The university of the future: a student-centred university

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Abstract

Learning is always student-centred, in the sense that it must build upon the student's prior experiences, expectations, and needs. But our universities have clung to the practice of one-way knowledge transfer, which has been revealed as nonsensical in an era of information explosion, multimedia, globalization, and rapidly changing lives. The university of the future should not continue this failed approach, nor should it simply cater to students as distracted customers of the information bazaar. Instead, it must find ways to engage students in meaningful inquiry, centering on students by encouraging them not to center on themselves. This presentation examines the challenge of creating a student-centred university through three interrelated questions: What is inquiry? How can we connect learning and life? and How can we foster integrative learning in the university? It uses the *inquiry cycle* as a lens for examining student learning that is connected to community and life.
The university of the future: a student-centred university

Research on university students of today has shown that they are smarter (Flynn), better educated (Berliner & Biddle; Marable), more professionally-oriented, older, more female, more non-white, more non-English speaking, get too little sleep (Carskadon), use the Internet instead of print sources, but trust print more (Healy), focus too much on grades. Add to this the fact that students of today are immersed in a rapidly-changing, multimedia environment with multiple distractions, and it is no surprise to hear calls for a more student-centred university.

Learning is always student-centred, in the sense that it must build upon the student's prior experiences, expectations, and needs. But our universities have clung to the practice of one-way knowledge transfer, which has been revealed as nonsensical in an era of information explosion, multimedia, globalization, and rapidly changing lives.

The university of the future should not continue this failed approach, nor should it simply cater to students as distracted customers of the information bazaar. Creating a truly student-centred university is usually interpreted to mean using an array of appropriate media for teaching and learning, responding to diverse interests and backgrounds, and encouraging active learning. But beyond that, the university must find ways to engage students in meaningful inquiry. As we see through examples in the paper, education needs to center on students by encouraging them not to center on themselves.

What is inquiry?

Inquiry-based learning is often described as a philosophical and pedagogical response to the changing needs of the information age, but its roots are much deeper. It assumes that all learning begins with the learner. That is, what people know and what they want to learn are not just constraints on what can be taught; they are the very foundation for learning. This idea appears in the earliest writings on education, including Plato/Socrates in the West and Confucius in the East, but is more commonly traced back to Rousseau and Pestalozzi. Its fullest articulation can be found in the writings of John Dewey, whose wisdom derived in large part from his ability to see the unity across the social work of Jane Addams, the schools work of Ella Flagg Young, and the pragmatist philosophy being developed by Charles Sanders Peirce and William James.

Dewey further saw how mental life and the physical were mutually constituted. This goes
beyond Juvenal's *mens sana in corpore sano*, to say that the aspects of the world that are meaningful to us are those which we construct, while at the same time we are products of the physical and social worlds we inhabit. A word such as "inhabit" is too weak; for Dewey, we are part and parcel of a *situation*. This descriptive account of human life leads to a conception of learning as a search for meaning; action in the world merges with thought as a process of art: "To feel the meaning of what one is doing, and to rejoice in that meaning; to unite in one concurrent fact the unfolding of the inner life and the ordered development of material conditions--that is art" (Dewey, 1906).

*Instincts of the learner*

Thus, curriculum should be defined neither as a set of skills to be mastered nor as a set of concepts to be learned, as we typically attempt to do in formal education today. This now dominant approach represents a misunderstanding of how people actually learn; at its best it cannot work. Instead, Dewey (1900/1915, pp. 42-44) argues that we need to build curriculum around the impulses (or instincts) of the learner. These are the available resources for the school, and underlie the cycle of inquiry:

- Social instinct–conversation, personal intercourse, and communication;
- Instinct of making–the constructive impulse;
- Instinct of investigation–doing things and watching to see what happens;
- Expressive impulse–the desire to extract meaning from experience.

Dewey saw these four impulses as the natural resources, or the uninvested capital of education, out of which active learning grows. If people are to understand and participate fully in the complex world in which they live, they need to have opportunities to engage with challenging problems, to learn through hands-on investigations, to have supportive experiences, to articulate their ideas to others, and to explore a variety of resources in multiple media.

Lucy Sprague Mitchell, a leader of progressive education, extended the work of both Addams and Dewey (Smith, 2000). In New York, in 1931, she started what was later known as the Cooperative School for Teachers, which exemplified a commitment to collaboration and inquiry. She saw the need for both children and teachers to develop a scientific attitude towards work and life:

> To us this means an attitude of eager, alert observations, a constant questioning of old procedure in the light of new observations; and use of the world as well as of books and source materials; an experimental openmindedness (Mitchell in Antler, 1987, p. 309)

The expression of these ideas in the formal systems of modern education are limited, but they have a continuing presence. They exist in calls for science education reform (Minstrell & van Zee, 2000; Shavelson & Towne, 2002), in the promotion of arts education, in the best of technology-enhanced learning, and in calls for integrative learning. The Boyer Commission on Educating Undergraduates in the Research University (1998) has called for their incorporation into tertiary education. They become an imperative in community-based learning and in meeting the needs of underserved students.
Situation

For Dewey (1938/1991), *situation* is not something we enter into, nor does it exist independent of inquiry. It is a dialectical situation of which we are participants, not spectators. We change a problematic situation and are changed in turn through our actions. In his classic reflex arc paper, Dewey (1896/1972) shows how under this view, conventional distinctions between organism and environment, stimulus and response, body and mind, or cause and effect need to be reconsidered. Bentley (1941) goes further to show that even the distinction between “knower” and the “known” relies on an incomplete understanding of situation, positing the knower as separate from the environment. This theory is articulated further in Dewey’s major works (e.g., Dewey & Bentley, 1949). Indeed, Dewey’s definition of *inquiry* uses his concept of situation to provide a descriptive account of how we survive in the world:

Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole (Dewey, 1938/1991, p. 108).

Indeterminate situations are those in which a person finds conflict between current needs and realities. The indeterminacy can range from feeling cold to being puzzled about an historical event. That feeling of indeterminacy is then the driving force of inquiry, causing the individual to put on a coat in the former case or to make a trip to a library, in the latter. In each case, the inquirer seeks to establish a unified whole, one that replaces the indeterminacy with a unity. It is important to note that for Dewey, inquiry is not a purely mental act, separate from action. Putting on a coat can be as much an instance of "directed transformation" as is reading a book. In fact, it is the integration of mind and body in action that constitutes the transformative aspect of inquiry.

It is also important to note that this account is descriptive, not prescriptive. That is, Dewey does not argue that we should transform indeterminate situations, or that a good way to help people learn or participate with others is to have them do so. Instead, the “controlled or directed transformation” of indeterminate situations is simply what we do as purposive organisms. Learning is our capacity to reflect upon that transformation and to realize that we can achieve a *unified whole* when faced with similar situations in the future. In that sense, *inquiry-based learning* is not a method or an option to consider for teaching and learning; instead, it is what happens when people do learn.

The emphasis in Dewey’s definition of inquiry and his use of *situation* is on transformation, on remaking the world along with ourselves. Because situations often include interactions with others, inquiry typically involves collaborative practices within geographically defined communities. The usual categories (teacher/student, technology/concept, knowledge/skill) are replaced with a need to understand the process of transformation: What means are employed to transform an indeterminate situation? What are the varied roles played by tools, ideas, and people in inquiry? How does an inquirer evaluate the unity of a situation? How do multiple inquirers coordinate their activities? How do individual experiences and needs coordinate with those of the community?

For Dewey, Bentley, Addams, Horton, and others involved with this educational praxis,
the problems of education were not located in what we teach or how we teach, but rather in the breakdown of connections between individual and community, between formal learning and lived experience, and between the means and ends of problem solving. From this perspective, the situation set up within formal education is often so far removed from the situation of life outside that learning has no meaning and remains in what Dewey calls a “water-tight compartment” (1938, p. 48).

The Inquiry Cycle

Drawing from Dewey's four impulses of the learner in *The School and Society*, the stages of reflective action from *How We Think*, and the fundamental idea that learning begins with the curiosity of the learner, we can envision a spiral path of inquiry: asking questions, investigating solutions, creating, discussing our discoveries and experiences, and reflecting on our new-found knowledge, and asking new questions (Bruce & Bishop, 2002). Each step in this process naturally leads to the next: inspiring new questions, investigations, and opportunities for authentic "teachable moments." Each question leads to an exploration, which in turn leads to more questions to investigate (Bruce & Davidson, 1996).

We need to interpret the cycle as suggestive, neither the sole, nor the complete, characterization of inquiry-based learning. Inquiry rarely proceeds in a simple, linear fashion. The five dimensions in the process—ask, investigate, create, discuss, reflect—overlap, and not every category or step is present in any given inquiry. Each step can be embedded in any of the others, and so on. In fact, the very nature of inquiry is that these steps are mutually reinforcing and interrelated. Thus, reflection on solving a problem may lead to reformulating the problem or posing a new question. Similarly, action in the world is closely tied to dialogue with others.

Despite these complexities, the steps and cycle outlined can be helpful in highlighting aspects of an otherwise opaque process. It presents some of the aspects of inquiry that need support in a successful learning environment. It serves as a boundary object (Star & Griesmer, 1989), allowing us to relate theory with ordinary practices or to look across modes and contexts of learning. Together, they comprise a cycle that can be used to inform and guide educational experiences for learners. What follows is a discussion of the elements of the cycle.

Ask

*Ask* reminds us that inquiry develops from a question or problem arising out of experience. Meaningful questions are inspired by genuine curiosity about real-world experiences and challenges. The *indeterminate situation* Dewey refers to is part of that experience, including an individual’s participation in a community. It is not something that can be delivered from
“outside” this participation. This is why there is “an enormous pedagogical difference between answering someone else’s question and formulating your own” (Olds, Schwartz, & Willie, 1980, p. 40).

Viewed in process terms, one can say that a question or a problem comes into focus, and the learner begins to define or describe what it is, for example:

* "What makes a poem poetry?"
* "Where do chickens come from and how does an egg 'work'?"
* "Why does the moon change shape?"

But it is important to caution that inquiry does not always start with a well-articulated question. In fact, questions themselves arise from reflection and action in the world, including dialogue with others. Elspeth Huxley states this well:

The best way to find things out .. is not to ask questions at all. If you fire off a question, it is like firing of a gun - bang it goes, and everything takes flight and runs for shelter. But if you sit quite still and pretend not to be looking, all the little facts will come and peck round your feet, situations will venture forth from thickets, and intentions will creep out and sun themselves on a stone; and if you are very patient you will see and understand a great deal more than a man with a gun does.

Investigate

Investigate relates to the varieties of experience possible and the many ways in which we become part of an indeterminate situation. It suggests that opportunities for learning require diverse, authentic, and challenging materials and problems. Because experience includes interactions with others, there is also a moral dimension to inquiry. Similarly, physical, emotional, aesthetic, and practical dimensions are inherent in inquiry, and are not merely enhancements or add-ons.

Through investigation, we turn curiosity into action. Learners gather information, study, craft an experiment, observe, or interview. The learner may recast the question, refine a line of query, or plunge down a new path that the original question did not, or could not, anticipate. The information-gathering stage becomes a self-motivated process that is owned by the engaged learner.

Create

Create picks up the “controlled or directed transformation” part of Dewey’s definition. This term insists that inquiry means active, engaged hands-on learning. Inquiry thus implies active creation of meaning, which includes new forms of collaborating and new roles for
collaborators. As information begins to coalesce, the learner makes connections. The ability at this stage to synthesize meaning is the creative spark that forms new knowledge. The learner now undertakes the creative task of shaping significant new thoughts, ideas, and theories extending his/her prior experience.

Discuss

Discuss highlights an implicit part of Dewey’s definition, which is developed in great detail in his other writing, especially the later work. Although inquiry has a personal aspect it is also part of our participation in social arrangements and community. The discuss aspect in the inquiry cycle involves listening to others and articulating our own understandings. Through discussion (or dialogue), construction of knowledge becomes a social enterprise. Learners share their ideas and ask others about their own experiences. Shared knowledge is a community-building process, and the meaning of their investigation begins to take on greater relevance in the context of the learner's society. Learners compare notes, share experiences, and discuss conclusions, through multiple media, including now online social networks.

Community inquiry is inquiry of, by, for communities. How can we go from individual to community inquiry? Dewey argues that inquiry is situated in circumstances defined by a unique history of prior experiences and present social and physical conditions. As Gale points out, this implies an ineffability of experience; there are fundamental limits to how much the defining, problematic situation can even be understood, much less entered into by another. How then is community inquiry possible? We need to be open to the fusing of horizons (Gadamer).

Reflect

Reflect tells us that only the inquirer can recognize the indeterminate situation and further, say whether it has been transformed into a unified whole. Reflection (later articulated in
the work of Schön, 1983, and others) means expressing experience, and thereby being able to move from new concepts into action. Reflection may also mean recognizing further indeterminacies, leading to continuing inquiry. Reflection is taking the time to look back at initial questions, the research path, and the conclusions made. The learner steps back, takes inventory, makes observations, and new decisions. Has a solution been found? Do new questions come into light? What might those questions be? And so it begins again; thus the circle of inquiry.

**How can we connect learning and life?**

Engaging in the cycle of inquiry implies that connecting to lived experience outside the school walls is essential. As Addams learned at Hull House, the best education constantly reconstructs experience, relating it to both the past and to contemporary life. This view is captured in an oft-quoted passage (John Dewey, 1938, p. 51):

> We always live at the time we live and not at some other time, and only by extracting at each present time the full meaning of each present experience are we prepared for doing the same in the future. This is the only preparation which in the long run amounts to anything.

Thus, inquiry requires active learning in authentic contexts. Authentic contexts require that teachers, students, and community members become partners in inquiry, including inquiry into the world and inquiry into pedagogy. This principle carries through from the individual classroom to the whole school. As Owen, Cox, and Watkins (1994, p. 15) say, "For communities to rethink and redesign their schools so that all students develop successfully, the entire community must have the opportunity to be involved in inquiry about teaching, learning, and assessing."

*Building a low-cost, multi-touch, interactive whiteboard*

For the sake of a concrete example, we will follow through inquiry related to a device—the building of a low-cost, multi-touch, interactive whiteboard using a Wiimote. First some definitions: An interactive whiteboard is a large interactive display mounted to a wall or on a
stand. A projector displays a computer’s
desktop onto the whiteboard. Users can
then control the computer using a pen,
finger, or other device. They are used in a
variety of settings including classrooms at
all levels, work groups, broadcasting, etc.
A Wiimote is the remote controller from the
Nintendo Wii computer game. Johnny
Chung Lee, a graduate student at Carnegie
Mellon University, has a variety of
interesting projects involving human-
computer interaction. He discovered a way
to build an interactive whiteboard using a
Wiimote. His version is portable and can be
built for a tiny fraction of the cost of a
commercial whiteboard.

Why did Johnny Lee spend time on this project, something no one else had ever done?
For that question we can only speculate here. But judging from his published articles, his blog,
is website, and self description, certain things stand out. He seems interested in new
technologies, and demonstrates a playful attitude
toward them. He asks interesting questions about
creative ways to interact with computers. It's not
farfetched to imagine that he was playing with a
Wii game and began to ask whether its
sophisticated features might have wider
applications. Many researchers will admit that
there are times when the question arises of
whether some leisure activity, such as computer
games, might connect with research. That
connection would resolve at least two felt
difficulties at once—one related to justifying fun
time and another to finding novel ideas for
research, in this case, in the area of human-computer interaction.

Once a question had been posed, Lee apparently engaged in detailed investigations. He
read the specs for the Wiimote, he tested it out in various situations, he tried different materials
for the necessary infrared sensors, including his own fingers.

Soon, Lee's inquiry began to take on more of a creative aspect. He constructed different
versions of his low-cost, multi-touch whiteboard. These versions led to new questions and
further investigations of properties, comparisons with other devices, and so on.

As he began to see that he had created something of possibly wider interest, Lee began to
discuss it. It's likely that the initial discussion was in an oral form with colleagues or friends.
Then, he began to write about it on a special webpage, and on his blog. He created a video to demonstrate what he had done and posted it on YouTube. Note that this discuss aspect is also a form of creation, and in turn leads to further investigation. People who heard about his idea responded, through comments on YouTube, direct email, conversation, or as here, in this text.

Lee's inquiry continues with his writing and reflections in his blog, *procrastineering*. These personal reflections are further refined and extended by the inquiry of others. For example, Lee writes:

One of the great, unexpected, and perhaps most influential aspects of creating these videos has been how many people they have inspired and sparked an innovative spirit in. I've gotten hundreds of emails from young students that express this enthusiasm. But, perhaps one of the best testimonials is this news article about kids in the Clara Byrd Baker Elementary School's Lego Club in Williamsburg, VA. The students there, led by Kofi Merritt, are getting excited about innovating in technology by creating their own electronic white boards.

The inquiry by the Baker School kids will likely turn out as more interesting, but it's worth looking at our own inquiry as well. I was not a Wii player and only peripherally in the field of HCI. And yet, I found Lee's inquiry to be very interesting. It's a good example of how we learn to use digital technologies in creative ways, something I study in a variety of projects. Moreover, through writing and talks, I am always interested in (feel a need for) good examples of inquiry and technology. So, my ask is less about needing a cheap whiteboard and more about understanding a process, which Lee has thankfully opened up.

But asking inevitably lead to investigating. I read what Lee has done and then want to find out how others see it. Are there other such approaches? How does a Wiimote or a standard commercial whiteboard work anyway? Is Lee's really as it good as it sounds? Could an ordinary person really make one? And so on.

Then, I too begin to create. I think of writing here, including the story in presentation slides, posting a blog entry, using a Wiimote, or even building the whiteboard Lee describes. I discuss what I'm learning with colleagues, read other blogs, find questions I hadn't considered before: Might it work well, but not fulfill the totem value that the latest expensive technology carries in a classroom or work setting? As I reflect, I realize that I really don't know that much about infrared sensors and what they can or cannot do. I also have new questions about technology and inquiry. Lee's work is one of a kind, but is it nevertheless a model for how any of us might learn? I find myself coming to new asks.
**Transformation of our institutions and public spaces**

The neighborhood around Humboldt Park in Chicago has a rich and varied history. Once it was a home for Jewish immigrants, including Saul Bellow's Augie March and Elaine Soloway's Division Street princess. Later it was home to Polish Catholics. Many other immigrant groups, religions, languages, and ethnicities have been represented over the years, and today it is home to Asian-, Mexican-, African-, and European-Americans. It is best known for Paseo Boricua, a half-mile stretch of Division Street, demarcated by two 59-foot-tall steel Puerto Rican flags. The neighborhood contains many Puerto Rican stores and restaurants, and is currently adding iron balconies and streetlights in the style of old San Juan, along with mosaics representing the 78 municipalities of Puerto Rico. As the community works to promote a safer and more vibrant neighborhood, it actively resists the gentrification that had forced it out to West Town, Wicker Park, and Ukrainian Village.

In a context of urban poverty and discrimination, Paseo Boricua has taken action to build a strong community. Community building there goes beyond familiar remedies such as economic enterprise zones or dropout prevention programs, to include active transformation of the lived environment. Moreover, that transformation has begun and continues to be defined by participation and ownership by community members. Puerto Rican identity is affirmed and renegotiated in relation to that of other members of a quite diverse neighborhood, to that of Puerto Rico, and to a variety of others, including university partners. The process exemplifies Maxine Greene's call for both opening and transforming public spaces:

> it is not only a matter of admission and inclusion in predefined public spaces; it is...a matter of transformation of our institutions and public spaces...We need to make audible and visible the diverse ways in which identity is negotiated in our country and the manner in which it is affected by fairness, equity opportunities for free expression, and by the existence or the nonexistence of democracy. (Greene, 1998, p. 19)

Residents of Paseo Boricua have engaged in that transformative process themselves, building upon community funds of knowledge, but also upon community self-empowerment. Initially, much of the discourse focused on community resistance, but has shifted increasingly to community building. Among many community organizations (see Ocasio, 2006) are the following:

* Juan Antonio Corretjer Puerto Rican Cultural Center
* Consuelo Lee Corretjer Day Care
* Andrés Figueroa Cordero Library and Community Information and Technology Center
* Community Organizing for Obesity Prevention in Humboldt Park, a healthy lifestyles program
* La Casita de Don Pedro, a community museum
* Vida/SIDA AIDS Education & Prevention Program, a health center and programs
* Development of economic and commercial projects including a Puerto Rican-focused restaurant district

Many of these activities are designed and run by young people in the community and all
are conceived as sites for learning for community members of all ages and visitors. The activities build on ideas of Paolo Freire, who spent time there, and in many ways represent a modern version of the work of Hull House (Addams, 1910). Throughout, there is an emphasis on the wholeness of both individuals and community.

Recognizing that only one in four of their young people were completing high school, Paseo Boricua established an alternative high school called Pedro Albizu Campos High School (PACHS), which is housed within the Puerto Rican Cultural Center. Although community leaders would speak of Puerto Rican independence, community resistance against violence, and solidarity with Puerto Ricans and other oppressed people, they realized that the young people above all need a nurturing environment for learning. In an ethnographic study, Rene Antrop-González (2003) found that teachers are very aware of these multiple goals:

Our students don’t come here because they are consciously seeking a liberating education or because they support Puerto Rican independence. They come here because they know that this school will work hard not to neglect them and because they’ll find out who they are. Hopefully, they will want to come back and continue their work in the community. – Iván, a teacher and principal of the high school.

The results at PACHS have been impressive. Today, three out of four students complete high school, some have gone on the college, and some have now entered our Masters program in Library and Information Science. There is also a successful Lolita Lebrón Family Learning Center for young mothers and their children. Both programs build instruction around students' lives and experiences, thus moving from a deficit model to an assets model. Educators define the curriculum in terms of three goals: to learn about the world in a connected way, to learn how to act responsibly in the world, and to learn how to transform the world—to give back to the community. In short, the community is the curriculum.

There are many other factors in their success, including dedicated teachers and a curriculum relevant to students' lives. Most of all is the sense of a school community connected to a neighborhood community, with an opportunity to grow in socially-meaningful ways:

That’s why I’m always at this school. This school is my sanctuary. I know this because once I step outside these doors my problems come back. They’re just waiting outside the doors to smack me in my face and start all over again. I stay at this school because I don’t have to worry about my problems. It’s hard to describe but it’s like a load is taken off me when I’m here. —Damien, a PACHS student (quoted in Antrop-González, 2003)

Among the many projects at Paseo Boricua is the Barrio Arts, Culture, and Communication Academy (BACCA). Bacca activities include La Voz de Paseo Boricua, a community newspaper, which contributes to the Participatory Democracy Project, Theater, e.g., The Spark/La Chispa, about the 1966 Division St. Riots, community radio, a sound studio, podcasts of oral histories, and Café Teatro Batey Urbano, a club/study center for young people and a venue for social action, where they present poetry with a purpose, hip hop, and other cultural expressions.
Recently, in collaboration with the Paseo Boricua community, my department has inaugurated a new Masters program in Library and Information Science. The aim of the program, known as the Community Informatics Corps (http://www.lis.uiuc.edu/programs/ms/cic.html), is to recruit and mentor a cohort of Latina/o, African-American, and other students who are interested in a career enabling them to contribute to communities especially of groups underserved in society. Students focus their coursework on social entrepreneurship and community library and information services, so that they are prepared to apply what they've learned to the creation of innovative information services implemented within and across a range of community-based and public interest organizations.

The curriculum combines Saturday and summer courses offered at the Puerto Rican Cultural Center in Chicago, online courses, and summer courses at the Urbana-Champaign campus. Students have a blended experience that emphasizes service learning in Chicago neighborhoods yet offers them experience with online learning and integrates them with the on-campus program. Campus-based students have an opportunity to experience and learn from neighborhood life. One hope is that we can learn from Paseo Boricua and help make the university itself a place for wholeness, a healthy ecology, and continuity. A characterization, which is at one and the same time modest and daunting, is that we seek to establish a conversation between a large, elite, and increasingly remote university and the communities around it.

The model for my own Fall 2006 course on Inquiry-Based Learning (http://www.uiuc.edu/goto/ibo) originated to accommodate students in the CI Corps, and to benefit from the resources offered by Paseo Boricua, and the Puerto Rican Cultural Center. Students worked with community members on projects such as a Puerto Rican Digital Archive, a literacy program for the high school, a hydroponics garden, violence reduction, and a community wellness program. The aim was to see how our developing understandings of learning, research, literacy, community, technology, and social justice could be integrated through action in the community. As Migdalia Jimenez, a student in the course said:

I’ve always been passionate about literacy and social justice. I also have always loved libraries. I just didn’t know that those seemingly disparate interests could be joined. Growing up in inner-city Chicago as a child of immigrants, I spent most of my time at my neighborhood public library. Although my mother only made it to 6th grade in her native land of Mexico, she imbued us with a love for books. Reading opened up so many possibilities in my life because it provides access to information. For me it has meant the end of ignorance and the beginning of independent thinking.

There is no neat conclusion to this process, no simple formula for replication. We have encountered many challenges in working across divides of geography, language, institutions, and perhaps most importantly, the mundane realities of everyone’s over-scheduled lives. Nevertheless, nearly everyone involved would find it difficult to go back to a curriculum in which the parts are dismembered.
Computers to Africa

One of the university courses now offered at Paseo Boricua is *Networked Information Systems*. In this course, students learn how to rehabilitate donated computers, configure operating systems and software, set up local and distance networking, build a community technology center, and teach people in the community site.

A similar service learning program has now been set up between Camara and the National College of Ireland.

Border learning

"Learning at the border" refers to learning that occurs in the border settings between the highly-structured realm of schools and the more diffuse realms of life in neighborhoods, such as after-school programs, boys and girls clubs, libraries, museums, and community centers. A second meaning relates to participants who've been placed on the border because of their language, cultural background, race, or social class, hence denied full participation in the public sphere.
We have several ongoing projects in which university students and faculty work with community members to create spaces in which young people learn about new technologies and develop academic potential through self expression. A common thread is that the young people learn how to use ICTs for community building, thus becoming active sustainers of their own communities.

In one of these, students, age 11-14, developed audiovisual podcasts on topics of their choice. They came Mexican-American families, with low income, low academic achievement, and limited access to computers. The activities took place after school and Saturdays with university students serving as mentors.

One of the graduate students who worked with the young people on this project is herself an immigrant. She describes her own learning in this way:

Working with students ... was an inspiring journey for me to appreciate Hispanic culture and revisit my own cultural identity...

I tried to put myself in these students’ shoes, imagining how difficult may be for these immigrant young people to live and study in a new country.

I brought my own “away-from-home” experience into designing the sample storyboard...I came to understand that I was telling my own story to these students as a self exploration journey...

...the students and I were interchangeably engaging multiple forms of communication, including visual, gesture, and verbal modes.
How can we foster integrative learning?

Many college students today rightly feel that their learning is fragmented and non-cumulative. Each course is disjoint from the others, and all are distant from the student's own experiences and daily life. Moreover, there is little connection from semester to semester, much less from university life to the community and workplace. To counter this, Huber, et al. (2007) call for integrative learning—over time, across courses, and between academic, personal, & community life.

John Dewey had recognized the problem even earlier, when he called for relating the school to life:

When the child lives in varied but concrete and active relationship to this common world, his studies are naturally unified...Relate the school to life, and all studies are of necessity correlated. (Dewey, 1900/1915)
Conclusion

It is commonplace today to think of the classroom or the school as a learning community, even if that is more often achieved in name than in fact. Some have argued for extending to the community beyond, bringing neighborhood experiences into the classroom, as with funds of knowledge approaches (Moll, Amanti, Neff, & González, 1992), or taking classroom learning out into the neighborhood, as with service learning, but programs such as those in Paseo Boricua go a step further. Rather than seeing the community as simply a resource, or as an application area for learning, it puts community first. In this approach, the community is the curriculum. The mutual constitution of community life and education is thus evident in everything the community undertakes.

In his essay on body and mind, Dewey (1928) states forcefully the need for integrating the worlds of the academy and daily life:

Thus the question of integration of mind-body in action is the most practical of all questions we can ask of our civilization. It is not just a speculative question, it is a demand--a demand that the labor of multitudes now too predominantly physical in character to be inspirted by purpose and emotion and informed by knowledge and understanding. It is a demand that what now pass for highly intellectual and spiritual functions shall be integrated with the ultimate conditions and means of all achievement, namely the physical, and thereby accomplish something beyond themselves. Until this integration is effected in the only place where it can be carried out, in action itself, we shall continue to live in a society in which a soulless and heartless materialism is compensated for by soulful but futile idealism and spiritualism.

The integration of academy and community, of theory and practice, of mind and body gives meaning to students in a way that pre-packaged curricula or a smorgasbord of options can never do. The university of the future must find ways to engage students in meaningful inquiry, centering on students by encouraging them not to center on themselves.

References
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