beginning of my presentation that experience brought me a lifetime pleasure that I never felt in my entire student life since it was the first time I have talked and shared my experience in front of respected professors...

Our second student, Omar Garcia Navarro, grew up outside of Mexico City and now lives in the Bronx. Omar studied Civil Engineering at LaGuardia, and his ePortfolio has a clean, bright quality: http://www.eportfolio.lagcc.cuny.edu/scholars/doc_sp06/eP_sp06/omar.garcia-navarro/index.html. Its most memorable image is a striking portrait of Omar in profile. While his ePortfolio doesn't include any photos of Mexico, Omar paints a vivid word portrait of his native country on his About Me page:

Even though Mexico is poor, I have good memories of my country. Mexico is a rich and a beautiful land. I remember the rich smell of its earth, the beauty of its beaches and mountains, the majesty of its nature, its vast geography, the simplicity of its towns, and its deep history. I think fondly on the times that I used to ride the Metro in the city and the dilapidated buses we use to commute into the city. I have good memories of the times when I used to run around on the playground of my school. I will always be touched by the love of my family, my friends, the town and the people that saw me grow up. Mexico is a land of hard working people that sweat from sunrise to sunset, so their family can have food on their tables. Though it was a daily struggle to survive, my recollections of my home are rich and beautiful. Thanks to these memories, I will always remember where I come from, where I am heading to, and no matter where I end up I will always feel proud of being Mexican.

Omar's Classes and Projects section presents work from a range of courses, including his Basic Writing course, his Introduction to Sociology course, and his Critical Thinking course. This last class, he says in his reflection "gave me the tools that allowed me to be a more positive person." The most important thing he took from the class was a way of thinking, an approach to analyzing issues: "This class showed me that by better analyzing problems, we can make better and more productive decisions." As a final project, he was asked to create a fictional interview with someone he felt exemplified critical thinking. His choice was "one of the greatest people in history, Mahatma Gandhi."

I was challenged to imagine every single answer, but the results were magnificent. This assignment has taught me that a man's worth is not determined by his looks, his fame or for how much money he has, but by his knowledge and confidence in himself. Gandhi has taught me that it is important to keep my head up and not let anybody step over me . . . Maybe in the future I could follow this man's steps.

Sharing this work with others was important to Omar. He summed up his ePortfolio experience this way:

I decided to create my electronic portfolio because it is a new and more efficient way to present my work. This way, a lot more people will be able to look at it. This portfolio will give me more opportunities to present projects from the classes I am taking in college.

Since technology is developing faster and faster everyday, there is no doubt that in the future everything will be computerized. I thought this would be a great opportunity to practice and get my portfolio done while I am in college.

I have to thank the people that encouraged me to participate in the elaboration of my portfolio . . . The creation of my first portfolio was quite a challenge for me because I did not have much knowledge of how to use some of the programs. Thanks to the creators of the portfolio I have been able to complete it. They showed me how to create a folder, edit and insert pictures that represent my assignments . . . Now, I feel more comfortable using the programs that make this magnificent electronic portfolio possible . . .

I would like to invite those students that have not created a portfolio, to give themselves the opportunity to do it. It is a fun experience where you will be able to track your improvement in your work in college. This portfolio will make you more competent and give you the chance to have better opportunities in the future.

The last student we'll meet is Ying Chow, a Human Services major who grew up in Hong Kong and moved to Queens in 2000, when she was fifteen. At first glance, Ying Chow's ePortfolio (see http://www.eportfolio.lagcc.cuny.edu/scholars/doc_sp08/Ying.Chow/index.html) has a colorful, upbeat quality. It's filled with purples, pinks, and greens, and includes a photograph of Ying Chow holding her pet dog. Yet Ying Chow's story includes some difficult periods. When she first came to New York, Ying Chow was very unhappy, and she dropped out of high school before graduation. After bouncing around the city for a while, she decided to go back and get a GED, and then came to LaGuardia. But being a college student was difficult at first, too:

[LaGuardia] is a good school but since I dropped out of high school for a while, I had a very difficult time at my first semester. I could not understand the lecture, and the workload seemed heavy to me. I could not sit still and concentrate in class. It was a big challenge for me to overcome the problem that I had.

I was a wild teen, I did so many things that teenagers usually would go through and some things they are not supposed to do. I never feel ashamed if you ask me what I did because this is what I have been through and this is what makes me who I am now. It's all part of my past experience. I changed a lot within and wanted to be a role model for teenagers . . . This is what I love to do the most and talk the most about; I love to make negative things become positive.

After a couple of semesters, Ying Chow figured out how college worked. Part of what happened was that she became increasingly clear that her purpose was to become a mental health professional.

To achieve my goals, I have to make sure I am prepared well enough to get it. First, I need the education to build my professionalism. Besides education, I have to feed myself with lots of different knowledge, especially the knowledge that will benefit my clients. The knowledge I need to assist the clients to make the right decision. After I feed myself with the education and knowledge about psychology, I will look for opportunity to go out to

the field and gain experiences. I would love to see what it is really like to be a counseling psychologist. I understand everything comes from practice . . .

Looking back at her classes, one that Ying Chow singles out is Principles of Human Development. For this class, she shares her work for an assignment that she calls "delightful," because it prompted her to think about her interactions with her friends, and what happened when she tried to help others. "It got me thinking about the self-characteristics I have to be counselor and what I should be aware of when helping others. This assignment helped me deepen my understanding about being a counselor, how to work with a client, and know that words could be helpful and hurtful. When I talk to a person, I have to think before I talk . . ."

Another class Ying Chow spotlighted was Developmental Psychology, which she found "difficult at the beginning." The course seemed abstract at first: "I was little bit confused and lost." But after a while, things started to make sense to her. "I learned about theorists like Piaget, Freud, Erickson. . . I found that the most interesting for me was Erickson's theory on the developmental stage. He explained how children grow in certain stages; what conflicts they confront in certain stages and how children psychologically think about themselves and others."

My favorite part of this class was the child custody role play project we did. The professor divided the class in three groups. One group was composed of "lawyers" who had to defend the father, who was a responsible, respected citizen but mentally challenged. The other group was composed of "lawyers" who had to defend the mother, who was an alcoholic, in jail after the child was born, but had filthy-rich parents who supported her. . . The last group was the group of judges. [We] had to pick one of the theorists and use the theory to defend the mother or the father . . . Both teams had to debate each other. Everyone acted like he/she was really a "lawyer" in the classroom.

I have never done anything like this before; it was a fun and special experience for me. Some teammates did not prepare well, however and the father's team showed evidence of the mother as a substance-abuser. We lost the custody. If I could do this assignment again, I would want to be the team leader and I would make sure everyone is doing his/her part. I would also show evidence to debate the father. I learned so much from this project; I used the theories to apply to my life and I found it very helpful...

Ying Chow's overall reflection adds to our understanding of the ePortfolio experience and the ways it affects LaGuardia students:

I could not have done my ePortfolio without the help and support of my professors, student technology mentors and classmates. Student technology mentors were very helpful. They were patient with me and with all other students. I really want to say thanks. . . . To have a nice ePortfolio needs lots of time. I put lots of effort in it. My classmates and friends were my main support when I was doing my ePortfolio; they knew that I really wanted to have a nice ePortfolio so I could get a scholarship. Every time I was tired and became lazy doing my ePortfolio, they showed me support and encouraged me. Without them, I would not the have a nice ePortfolio I have now . . .

The ePortfolio really helps me improve my critical thinking, writing and communication skills and most of all my computer skills. Learning all the digital tools help me become a better students because it is very helpful for the future. I can do better assignments due to my new knowledge. I also do lots of presentation and computer work for class and this ePortfolio helps me prepare for the future.

I will continue to work on my ePortfolio. I would add more reflection and things that are useful for my future. ePortfolio is my showcase, it is a place I can show every aspect of my life and my work in school to show others my academic achievement. I will continue to make it more professional. I will use my ePortfolio in my job interview and show professors, senior college, or master and PhD schools about my work.

The part I enjoyed the most in creating my ePortfolio is the About Me page. I got to talk about myself and share my goals with others. Besides sharing with others, I got to explore myself more by thinking about all the questions I had about my life. I was able to explore and be sure of my goals once again. The most challenging part I found was writing reflection on the assignments. I love to write reflection, though; it helps me think about what I learned and what I did not do well on in the past. It also improves my critical thinking so I will not make the same mistake again.

Ying Chow, Omar, and Rezwana are all second language speakers of English, and they have to work hard to express themselves in English. Nevertheless, looking across their stories and their ePortfolios, we can see the ways that the ePortfolio experience manifests adaptive, embodied and situated learning pedagogies. The process of reflection across semesters helps students surface and focus on intermediate steps in their learning, the ways that their participation in individual activities begins to add up to a larger whole. While they are learning about disciplines, the ways to be, for example, a psychologist or human services professional, at some more fundamental level the mastery LaGuardia students must first develop is what it means to be a college student. Ying Chow's ePortfolio offers a rich example of a student using her ePortfolio to become more conscious of the stages in her growth. Meanwhile, the affective element of all three stories jumps out at us, as does the ways academic learning and lived experience weave together in the ePortfolio, an elegant double helix shaping students evolving sense of identity and personal destiny. It is not as though the ePortfolio experience does this by itself, distinct from the rest of their learning. Rather, ePortfolio builds upon and weaves together elements that might otherwise seem distinct. It makes the on-going interaction of different elements of learning more visible to students themselves, and to others. And the importance of audience cannot be underestimated. The recursive collaboration that takes place in the process of ePortfolio construction—and the presentation of their work to classmates and special college wide events—prefigures in significant ways the presentation of the ePortfolio on the Web for viewing by broad audiences.

These three students may be exceptional in the explicit clarity with which they articulate their perspectives on the ePortfolio experience. But their insights resonate with what students say in other settings, including classes and ePortfolio showcases. In the spring of 2008, a group of LaGuardia students took part in a focus group that was centered on the kinds of help they received when they built their ePortfolios. In the process of analyzing that issue, they commented on what the ePortfolio experience meant to them⁷:

- *This is my first semester at LaGuardia, and I was doing my ePortfolio for my English class 101 and I really liked it. You know, ePortfolios, I never heard of that until I came here. And I thought it was really cutting edge. It's better than just a resume because a resume is just a piece of paper—it's boring, it's been around forever. With this, you send your ePortfolio to a company and they get to see a lot more of your personality, your background, what you hope to achieve, your goals and all that.*

7 Focus group interview conducted by Bret Eynon and Paul Arcario, (June 5, 2008).

- *I took this course with ePortfolio and it was pretty good because it made me look deep into my soul to see what I had accomplished and what I need to work on, what are my strengths and weaknesses, and so forth. So, I was able to think about my experience and that helped me plan what I want to be.*
- *Going back and looking at an assignment I did two years ago was difficult in some ways. But in the end, it was, it was interesting to realize I really did that . . . I really did that. It was interesting in a good way.*
- *First time I did it; it was incredible. I learned a lot about—not just about the career, but also about myself. It really made me look a lot deeper. . . .*
- *I think it's good because my parents are in Sri Lanka so they need to see my progress in the USA. I can upload the ePortfolio so they can download that and see my assignments, my classes, what are the classes I'm taking right now. When I tell them my major is business management, they can't really think about that course because they don't have background. So, when I have pictures and assignments, course descriptions, they can get a rough idea about those concepts. And, I think it's a good opportunity for us to reflect to ourselves about our work and everything.*
- *It definitely put everything into perspective regarding this is my degree I'm going for, this is what I want to accomplish. It made me more organized with my goals and what I want. It made me more confident for the future. . . .*
- *Last week this thing happened to me, I was talking to my cousin in my own country, I was chatting and I just brought it up to her. She says, "Send me your resume and those things." I went to Blackboard and I copied the link and just gave it to her. And she viewed it, and she was like, "Wow, can you make one for me?" She didn't know how I make it. She just says, "Send me the information so I can make it."*
- *If somebody asked me "What did you do in the laboratory? What did you learn in your education? What did you do?" When I go back to my country, somebody can ask me "What did you do in the US?" This is the only thing I can show them, "This is what I have done. These are my grades, these are my projects, assignments . . ." They can see everything. It's me. This is the best thing that I saw through the ePortfolio. . . . Also, my personality has been improved. Now, I have a good personality because I can show these assignments; these are my skills, these are my abilities. So, I have more confidence through this ePortfolio.*

The ePortfolio helps LaGuardia students make a direct and powerful connection between their classroom learning and the rest of their changing lives. The process of reviewing their learning across semesters is revealing—"It was interesting to realize I really did that. . . . I really did that"—prompting them to consider the ways they're growing and changing. The ePortfolio process asks them to connect their learning to their conceptions of themselves—what one student calls their "personality" and what we might discuss in terms of identity. In their portfolios, many students highlight their struggles to overcome economic hardship, language barriers, and the process of figuring out their place in a complex new culture. From the ePortfolios, we can see that college presents a multifaceted learning opportunity; students not only take classes that help them learn about the world in academic terms; they also engage with a richly diverse collection of students in the classes and the hallways. Many students comment on the ways that being part of LaGuardia's diversity makes them feel at home and helps them learn how to deal with students very different from themselves.

The ePortfolio itself is a process of social or situated learning. As is evidenced in these quotes, students are highly conscious about the fact that their ePortfolios are a ways of presenting themselves, as learners, to a broader audience. “When I go back to my country,” one student explains, “somebody can ask me ‘What did you do in the US?’ This is the only thing I can show them. ‘This is what I have done. These are my grades, these are my projects, assignments. . . .’ They can see everything. It’s me. This is the best thing that I saw through the ePortfolio.” The data we’ve gathered shows that students are highly positive about the idea of sharing their ePortfolios with potential employers and transfer schools; interestingly, they are most enthusiastic about “showing my ePortfolio to my family,” giving this potential audience the highest ranking of all. A thoughtful and articulate student born in Mexico, Angelica Serrano articulated what it meant to her to publish an ePortfolio that incorporated her work and her evolving vision of her life in America:

Publishing my work and my reflections on my ePortfolio changed the way I think about my writing. I wrote a reflective essay for my ePortfolio. I knew that my essay would be read not only by my professor, but by a much broader audience. I couldn’t be so facile; now my life, my self-perception and my goals would be revealed to everyone.⁸

For Angelica, going public with her story reinforced the need to think carefully about what she wanted to say—now she couldn’t be “so facile.” For her, publishing her story underscored the importance not only of what she said and wrote—but also the importance of what she did, the importance of her life, her choices she made about what classes to take, how to learn, how to conduct herself and shape her life. The situated quality of the learning, its connection to an audience, reinforced its embodied quality. And vice-versa: its embodied qualities, the fact that Angelica’s learning connected to her sense of herself, made it all the more important that she think carefully about her audience and what she wanted them to learn from her self-narrative.

Student writings, interviews, and the examination of individual student ePortfolios all help us understand how ePortfolio reshapes the student learning experience with a complex combination of embodied pedagogy and situated learning. The process is particularly rich for students who build several iterations of their ePortfolios, which highlights for students the intermediate stages of their own learning. Drawing on the power of multimedia and personal narrative, recursive use of ePortfolio prompts students to expand their focus from individual courses to a broader educational process. To the extent this is happening on a broad scale at LaGuardia, how is it affecting student learning outcomes? What kinds of quantitative evidence can we find? Is this process having an impact on standard learning outcomes prioritized by large public higher education institutions?

Quantitative Evidence of ePortfolio’s Impact on Student Learning

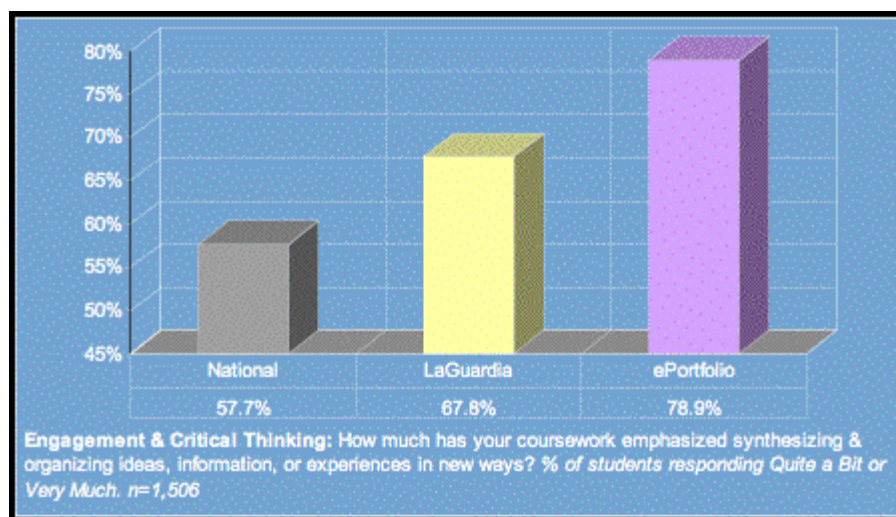
Data gathered and analyzed by LaGuardia’s Office of Institutional Research can support this aspect of our examination of ePortfolio’s impact. One key instrument used at LaGuardia is the Community College Survey of Student Engagement (CCSSE). For the past several years, LaGuardia has used the CCSSE to provide a nuanced yet quantifiable examination of the processes of student learning. Based on the acclaimed National Survey of Student Engagement (NSSE) used at baccalaureate colleges, the CCSSE spotlights behaviors that have been shown to generate student success as learners – such as critical thinking, contact with faculty, engagement in classroom conversation, collaboration with other students, etc.—and allows colleges to examine whether they are structuring the student experience to support these kinds of engagement.

⁸ Angelica Serrano, presentation to Queens Borough President Helen Marshall (May 16, 2005).

More than three-hundred community colleges nationwide used the CCSSE in 2008.⁹

Backed by an extensive literature, the CCSSE allows us to gather information on the experiences of ePortfolio students in a form that can be quantified and compared to the experiences of other LaGuardia students, and to the experiences of community college students nationwide. For example, on one question, students use a four point scale, in which 1 is "Not at All" and 4 is "Very Much," to respond to a question that reads: "How much has your experience in the coursework at this college contributed to your knowledge, skills, and personal development in using computing and information technology?" Nationwide, 58.9% of community college students answer "Quite A Bit" or "Very Much." College wide, 62.1% of LaGuardia students answer "Quite A Bit" or Very Much. This modest gain reflects in part LaGuardia's work, in the Designed for Learning program, to help faculty effectively integrate new technologies. Yet for students in ePortfolio courses, the number is considerably higher: 73.4% of ePortfolio students answer "Quite A Bit" or "Very Much."¹⁰

To some extent, this is predictable. Faculty are integrating ePortfolio into their courses, and students are gaining technology skills. What about other issues? Let's look at this question that focuses on critical thinking: "How much has your coursework emphasized synthesizing and organizing ideas, information or experiences in new ways?"



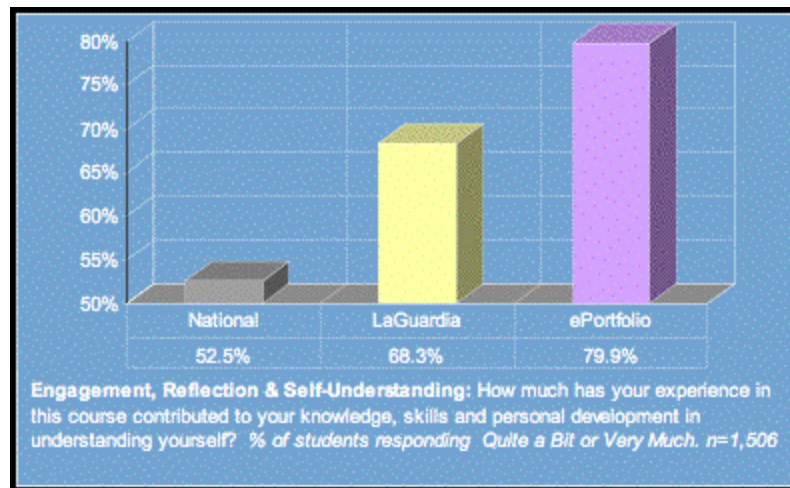
⁹ Additional information on CCSSE is available at <http://www.ccsse.org>. LaGuardia's use of the CCSSE data around ePortfolio was commended in the 2005 and 2006 CCSSE annual reports, available at this site. LaGuardia's overall CCSSE scores are collected by the Office of Institutional Research and made available at http://www.lagcc.cuny.edu/facts/institutional_research.aspx.

¹⁰ CCSSE data for ePortfolio courses in the 2006-07 academic year, provided and analyzed by the LaGuardia Office of Institutional Research in response to queries from the LaGuardia Center for Teaching and Learning. CCSSE national scores from the 2007 report, made available on the CCSSE website.

Here, LaGuardia norms are higher above national norms—but ePortfolio norms are significantly advanced compared to the college as a whole. Nationwide, 57.7% of community college students answer “Quite A Bit” or “Very Much.” College-wide, 67.8% of LaGuardia students answer “Quite A Bit” or “Very Much.” This is a substantial gain, reflecting in part LaGuardia’s sustained effort, through Critical Thinking Across the Curriculum and other Center for Teaching & Learning programs, to help faculty help students think about synthesis and critical perspectives. Yet for students in ePortfolio courses, the number is even higher: 78.9% of these students answer “Quite A Bit” or “Very Much.” This data suggests that the ePortfolio experience is helping students engage in higher order thinking, the kind of thinking nearly all faculty hope to cultivate in students.

The CCSSE offers a wealth of data, far too much to be comprehensively reviewed in this space. Suffice it to say that ePortfolio students are also much more likely to respond positively on questions about collaboration, writing, and effort focused on learning. Let me just offer one more specific

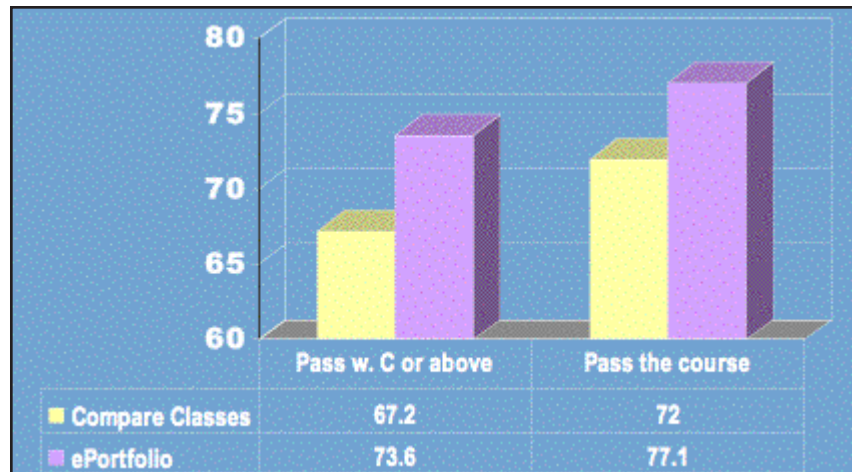
question: “How much has your experience in this course contributed to your knowledge, skills, and personal development in understanding yourself?” Here the gaps among national, LaGuardia, and ePortfolio responses are even more striking.



Nationwide, 52.5% of community college students answer “Quite A Bit” or “Very Much.” College-wide, 68.3% of LaGuardia students answer “Quite A Bit” or “Very Much.” For students in ePortfolio courses, the number is higher yet: 79.9% of these students answer “Quite A Bit” or “Very Much.” Asked about whether their classroom experience was helping them rethink their “personalities” or identities, nearly 80 percent of students in ePortfolio-intensive courses said it was, more than twenty-five percentage points higher than the national norm. The combination of gains in technology, higher order thinking, and self-understanding form a consistent pattern, where students with ePortfolio experience are well in advance of both national and college norms.

If the ePortfolio is having this kind of impact on student engagement, does it translate into enhanced student learning outcomes? The data generated by the LaGuardia Office of Institutional Research on this question is also consistent. Using substantial samples, the College has examined the pass rates of students enrolled in ePortfolio courses compared to the pass rates of students enrolled in non-ePortfolio sections of the same courses.

The data shows that, in every semester that has been examined, ePortfolio students are significantly more likely to pass their courses than non-ePortfolio students. Here is an example from 2007¹¹:



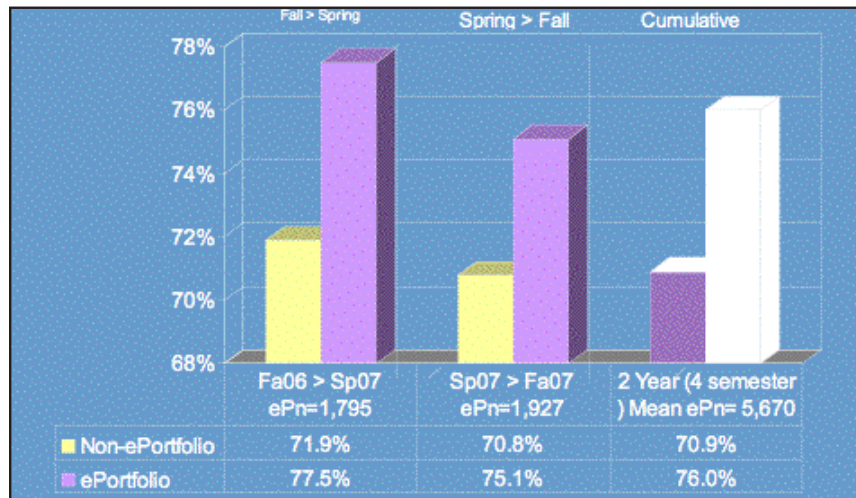
In ePortfolio courses, the pass rate is 77.1 percent; in comparison courses, sections of the same courses where ePortfolio is not being used, the pass rate is 72 percent. For a high pass—a C or above, the pass rate in ePortfolio sections is 73.6 percent; in non-ePortfolio sections of the same courses, the pass rate is 67.2 percent. In this most basic, faculty-driven assessment of student learning, faculty consistently indicate that students in their ePortfolio courses are more likely to achieve success.

Finally, LaGuardia's data on student retention shows a similar pattern. Retention is a major issue in community colleges nationwide, and LaGuardia is no exception. Knowing that retention is the key to improving graduation, the College is undertaking a wide range of initiatives designed to address this issue. For ePortfolio, LaGuardia's Office of Institutional Research has periodically examined the next-semester return rates of students enrolled in ePortfolio courses compared to students enrolled in non-ePortfolio sections of the same courses.

In every semester that has been examined as of this writing, college data demonstrates that ePortfolio students are significantly more likely to return than non-ePortfolio students. For example, 77.5 percent of students enrolled in ePortfolio courses in the Fall '06 semester re-enrolled in Spring '07. For students who were not enrolled in ePortfolio sections, the comparable figure was 71.9. The same pattern holds true from Spring semester to Fall, a stretch when retention almost always declines: 75.1 percent of students enrolled in ePortfolio courses in the Spring '07 semester re-enrolled in Fall '07. For students who were not enrolled in ePortfolio sections, the comparable figure was 70.8.

¹¹ Pass rate data for ePortfolio and comparison courses in the 2006-07 academic year provided and analyzed by the LaGuardia Office of Institutional Research in response to queries from the LaGuardia Center for Teaching and Learning.

Across four semesters, looking at an ePortfolio sample of more than five thousand students, the average return rate for ePortfolio students was 76.0. For non-ePortfolio students, the comparable figure was 70.9 percent.¹²



It is rare that educational innovations can demonstrate such substantial gains on indicators such as pass rates and retention. The fact that this pattern has recurred across multiple semesters, with large numbers of students, adds to their significance. The correlation of this outcomes data with the engagement data gathered with CCSSE and the testimony of students themselves presents a striking picture. It has helped ensure sustained funding for the initiative. It has helped LaGuardia win major awards in its field, including the 2006 Metropolitan Life Community College Excellence Award and the 2007 Bellwether Award for Instructional Innovation, presented by the Community College Futures Assembly. And in April 2008, when LaGuardia held the Making Connections Conference on ePortfolio, Integrative Learning and Assessment, it attracted more than six hundred participants from seventy colleges and universities, coming from thirty states and five different countries.¹³

¹² Retention rate data for ePortfolio and comparison data from the 2006-07 academic year, provided and analyzed by the LaGuardia Office of Institutional Research in response to queries from the LaGuardia Center for Teaching and Learning.

¹³ For information on LaGuardia's April 2008 conference, see <http://www.eportfolio.lagcc.cuny.edu/conference/>. An article by the keynote speaker, Kathleen B. Yancey, is available in this issue of Academic Commons, at <http://www.academic-commons.org/commons/essay/making-common-cause-electronic-portfolios>. An edited transcript of one session, a "Roundtable Conversation on the Future of ePortfolio," is also available at <http://www.academiccommons.org/commons/essay/future-eportfolio-roundtable>.

Conclusion

EPortfolio at LaGuardia is in many ways a work in progress. We are looking at ways to make our software more fluid and interactive, incorporating the social networking functions offered by Web 2.0. More importantly, as a faculty, we are only now starting to pay careful attention to examining student learning across semesters. Our ePortfolio-based program assessment process is growing in momentum and sophistication. And at the same time, faculty seminars involving three dozen faculty are developing the sophisticated pedagogy needed to enhance ePortfolio as a tool for integrative learning experiences. Meanwhile, we are also working to strengthen our effort to analyze the impact and significance of ePortfolio on students and the institution. An emerging research agenda would include: the relationship between ePortfolio use and faculty pedagogy; the role of peer instruction in

ePortfolio learning; comparison between LaGuardia's ePortfolio effort and programs at other colleges; and fine-grained examinations of the impact of discipline, ethnicity, age, gender, and other factors on the ePortfolio experience.¹⁴

While there is much yet to be done, we can nonetheless see, from even this preliminary review, that the impact of the ePortfolio experience on LaGuardia students is profound. The process of examining their own learning across semesters and creating digital self-portraits of themselves as learners manifests many of the qualities of embodied and situated learning pedagogy. As a sustained, recursive process, stretching the focus of learning across semesters, it helps LaGuardia students engage and succeed as students and come to new understandings of themselves as learners and professionals. Using multimedia tools that permit them to share visually rich and compelling portfolios with others around the world, they connect what they're learning in their courses to the rest of their lives: work, family, culture, change. In the process, they engage multiple learning dimensions, notably including the affective. Their awareness of the public, visible nature of their presentation adds depth and significance to the experience, helping them see themselves and their stories as meaningful and significant to a broader world. The impact of the sustained ePortfolio experience goes well beyond improving technology skills, or even pass rates and retention rates. At some broader level it demonstrates the ways that a broad and sustained effort toward embodied and situated learning can combine to help students develop as thinkers and doers, with a new sense of themselves and their significance in a complex and ever more digital world.

¹⁴ Paul Arcario and Bret Eynon are completing an article on peer instruction at LaGuardia, including a section on the ePortfolio consultants, who aid students in building their ePortfolios. The 2009 issue of *In Transit: The LaGuardia Journal on Teaching and Learning* (due out in Fall 2009), thematically focused on Reflection, will include a number of articles on the use of reflection in ePortfolio pedagogy. See <http://www.laguardia.edu/ctl/journal/>.