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Cases on Higher Education Spaces:

Innovation, Collaboration, and Technology

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Chapter 11

Beyond Physical Space: Implementing a Virtual Learning Commons at an Urban Community College

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EXECUTIVE SUMMARY

The administration, faculty, and staff at Hostos Community College strive to improve students' computer and information literacy skills while meeting the distinct needs of Millennials. In 2007, Hostos initiated a project to reconfigure physical spaces throughout the campus (areas in the Library, Academic Learning Center, Educational Technology Office, and Academic Computing Center) and establish a unified virtual space, creating a cross-divisional entity: the Information Learning Commons (ILC). This case discusses the formation of the ILC Committee, the group that envisions and manages physical ILC spaces' renovation and also develops virtual spaces; the planning and implementation of physical learning commons spaces; the web applications that unify the ILC; the benefits of reducing duplication and optimizing resource utilization; Hostos' current challenges with the ILC concept; and finally, the imminent expansion of virtual commons spaces. Hostos is an exemplar in how collaboration can creatively maximize resources through technology to meet students' needs.

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ORGANIZATION BACKGROUND

Located in the South Bronx, and part of the City University of New York (CUNY), Hostos Community College serves students from diverse ethnic, racial, cultural, and linguistic backgrounds, particularly Hispanics and African Americans who make up nearly 80% of the student demographic. To date, enrollment has surpassed 6,500 students and is at a record high. Since classrooms are increasingly at capacity, the college has had to reconfigure scheduling and use of space to accommodate the unprecedented enrollment.

The organizational hierarchy of the institution includes a President's cabinet and is comprised of five divisions: Academic Affairs, Administration & Finance, Student Development & Enrollment Management, Institutional Advancement, and Continuing Education & Workforce Development.

The administration, faculty, and staff of the college—situated in one of the poorest congressional districts in the country—understand the dire need to improve students' computer and information literacy skills, requisite for lifelong success. Hostos is committed to meeting the unique needs of Millennials, a demographic cohort that increasingly represents our student body. A dramatic student population age shift occurred in the past 10 years; over 60% of current students are under 25 years of age. Having embraced ubiquitous technology at a young age, these students have a different mindset about technology and collaboration than previous generations. A recent Pew Internet report describes the Millennials:

They are history's first 'always connected' generation. Steeped in digital technology and social media, they treat their multi-tasking hand-held gadgets almost like a body part—for better and worse. More than eight-in-ten say they sleep with a cell phone glowing by the bed, poised to disgorge texts, phone calls, emails, songs, news, videos, games and wake-up jingles. (Pew Research Center, 2010, p. 1)

Despite limited physical and financial resources, Hostos is prioritizing a technology-enabled information learning commons approach to meeting its institutional needs under the direction of the Information Learning Commons (ILC). The concept was sparked in 2006, when the then Chief Librarian observed other libraries' success upon transforming their reference areas into Information Commons areas.

Prior to the creation of the ILC Committee, each venue that would later be incorporated into the ILC was managed independently. There was scant communication and collaboration among each area's respective managers and staff. This dearth of collaboration resulted in a duplication of efforts. For example, the Library, EdTech, the Academic Computing Center (ACC), and the Hostos Academic Learning Center (HALC) each had their own online calendar that was maintained and developed

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by their own web management staff. What is more, each area purchased its own licenses independently, which often resulted in overlapping license acquisitions and the ineligibility to benefit from bulk discounts. Another example is in the area of student workshops: there was an instance where the Career Services Office and the Library were both offering essentially the same workshop, neither of which had substantial student attendance.

The collaboration scarcity also fueled frustration for the faculty and students who: (a) were not getting adequate support, (b) did not know where to go for support, (c) would get conflicting or inconsistent responses depending on whom they spoke to in these areas, and (d) had to use sundry disparate systems and authentication credentials in an attempt to support their own activities and needs.

Administrators and managers from each venue included in the ILC group realized the critical need for effective collaboration. Under the co-chairmanship of the Chief Librarian and the Dean of Special Programs, the ILC was formed with the sole initial purpose of implementing an Information Commons in Hostos' library reference area. But this was only the beginning of what would evolve into a much broader vision for the ILC.

SETTING THE STAGE

As online information expanded exponentially, the needs of a traditional reference area in the library evolved. The need for sufficient PC workstations in the reference area arose so that librarians could sit with students, teaching them how to search for articles and books using web-based resources. Before this, in contrast, a reference area with a card catalog and print materials may not have needed dozens of PCs; however, with the changing information landscape in libraries, reference areas now needed to become more like computer labs. Additionally, as Millennials' work habits changed, the standard desk configuration of computers also changed. Information Commons settings tend to have PC workstations that accommodate more than one person (for computer sharing) as well as chairs with wheels and other movable furniture.

Monahan (2002) writes about flexible space and built pedagogy, and explains how the design of a built space influences the behavior and actions of individuals. Additionally, Lippincott (2006) stresses the importance of carefully planning the design of new spaces and cites examples of how universities are achieving positive results thanks to special attention devoted to the design (or redesign) of their Information Learning spaces. Technology and wireless access became part of the equation, and, as Lippincott writes, "Information commons have drawn students by offering environments that address their needs, bringing together technology, content, and

services in a physical space that results in an environment different from that of a typical library” (2006, Pervasive Technology Section, para. 1c).

Although the ideal configuration of an Information Learning Commons involves consolidating various physical locations such as libraries, lounges, and other social gathering areas, the urban configuration of Hostos’ campus buildings required an innovative out-of-the-box approach to providing the feel of a commons without necessarily being restricted to one building and space (Educause, 2011).

Hostos launched the consolidation of physical locations to a new level by implementing versions of this coalesced space across myriad venues spanning three academic buildings into a distributed Information Learning Commons. The areas finally represented by the ILC include Information Technology (IT), the Hostos Academic Learning Center (HALC), the Library, Career Services Office, the Academic Computing Center (ACC), and Educational Technology (EdTech). Physical areas were renovated to support the objective of “Commons.” They include the reference area of the Library, the Academic Computing Center, the Hostos Academic Learning Center, and the Faculty Learning Commons.

The ILC venues include spaces expressly purposed for being conducive for collaborative group-work enabled via technology (e.g. use of colossal flat-screen monitors in concert with wireless keyboards and mice). This enabling of collaborative group work helps realize Millennials’ “always connected” reality. Ubiquitous Wi-Fi throughout campus, a plethora of outlets for plugging in devices, the library’s laptop loan program, plus movable furniture that students can reconfigure to meet a group’s unique requirements are all initiatives that underlie the ILC’s commitment to assess the needs of this new generation of students and exceed them.

The ILC Groups

The ILC is a representative, dynamic, and active committee of leaders and staff from various departments across the college that share a vision of utilizing technology to facilitate an optimal teaching, learning, and support environment for our faculty and students. Through its efforts of taking an institutional approach to strategic objectives and fulfilling needs, the ILC initiatives have been able to improve administrative and academic outcomes at Hostos. The committee is co-chaired by the Assistant Vice President for Technology/CIO and the Director of the Hostos Academic Learning Center.

- **Academic Computing Center (ACC):** The ACC consists of the various campus computer labs and supports Smart classrooms and in-class hardware and software. Furthermore, ACC staff conduct student technology learning sessions.

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- **Hostos Academic Learning Center (HALC):** HALC provides to students admissions and graduation-related test preparation, tutoring services, and software-aided homework assistance. Moreover, there is the Virtual HALC solution that facilitates distance-learning and self-service on-demand video tutoring.
- **Library:** Hostos' award-winning Library (2007 ACRL Excellence in Academic Libraries Award) conducts workshops for students on how to use technology effectively for their own academic and professional development.
- **Educational Technology (EdTech):** The Educational Technology department conducts innovative pilot programs.
- **Other Departments and Representatives:** The ILC also contains membership from Information Technology (IT), the Career Services Office, the Office of Institutional Research along with a rotating student member to ensure the focus is driven by the needs of the key constituents and that the ILC is able to present effective outcomes from the initiatives.

ILC Philosophy

The fundamental philosophy behind the ILC is to create a technology-enabled environment that allows faculty and students to easily take advantage of the various services offered throughout campus while also igniting a desire and eagerness for them to do so. Its biggest question: If ILC builds it, will they come?

In order to fulfill this vision, the ILC needed a scope of experience ranging from marketing to application development. The committee quickly realized the depth and breadth of talent that existed across the member areas, but was, unfortunately, not harnessed to work collectively. With simultaneous, often duplicate, initiatives underway, there was a definitive and urgent need to determine how, as an institution, it could collaborate and combine the collective skill set in an efficient manner.

Since the ILC did not officially report to any particular division, the group had the liberty to be creative and take chances with bold concepts and initiatives (provided a consensus was attained within the committee). Each member of the committee had a voice and a vote. This facilitated open, unbiased dialog and sowed the seeds for the rapid and successful implementation of the "Commons." Through continuous communication (the group meets at least monthly), initiatives that would traditionally take years would be completed in a matter of months.

Now that the concepts were visualized and the framework established, how would the ILC get the students to participate and encourage faculty to use the systems? Another challenge the ILC faced was marketing. Incentives seemed to be the key to getting students interested, and faculty were encouraged by the ease of use and cross-functional integration.

The Hostos Student Reward Points Program (HSRPP), which is described in depth later in the chapter, gamifies the use of ILC services, much like the currently popular site FourSquare (www.foursquare.com) turns visiting different locations, such as coffee-shops, libraries, and airports, into a social, point-earning game. With the HSRPP, students earn points for completing activities like completing surveys and attending workshops offered by different ILC areas.

HSRPP is built on two practices for increasing motivation: 1) offering students incentives for participating in their educational experiences and 2) integrating gaming principles into educational activities. Using the practices of incentives and gaming in an academic setting has been somewhat controversial; however, after much research, it seems more likely that there are benefits to using both for outreach and increasing participation.

Some research, for example, indicates that playing video games could be associated with lower academic achievement. For example, there is research that concludes, “. . . not a single significant positive correlation was found between gaming frequency and academic performance- a finding, which, in effect, vindicates the stereotypical view that gaming is detrimental (or at least of no benefit) to academic study” (Ip, Jacobs, & Watkins, 2008, p. 367). However, the association between playing games, especially video or computer games, and academic success (or life-long success) is still very disputed. Prensky and Gee, for example, are leaders in education who not only defend, but, in some disciplines, see a plethora of value in gaming principles.

Prensky (2006), for example, writes, “Ever since *Pong* arrived in 1974, kids have been gradually reprogramming their brains to handle the speed, interactivity, and other factors in the games” (p. 35). He suggests that playing video games are changing the way kids think and learn in ways that will ultimately make this generation more adaptable to the technologies they will see in their lifetimes.

Gee (2003), a linguist, writes, “The power of video games, for good or ill, resides in the ways in which they meld learning and identity . . . the player projects his or her own hopes, values, and fears into the virtual character. Doing this allows the player to imagine a new identity born at the intersection of the player’s real-world identities and the virtual identity of the character he or she is playing in the game” (p. 199). In the HSRPP application, students see themselves as winners. The message conveyed by the system is that by becoming actively involved in the shape of their academic institution and participating in extra-curricular learning opportunities (completing workshops and surveys), they can win prizes. Regardless of whether prizes are won, students who participate ultimately are winners for becoming more involved in their own educational experience while gaining the satisfaction of amassing points.

Technology Utilization and Advancements

Higher Education Institutions (IHE) have long been challenged by the complexities of determining where on the technology curve investments should be made, who should decide how, and where to utilize technology, and, of course, how to fund and gain buy-in for the respective technologies.

Hostos, through inter-divisional collaboration initiatives in recent years (such as the ILC), has been able to make strategic investments in technology to support a variety of activities across fundamental areas like instruction, library services, administration, and student support. This collaboration and the mission to present a common, integrated experience to students, faculty, and staff has been a driving force behind many recent accomplishments and accolades for Hostos.

The Hostos IT department has been able to create a robust and secure infrastructure for computing on campus. With improvements in the wired and wireless network availability (Gigabit to the desktop, 802.11n WiFi across campus), the ability for users to access network-based resources such as applications, email, documents, and Internet sites and resources has increased steadily over the years. However, the adage “build it and they will come” did not always come to fruition.

Prior to the ILC initiative of building a common virtual architecture for campus co-curricular and academic support activities, development of applications was performed on a diverse set of platforms such as Perl, PHP, ASP, and .NET. Authentication and authorization of users was through local application user accounts (which were either auto-created or had to be manually requested) or based upon the campus Active Directory. This clearly created a challenge for users who were being forced to remember multiple accounts’ usernames and passwords, thereby directly impacting adoption of the systems and creating additional support overhead.

In addition, there was a duplication of effort in terms of applications that were being developed. The Library and Educational Technology office each had separate systems for tracking workshops and participants. The Hostos Academic Learning Center (HALC) was maintaining its own database and web application for managing tutors and students, while IT and EdTech were also each maintaining separate databases for their respective applications.

Even though the college provides a modern web-accessible email system, the use of college email by students was below 3% at the program’s onset. With little or no incentive—receiving emails from professors via Blackboard was not incentive enough—it had become extremely challenging for the administrative and academic areas to effectively and reliably communicate with the student population. This had to change.

Over the years, through the efforts of the various member groups of the ILC, several steps have been taken to lay the foundation of a successful Virtual Commons initiative. Application development platforms have been standardized and user authentication has been redesigned to use the campus Active Directory, thereby allowing single sign-on. Redundant applications and databases have been analyzed and consolidated. Incentive-based programs, such as the Hostos Student Reward Points Program, and more active awareness campaigns have helped drive student college email use to nearly 40% in less than four years.

CASE DESCRIPTION

The first task of the ILC Committee was to compose the mission and vision statements for the ILC; these statements have not changed since the inception of the committee. The vision for the ILC was, and is, to create spaces—both physical and virtual—that enhance student learning by fostering integration, collaboration, and a sense of community while encouraging independent and critical thinking in an active learning environment. In addition, in 2006, the ILC Committee appointed a subcommittee of web programmers to work on developing the first unified web application: the Reward Points Program. This points-based incentive program would serve as a marketing tool for all the ILC venues and applications. As students completed workshops, surveys, and other opportunities offered through ILC-affiliated areas, they would earn points that would later allow them to enter a sweepstakes for prizes.

The following is a breakdown, first, of the physical space renovations in each area, and then a description of the Reward Points program and the other subsequent web applications developed jointly through the ILC Committee's collaborative efforts.

Physical Spaces

The ILC continues to focus on enhancing the current infrastructure (Academic Learning Center, Academic Computing Center, Faculty Learning Commons, and Library). Initially, each site was renovated so all spaces share a common look and feel, utilizing the same core technology; for example, across all sites, every workstation was equipped with the same software, online accessibility, and seamless interface.

Additionally, each commons area was staffed with various technical support personnel to service students more comprehensively. A strong emphasis was placed on providing continued training on an as-needed basis to all the instrumental players in this project; thus, academic and technology tutors were always prepared to both answer student inquiries and provide guidance to students about all the resources available through the ILC. What is more, a collaborative effort among all these

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departments helped in designing and implementing a training plan for all tutors, which included knowledge about all services and resources available through the ILC, software applications, and basic library services. Furthermore, the tech tutors' bilingual skills helped many of the students for whom English is a second language.

An EDUCAUSE (2011) article mentions, "A well-equipped learning commons says to a student, 'Here you have tools, room to collaborate, equipment, advice, research, options, and access to expert information. Now it is up to you build something worthwhile; a paper, a presentation, an education'" (p. 2). Inspired by this, this initiative had full support from the College Administration, which invested substantial funds to revamp all these venues to achieve the goals of the ILC.

The ILC believed that the importance of physical spaces could not be understated. Whether it is a study lounge, tutoring center, library, or computer lab, the assumption is that students relish areas that are clean, well-lit, nicely-furnished, equipped with state-of-the-art equipment without appearing sterile. This "coziness factor" was achieved in each of the spaces by using contemporary sofas, rugs and vibrantly colored walls and furnishings, and high-quality equipment, most of which is wireless and aesthetically appealing. "An evolution from IC to LC implies various schemas to bring learners into effective contact with their peers while in simultaneous proximity to their facilitative technologies" (Beagle, 2006, p. 38). In that regard, the ILC spaces are configured to have mini-living rooms or kitchen tables within a larger context aimed at fostering interaction with technology, other students, and support staff.

Hostos Academic Learning Center (HALC)

HALC underwent a major overhaul whose expenditure was \$75,000. The initial space consisted of nine separate rooms, of which three were computer labs equipped with educational software and one was an administrative office. The rest were dedicated to various tutoring subject areas. This arrangement was determined to not be conducive for optimal communication and space utilization. For instance, the math and English tutoring rooms sometimes became overcrowded, whereas other subject areas' rooms were vacant.

After renovation, the expansive renovated one-stop tutoring center was well lit, with a centrally located reception counter serving as the student's first contact point, where he or she was directed to the appropriate tutor. This large space provides an open atmosphere for pedagogy and learning; walls were furnished with large whiteboards, and the walls, furniture, and tables were modern, trendy and vibrant. The student and tutor were free to choose any spot (desk, sofa, or computer terminal), and students not under tutelage were also at leisure to use the space for studying. Staff and administrators could be accessed without leaving the premises.

The HALC space is designed to facilitate use by other departments. Available in it are a Smart room and a multi-purpose conference room. Every semester the space is used for general registration. Also, on Fridays, when no tutoring takes place, the space is reserved for special groups, such as: Accelerated Study in Associate Programs (ASAP), College Now (training, orientation, self-tutoring), and staff training.

Students can come to discuss, dialog, and study among themselves and use the available tutoring and technology resources; they are free to take a table and whiteboard, and work on their projects. Overall, the HALC strives to maintain a friendly environment conducive to learning whose capacities are used to the utmost.

The Academic Computing Center (ACC)

ACC went through a complete renewal of its hardware and software infrastructure. It increased the number of computers in the Open Lab and Student Multimedia Lab. Additionally, eight Smart rooms, equipped with the latest Smart-board technology, are available for teaching and learning purposes; they can be reserved through the in-house Tech Resource Reservation System. Moreover, ACC is equipped with approximately 300 laptop computers and ten multimedia carts. The Open lab has also added study tables and sofas, and offered students a variety of Quick Learn Sessions on various topics such as Basic Computer, Citizen CUNY, Blackboard, Hostos Email/SSPM (Self-Service Password Management), and Microsoft Office Suite. Smart classrooms' leverage of technology in an integrated fashion increases students' exposure to technology. The Smart rooms along with the computer lab facilities' use of the best-to-date equipment are aimed at preparing students for the workforce, where using and interacting with technology is expected.

Library

As Beagle (2006) has noted, "Traditionally, libraries allocated spaces and furnishings primarily to bring users in proximity to the dominant knowledge containers of the Age of Print: books and journals" (p. 37). The budget for the space renovation in the library was \$40,000, not including in-house labor costs or technology. The space renovation involved the removal of two large bookshelves in the reference area and the purchase of chairs with wheels, comfortable furniture, computer desks that facilitated group collaboration, and ADA workstations. Before the increase in workstations, the room originally had no more than six computers, none of which had any popular software like Microsoft Office or Adobe Creative Suite, both of which are now available in the ILC. The renovation also included installation of two large-screen televisions connected to PCs with wireless mice and keyboards to encourage students' group work.

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Along with the renovation came staffing and policy changes. Because group work was now championed, the old noise policies changed. While the library still had other quiet study areas, the ILC space became a place that permitted talking. Also, in acknowledgement of students' attachment to their devices, librarians condoned cell phone use in the ILC area, with the proviso that students turned their ringers to vibrate and conversations were not to distract others.

To support the new technology in the library, the new position of Technology Tutor was created. Technology Tutors are available at the reference desk, during all library hours, to answer technology-related questions, such as how to scan photos and insert them into presentations or how to create videos and podcasts for their classes.

Most librarians are dedicated to the dissemination of information, which technology facilitates in orders of magnitude with respect to speed and ease. However, some librarians needed to enhance their technology skills in order to maximize their information-sharing potential.

Faculty Learning Commons

The Department of Educational Technology (EdTech, formerly OIT or Office of Instructional Technology) reopened its Faculty Learning Commons after a \$60,000 redesign and renovation. The Faculty Learning Commons is the first of its kind at the CUNY, and an example of Hostos' investment in its infrastructure. The area was equipped with a state-of-the-art Smart board, new computers, and media hardware; it is now a unique facility where faculty can meet, converse, and work in a multipurpose Smart room equipped with the latest technology to create and capture interactive lectures, as well as a comfortable lounge space. Thanks to a modern, imaginative, and welcoming design, usable floor space in the faculty support area has been increased by at least 20%. The renovation also demonstrates a strategic use of a tight budget to improve teaching and position the college as a national leader in instructional technology.

The Faculty Learning Commons is the only ILC area that caters primarily to faculty and staff rather than students. Faculty can borrow devices such as Flip Cameras and iPads in order to experiment with the latest technology. Providing faculty a technology resource that entices them to learn about the new technologies the same way their students do—by experimenting with the latest hardware and software—is pivotal to the success of educational technology integration in the college's coursework. Encouraging faculty to utilize available technology like Blackboard, Smart rooms and eBook readers can be a challenge. The Faculty Learning Commons goes a long way to mitigating that obstacle.

The Faculty Learning Commons also serves as a bridge to collaboration with students. Bennett & Bidner (2010) write, "Because learning is a cooperative en-

terprise between faculty and students, finding ways to increase collaboration and communication among faculty and students is important” (p. 46). They go on to suggest involving teaching faculty when areas with Information Commons spaces develop exhibits and events so that faculty work is integrated into students’ learning spaces. The Faculty Learning Commons goes a step further in being a space that is parallel with, and unified with, the student learning commons spaces. It brings students and faculty into the same learning paradigm.

Other Physical Spaces

As the ILC spaces grew in demand and popularity, resulting in student crowding of previously empty spaces, the administration saw the need to add collaborative spaces throughout campus. The spaces were selected near computer terminals installed all over campus and included furniture that matched the comfortable couches and chairs in the other ILC venues.

Virtual Spaces

The oft-cited book, *The Information Commons Handbook*, describes the extension of information commons spaces to virtual areas. “[T]he term information commons has denoted a pervasive online environment in which a wide variety of electronic resources and services can be accessed through a single graphical user interface (GUI) and potentially searched in parallel with a single search engine from any networked workstation” (Beagle, 2006, p. 4). Although the web has evolved significantly in the six years since that quotation, the idea of a single-stop, unified front-end for the information commons services is still relevant. As such, at Hostos, the goal of the Virtual Information Learning Commons is to create a one-stop shopping approach in an effort to streamline the services provided to students. To that end, a series of interconnected applications were developed to modernize, de-duplicate, and enhance existing services. The Student Reward Points program, Student Workshops System, Unified Survey System, and the Tech Resource Reservation System are part of the Virtual ILC.

In creating the ILC subcommittee of web developers, the ILC Committee essentially created an in-house team with complementary skills that would be able to develop the flagship application—the Reward Points Program—as well as future unified applications. Thus, the ILC Committee avoided web development consulting expenses by contributing each area’s web development specialists’ hours to the tasks. Employing the people with the skills needed to develop the applications and empowering collaboration among that staff was paramount. The developers also provided feedback to the committee members regarding the limitations and

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feasibility of the technology they envisioned. This way, the developers were always available to keep the ILC Committee members' discussions on track and realistic about available technology.

On demand, cost-effective customization of the applications is another immense benefit to in-house development. As the web applications evolved through subsequent years, authors of the initial applications were still available to modify the system code. This continuity also translated into speedier changes, as different developers would have needed time to familiarize themselves with the code.

Within two years of the initial launching of the first ILC venues, the web developers were all invited to not only be part of the subcommittee but also to attend all of the ILC meetings in their entirety. This further extended the values of the ILC Committee that led to success. In an article about including online instruction in commons spaces, Kasowitz-Scheer (2009) writes, "Online instructional and communication tools can extend the mission of the commons beyond the physical space while at the same time draw users into the library. The Undergraduate Library at the University of Illinois at Urbana-Champaign (UIUC) has adopted the learning commons as an overall philosophy" (p. 3). As Hostos continues to extend to virtual spaces, this certainly holds true. The values—collaboration, de-duplication of efforts, user-centered-ness—have far outreached the physical spaces. The commons philosophy permeates other aspects of each area that hosts a Learning Commons space at Hostos as well as the virtual applications that are also part of the ILC.

The Hostos Student Reward Points Program (HSRPP)

The HSRPP is a leading-edge, innovative, and technology-based education initiative. Hostos students, while having access to computers at home, still have an immense need to build their skills—and thereby increase their confidence—in computer technology. Given the tremendous educational opportunities that computer and information technologies make available for their success in college, an incentive-based program was established that rewards students for taking advantage of ILC offerings.

The co-curricular approach is modeled on the popular business "incentives" program (e.g., AMEX and Frequent Flyer points) whereby students receive "Hostos Reward Points" for participating in one or more of thirty-eight technology-based workshops, completing surveys and evaluations, early semester registration, and other activities designed to facilitate student success. Points are accumulated throughout the academic year—and each 1,000 points is worth one entry into the grand prize sweepstakes drawing that takes place each spring. This "reward points system" uses a gamification approach to increase student participation in self-development and institutional assessment activities.

Through the use of a series of web applications and integration with the campus authentication directory, the college offers the students a variety of administered workshops in the library, educational technology, and career-development areas on campus. Each of these workshops is linked to the HSRPP, and, as such, the program is able to keep track of all participants and which workshops they have attended. The data from the HSRPP program is then correlated with output from our student information system to determine trends and outcomes between workshop attendees and academic achievement or enhancement. The goal is that by utilizing an anytime-anywhere online model for the students to access the workshops, we are eliminating the restrictions around physical presence, thereby increasing the opportunities and likelihood for participation by the students. The completely unified structure of the applications/workshops through proper data and web architectures allows for expedited results assessment and the necessary business intelligence to modify academic programs and workshops accordingly.

By practicing and exploring technology-based programs at their own pace, and being “rewarded” for it, students become “hooked” on engagement. They become eager to learn new technology applications such as podcasts, image and video editing software, and virtual language tutorials—all of which are available at Hostos’ Information Learning Commons and Computing Center. Their abilities to download music and use online resources, to download class assignments and use class applications via Blackboard, are all connected and all transferable to practical workforce skills. Students build up their confidence to explore and become proficient with new technology applications, and the more they use this technology, the more they integrate technology as a tool that supports “lifelong learning.” Early-bursaring and an annual sweepstakes cycle uses the “carry-over” concept to promote retention from semester to semester.

Students become self-motivated and expand their educational skill development as well as encouraged to accumulate Hostos Reward Points throughout the school year. The Hostos Student Reward Points Program also reinforces the value of “saving” and planning to meet a self-motivated goal. In addition to receiving Reward Point prizes that are valuable educational tools, the Reward Points Program develops students’ abilities to plan and work for long-term outcomes and results. This focus also engenders persistence on the part of students to stay in school and obtain their A.A. or A.S. degree.

In summary, the program is aimed at:

- Improving student academic success through participation in skill-development workshops;
- Empowering students to earn points for providing valuable feedback that can help adjust our offerings where necessary;

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- Increasing use of the Hostos student email system so as to increase our likelihood of reaching them for official communications;
- Assisting the college financially by promoting the early bursar program;
- Promoting retention with reward incentives at the end of the academic year.

The Student Workshop System (SWS)

The SWS was developed to consolidate the workshop registration systems implemented by different departments, which tended to replicate the same functionalities. The departments' lack of resources to develop such systems led to utilizing multiple software applications (or even manual systems that were inefficient) and, compounded by the redundancy of work across the departments, ultimately resulted in a waste of resources.

The SWS provides a central place for students to register for a workshop offered by all the departments on campus (Educational Technology, Library, Career Services, and other programs), making the process simple and quick for the students. At the same time, it provides a central management place for instructors and administrators. Workshops can be created and scheduled, student attendance can be taken, surveys can be administered, and statistics can be analyzed all in a facile and intuitive manner.

Another benefit of the unified calendar system was the combined data collection in the database that drives the calendar system. Reports could easily be run across ILC areas. For example, whereas reports could previously be run that looked at the GPA and retention of students who participated in the activities in one area, surveys in the unified system could be run looking at the number of students who participated in activities in two or more ILC areas, such as students who attended both EdTech and Library workshops.

Freeing up the web developers in each area from having to maintain their only independent systems meant that the developers were available to further enhance the shared system, and connect the system to other ILC areas, such as Reward Points. Now, when changes are made to the workflow in the Reward Points system, changes need not be made independently to all the activities in each ILC area that is affected by the changes.

The Unified Survey System (USS)

The USS addresses, like the Student Workshop System, a similar issue of inefficiency and waste of resources in trying to manage and conduct evaluation surveys throughout campus. Embedded within the SWS to provide a seamless integration with all surveys conducted by the different departments offering workshops, this

system allows for expedited results assessment and the necessary business intelligence to provide detailed response reports for each area. For the purposes of assessment, asking the same standard qualitative questions about each ILC area also gives the ILC Committee the ability to compare ideas and responses.

The USS has some built-in flexibility. While there is a pool of questions that applies to all the areas, each area does have the option to create a few custom questions that applies to its own unique services.

Tech Resource Reservation System (TRRS)

Having a pen and paper system, or an application that did not satisfy the requirements of a resource reservation system led to the development of the TRRS. The principle is the same as the Student Workshop System: to create a central place that allows faculty and administrators to easily reserve and manage resources. Faculty can access this application online and reserve a computer lab or multimedia cart by simply looking at a central calendar that shows all reservations and available dates. For administrators, this system enables the setting of any resource to be available to faculty, the management of reservations, and the defining of priorities all in a straightforward, intuitive fashion.

CURRENT CHALLENGES FACING THE ORGANIZATION

During the four years since opening the first ILC spaces (in September 2007), three major challenges have emerged: (1) increasing student participation to higher levels, (2) extending the concept despite physical space and budgetary constraints, and (3) maintaining the flexibility needed to continually evolve. Overcoming the first two will hinge on the ILC Committee's success overcoming the third. For the ILC Committee, maintaining its creativity, productivity, and strong team culture are the vital requirements, which, in turn, translate into flexibility and adaptability.

Kotter (2008), a Harvard Business School professor and an authority on leadership, describes a "change-friendly culture [. . .] It's a culture that constantly reinforces the behaviors of being alert, of being curious, of doing it now, of leading no matter where you are in the organization" (p. 35). To a large extent, the ILC Committee has exemplified, to date, the culture of change. Members of the ILC Committee include not just division or unit heads that represent each ILC space, but also the web developers who develop web applications and virtual spaces that unite the ILC areas. Thus, "no matter where you are in the organization" absolutely applies to this committee whose members cross hierarchies and divisions.

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Technology is continually evolving at an accelerated rate. Because of the inclusion of team members who work in a field of constant change, to some extent there is an inherent sense of urgency for the Committee. As web technology gets reinvented, the ILC members feel compelled to evolve the ILC web applications to keep up with new technology.

The composition of the committee has also remained relatively static. The lack of turnover has afforded team members the stability and time to develop the trust and respect needed for an effective team. Moreover, the original team members were selected with a strong sense of purpose, as well as strong sense of empowerment, which has been continually reinforced by administrative support of ILC initiatives. Over the course of three years, a synergistic team with a shared vision developed. Thus, the team's successful cross-divisional collaboration, and "change-friendly culture" led the ILC to its current, laudable status; however, the question remains whether the team's culture is sufficient to keep up with the first two persistent challenges.

The first challenge: increasing student participation to ever-higher levels is ongoing. At Hostos, while anecdotal evidence suggests that the sense of community is strong, students are not physically on campus as much as, for example, students at a college or university with primarily full-time students who reside on campus. Hostos students do not report a high level of participation in student activities. In 2010, 95% of Hostos students spent five or fewer hours each week involved in student activities. A colossal 78% spent no time at all participating in student activities (Student Experience Survey, p. 20). Twenty percent of Hostos students work at least twenty hours each week (Student Experience Survey, p. 21). Plus, nearly half of our students are part-time.

One function of the ILC spaces is to help build a sense of community and coherence for students. The ILC sees that it is not possible, at least to a large extent, to leverage the type of pre-existing campus community that would exist in a more rural school with dormitory life. Rather, it is the mission of the ILC to weave together student services on campus, thereby helping students feel like they are part of a single campus community. Potentially, for students whose lives are fragmented into careers, education, and family and community obligations, helping them feel less like they are pulled in many directions, at least when they are on campus, could positively influence their experiences at Hostos.

The primary means for increasing student participation, without an on-campus dorm experience to leverage, has been marketing. The ILC Committee's tactic has been to focus on advertising the Reward Points Program, which in turn, advertises and connects other ILC initiatives, such as the Library, EdTech, and Career Services workshops. The committee has created flyers, t-shirts for student employees in ILC areas, a promotional video, and enormous signs that were placed strategically on campus. Increasing the ways students can earn points has been another strategy

for outreach. The committee reasons that, for students, hearing about the Reward Points program each time they complete an activity that earns points would make them more inclined to complete another activity in order to earn even more points.

Marketing by increasing the ways students can earn points can create an additional challenge for the ILC Committee. Adding point-earning opportunities can have repercussions on assessment. As more students earn increasingly higher numbers of points each year, it becomes difficult for the ILC Committee to confirm that the higher levels of points earned is a result of increased enthusiasm for the program, or simply the availability of a higher level of total points that can be earned.

Students' experience with Hostos technology adds an additional challenge for ILC to reaching them. Although data shows that Hostos students have access and experience with technology, data also shows a lower level of engagement with Hostos communications systems and educational technology. While 96% of Hostos students report having regular access to computers, such as desktops, laptops, eBook readers, and/or Smartphones (Student Experience Survey, p. 28), only 8% report checking their email everyday (Student Experience Survey, p. 30). Yet, a larger number, 21%, check social networking software each day (Student Experience Survey, p. 30). The ILC Committee has begun using Facebook as an outreach tool. However, advertising would be significantly less challenging if students could be reached reliably and quickly, all using the same method of communication, such as email.

Continually monitoring students' use of technology, and regularly determining the most effective venues for outreach, has been a challenge for the ILC, requiring an investment of time and resources to regularly advertise extra-curricular activities to students. Finding these resources is particularly problematic in difficult budget times, creating what is the ILC's other challenge: growing the concept despite physical space and fiscal constraints.

The college's enrollment has doubled over the last 10 years, but real estate has remained relatively constant. Skyrocketing enrollment has led to an increased demand for limited resources. Although the committee would like to see additional ILC spaces, there simply is insufficient room for growth. This leads to the current ILC spaces feeling the pressure of a doubling of student usage. In addition, the necessary expansion in number of computer workstations has, in many cases, taxed rooms that were not originally configured with the electrical and data lines that they require. Ultimately, to serve an increasing student population in finite interior space is a challenge.

Thus far, the ILC Committee has developed the ILC concept on a shoestring. Although the space renovations were costly, encumbrances were partly offset by developing the web applications in house. After the initial development of the ILC concept, the Reward Points program has offered \$8,000-\$10,000 a year in prizes

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and event planning (for the prize distribution). With physical space limitations, seeking to offer more virtual ILC services will be financially challenging. Although some applications may be developed in-house, taking advantage of emerging 3D technology, mobile technology, or other cutting-edge products would most likely require a budget for research and development and licensing. A future challenge for the ILC Committee will be finding sponsorship and grants to fund the budget for prizes and enhancements to the virtual commons.

SOLUTIONS AND RECOMMENDATIONS

Growing the concept of the ILC is the primary goal and challenge at Hostos. To that end, the ILC Committee plans to focus on improving assessment and move to offer increasing numbers of services in a virtual environment. Continuing to brainstorm creative ways to encompass more students through the ILC activities is also a major initiative. Revamping assessment efforts to both enhance the programs and offerings of the ILC and to help provide evidence for internal and external funding opportunities are exigent for cementing administrative and external support for the concept.

Assessing the Reward Points program itself is one crucial step for the future. Currently, qualitative assessment undertakings focus on surveying student satisfaction with ILC-related services and programs. Currently, the Library, EdTech, and Career Services workshops, which are marketed through the ILC's unified calendar system and Reward Points Program, are assessed individually. The increase in enrollment in ILC-related services and programs might reflect the success of the ILC, but isolating the ILC Committee's efforts as the singular factor that caused the increases in ILC event attendance has been difficult. Establishing better assessment strategies to demonstrate that the ILC's contributions have significantly increased attendance at ILC initiatives is a future recommendation.

Developing surveys to qualitatively gauge student satisfaction with ILC efforts such as the Reward Points Program, the calendar system, and the reservation system would also provide needed evidence of the program's success. Although it is clear that students are earning more points in the Reward Points program every year, and although they can (and often do) take the initiative to email the Reward Points webmaster with comments, a survey developed in conjunction with the college's Office of Institutional Research is a future project for the ILC Committee.

Physical space constraints, combined with the increasing use of technology in education, have led the ILC Committee to focus on creating additional online, virtual ILC spaces rather than renovating physical spaces. For example, students can now use instant messenger to communicate with a reference librarian, and the

Academic Learning Center offers a myriad of virtual tutorials; but a next potential step might be a 3D world where students can each create an avatar and meet with a group for synchronous, online tutoring. Information literacy and career services workshops could also be taught in 3D environments.

This future direction does pose its own challenges for the ILC. 3D worlds can be seen as games, deemed inappropriate for higher education. The committee, however, must overcome this challenge because one possible recommendation for increasing student participation with ILC initiatives is to apply more gamification concepts to the ILC areas' offerings. Already the Reward Points System has many components of a game: earning points, redeeming sweepstakes entries, and answering trivia questions for points—these are all fun, and slightly competitive, game-like elements. Gamifying other aspects of the ILC's services and resources might increase student engagement.

Schell, Carnegie Mellon University Professor, in “Design Outside the Box” presentation at DICE 2010 spoke about the gamification of everything and said the educational system's policies and procedures already have game-like qualities; grading policies are a particularly good example, and he refers to Sheldon, a University of Indiana design professor whose students earn “experience points” for completing assignments. Sheldon's approach accentuates the game-like aspects of education. He adds elements of games to learning systems, an approach similar to apps like foursquare (www.foursquare.com), which turn everyday activities (like visiting a certain location) into a game. Laster (2010) explains:

Mr. Sheldon says last semester's students performed a full letter grade better in the course than students under the traditional approach . . . 'They are more engaged,' Mr. Sheldon said. They are the 'gamer generation, they are the social-networking generation, so this class is couched in terms that they understand.'

Various members of the ILC Committee have begun discussions about bringing gamification to Hostos. Convincing faculty that gaming and learning are not mutually exclusive might be a challenge for them, but perhaps one worth undertaking.

Finally, the last recommendation to consider for strengthening the ILC concept at Hostos is to combine interdisciplinary areas more formally, not just through the committees. Currently HALC and EdTech share one multimedia specialist. The library and HALC have shared the management of the budget that funds the technology tutors who staff both areas. Thus, formalized collaboration has already commenced, and a possible direction for the ILC Committee is to identify other opportunities like those.

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KEY TERMS AND DEFINITIONS

Collaboration: In this chapter, this term refers to the process where staff and faculty at all levels, across administrative and instructional divisions, work closely with each other to accomplish a common goal.

Gamification: Is the use of techniques for game design, game thinking, and game mechanics to enhance non-game contexts. Gamification works by making technology more engaging. The technique can encourage people to perform chores that they ordinarily consider boring (Kapp, 2012, p. 10-11).

Hostos Community College: Located in the South Bronx, NYC, the College takes pride in its historical role in educating students from diverse ethnic, racial, cultural, and linguistic backgrounds, particularly Hispanics and African Americans. An integral part of fulfilling its mission is to provide transitional language instruction for all English-as-a-Second-Language learners along with Spanish/English bilingual education offerings to foster a multicultural environment for all students. Hostos Community College, in addition to offering degree programs, is determined to be a resource to the South Bronx and other communities served by the college by providing continuing education, cultural events, and expertise for the further development of the communities it serves.

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Information Learning Commons (ILC): At Hostos, this theoretical framework and personnel structure facilitates an optimal teaching, learning, and support environment for our faculty and students. It is comprised of individuals who actively participate on a committee and consists of leaders and staff from various departments across the college that share a common vision to support students through technology.

Millennials: A generational framework or group of people also commonly referred as Generation Y, born in the early 1980s to the mid 2000s. For the purpose of this chapter, the population is generally marked by an increased use and familiarity with communications, media, and digital technologies.

Virtual Commons: Virtual Commons is the electronic component of the Information Learning Commons concept that helps reduce the need to visit different ILC venues and address physical space limitations. It provides an online interface that serves as a common portal for students and faculty to access support services like tutoring, training, technology reservation, satisfaction surveys, and more. For instance, it provides a centralized calendar where students can register and take workshops (some of which are online) offered by different areas such as EdTech, ACC, Career Services, and the Library. All applications under the virtual commons help to promote services, increase their visibility, eliminate duplication of efforts (some of which posed conflicts or confusion for students), maximize resources, and motivate students to actively engage in their own learning.