



Change Management in Practice: Creating a Culture That Promotes Technology Adoption

Carlos Guevara, Kate Lyons, and Kate S. Wolfe

Change agents influence social processes within an organizational culture, and this culture is part of what affects technology adoption. In his book, *The Diffusion of Innovations*, developed by Rogers in 1962 tried to explain the potentially predictable spread of new ideas and new technologies (2003). The EdTech team at Hostos Community College developed a strategy to use Rogers' predictable framework for technology adoption, Kotter's writing on change management (2002), and Senge's (2006) five

C. Guevara (✉)

Division of Academic Affairs, Hostos Community College, CUNY,
Bronx, NY, USA

e-mail: cguevara@hostos.cuny.edu

K. Lyons

Hostos Community College, CUNY, Bronx, NY, USA

e-mail: clyons@hostos.cuny.edu

K. S. Wolfe

Behavioral and Social Sciences Department, Hostos Community College,
CUNY, Bronx, NY, USA

e-mail: kwolfe@hostos.cuny.edu

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principles for becoming a learning organization to guide their strategies for reaching the office's educational-technology adoption goals. The team also later added Schein's (2010) cultural-analysis levels to their plan. This chapter discusses the values the EdTech team decided to espouse, their efforts to develop their own cohesive relationships and their defining of an innovators group at Hostos, and the discussions about management theories they used as a tool for planning and reflection. This chapter also introduces the Innovations Web, a faculty and staff development framework created by Carlos Guevara for visualizing the desired culture change.

IDENTIFYING RISK-TAKING, COMMUNITY-BUILDING, AND INNOVATION AS CORE VALUES

As the EdTech team experienced a transition process in 2010, they realized that they needed more than just a set of goals and tasks. They also needed a set of shared values and an understanding that all team members should work toward the same goals and that similar values would be driving their decisions. Based on the lessons learned over the past ten years, the team's first step was to identify the values that would guide them and the organization. They agreed that encouraging faculty to be risk-takers, community-builders, and innovators would be crucial for an organizational culture that promotes the adoption of educational technology. Change provokes a series of reactions, both positive and negative, and requires faculty to move outside their comfort zones and take risks; therefore, establishing a safe environment for these traits to flourish was a goal for Guevara, the EdTech staff, and the liaisons. Carefully considering the reasons why the team selected its values helped create that safe environment. EdTech team members were always willing to discuss these core values and share why they were encouraged, and they were also open to questioning and reexamining these values.

Of the values that the EdTech team wanted to promote, innovation topped the list. For the team, being *innovative* meant that the faculty would try to implement new technologies and new teaching practices, often before best practices for those strategies were developed. Being innovative meant being the faculty and staff that did the job of developing those best practices. The team recognized that being identified as innovators within Rogers' innovation adoption curve (2003) would require a significant amount of trial and error, and accepting the faults and errors that inevitably occur. For a midsize public college like Hostos without resources to spare, the EdTech team had to consider the possibility of encouraging faculty to be in the innovators group of the innovation curve. In many ways, waiting until others

have already developed the best practices and then doing research on new strategies to integrate teaching and technologies would be a more secure and pragmatic use of resources such as time and money.

The rationale of the EdTech team to prioritize innovation was ultimately based on two reasons. First, Hostos students tend to be nontraditional and could be better served by unconventional and more flexible ways to get them involved and engaged with education. Scaffolding and differentiated learning that are commonly seen in online courses, with the option for students to progress through the lessons at their own pace and convenience, made sense. Other educational technologies also offer students and faculty more flexibility and more ways to present content. Hostos' faculty seemed eager to try out new technologies to present their content in different ways and were especially eager to try out new technologies, such as lecture capture, so that students could review lectures repeatedly at their own pace. The EdTech team also believed that access to technology at the college would better prepare Hostos students for the workplace. Innovation with educational technology could improve educational outcomes for students. Secondly, faculty members who worked on projects with EdTech had greater scholarship opportunities. Historically, and during the period of change discussed in this book, the work of the faculty was generally well received at conferences, and many professors and staff members published scholarly articles about their work with the new educational technologies. Working together and collaborating also meant that these committed faculty members took time to reflect on their own teaching practices, which generally leads to better teaching practices (DuFour, 2004).

To a large extent, risk-taking goes hand in hand with innovation. For some faculty, the consequence of taking risks in the classroom could mean a waste of time or money. Faculty would devote their own time to developing new assignments, projects, and learning technology; they could also invest their own money in software or hardware licenses and not end up using their work in the classroom. Some faculty saw the risk for the students; being assigned to use a new technology meant that they would have to spend time learning the technology, which might not be the most efficient use of their time. In certain cases, the risks were greater. For example, in some departments, teachers needed to discuss the value of the new technology with their colleagues, and not all colleagues were so open to that discussion. In order to encourage faculty to take these risks, the EdTech team tried to mitigate the consequences of failure, as well as frame these risks as opportunities.

Finally, community building was crucial for EdTech to promote. The team needed the faculty that was already using educational technology to

help them promote this among others on campus and to help guide those who are new to educational technology, especially in the case of online learning. The EdTech office in Hostos has a limited number of staff, which is not enough to offer personalized help to all interested parties; however, encouraging a group of champions to develop and nurture that community helped increase EdTech's reach. The EdTech team, in order to create community, organized events and also organized team building opportunities. The team recognized that if the adoption of the technology was to follow the path described by Rogers (2003), they had to focus on people rather than technology itself. It would be not only about offering access to something new and sending marketing blasts to the entire campus community, but about fostering on-campus communities that combine specific technologies in a natural way and then encouraging these communities to grow.

TEAM DEVELOPMENT AND BUILDING A COMMUNITY OF INNOVATORS

As described in Chap. 1, the EdTech Team is comprised of the director, staff, and faculty liaisons (initially Professor Kate Lyons, then Dr. Kate Wolfe, and finally Dr. Kristopher Burrell). In addition, there was a small but well-established group of faculty members who were interested in integrating technology into their teaching. These faculty members were already teaching online, and, in some cases, they were some of the few faculty who had tested online teaching as early as the 1990s, near the start of CUNY's online education forays. This group supported the EdTech team, spoke positively about technology, and expressed interest in being part of the majority of what EdTech offered. The EdTech team recognized the value of this group's support and created an internal mailing list of around 40 faculty, named EdTech Innovators, created professional development activities specifically for this group, and tried to find opportunities for them to come together to collaborate on projects. This group also became a source of people who the team could rely on when they started initiatives that needed mentors to help others who wanted to participate.

Although the study of diffusion theory predates Rogers, he popularized it in his book, *Diffusion of Innovations* (2003). Salter described Rogers' theory about the rate of adoption:

The rate of adoption rises slowly at first. When around 20% of the population has joined, the adoption 'takes off.' The rate increases to a maximum when adoption reaches about 50% of the population. After this period of

rapid growth, the rate of adoption gradually stabilizes and may even decline. (p. 923)

The idea of a point when adoption “takes off” seemed crucial to EdTech at Hostos Community College, as did the idea of adopter categories. Salter (2005) described how, in Roger’s theory:

Individuals can be placed into adopter categories based on specific characteristics in relation to a proposed innovation. These categories are innovators, early adopters, early majority, late majority, and laggards. The *s*-shaped curve relates to the timing of adoption by the various categories. (p. 923)

Moore (1995) agreed and went further in emphasizing that the most difficult step in innovation adoption is transitioning from the early adopters (visionaries) to the early majority (pragmatists), and identified it as “crossing the chasm” (p. 17). Moore also stated that when an organization builds and maintains the momentum of the innovation through the “chasm,” the organization will experience a culture shift (p. 9).

The EdTech team’s approach was to encourage and nurture the groups on the left side of the curve—the innovators and early adopters. With their support, the approach was to reach out to other faculty members, and generally to visibly model technology adoption, thereby promoting EdTech initiatives to eventually arrive at that critical point where they “take off” (Salter, 2005) and reach the majority of faculty members. Through initiatives that strongly foster collaboration and the development of mentoring relationships between faculty members, the EdTech team’s goal was that the innovators would approach the early adopters first, then the early majority, and eventually take off, until the majority of faculty members were integrating some technology into their teaching. Certainly, different disciplines and departments fit better with certain types of technology, but the goal was that all sections of all courses would at least have a Blackboard component, and that all faculty would be aware of and interested in exploring appropriate technology for their disciplines.

In fact, this did happen to an extent, and by 2016 more than 50% of course sections at Hostos had activated Blackboard sites and added some content to their course shells. Many additional courses integrated other online technology besides or in addition to Blackboard, like ePortfolios, iPads and associated apps; faculty members were also experimenting with

lecture capture, other video/content creation tools, and recently virtual reality. Although the percentage of faculty taking advantage of technology in their teaching is not yet at 100%, it has increased quite a bit—to almost 80% as of 2018—according to the director of Educational Technology.

Hatton (2002) described the connection between the diffusion of innovations theory and change management, saying, “Diffusion of innovations is a theory originally designed to explain how change agents influence social processes” (p. 982). Additionally, Hatton explained how the theory has been applied more recently. “It has become a theory used to address how a technology or technological artifact becomes adopted, what forces affect the adoption process, and how proponents of a given technology or artifact may better influence the adoption process. The theory addressed how new ideas and technologies are communicated, evaluated, adopted, and reevaluated” (Hatton, 2002, p. 982). The EdTech team saw the theory as a way to propagate the message and as a part of a framework for understanding how the message could ripple through the organization.

In previous years, EdTech tried a variety of ways to encourage faculty to integrate technology into teaching—usually workshops, either one-day or multi-day, online or in-person, sometimes incentivized and sometimes not—and they had success in delivering content that way. Through those early attempts, what the EdTech team now refers to as EdTech Innovators was formed. This early foundation of the EdTech Innovators was key for moving to the next step in technology adoption, which was the plan to build communities around technology initiatives and encourage peers to teach each other. Several chapters discuss in more depth the Hybrid and Asynchronous Online Teaching Initiatives and the initiatives structured around specific technologies, such as lecture-capture software, using ePortfolios, and exploring apps for iPads used in the classroom. As the EdTech team increasingly saw the value of leveraging communities of practice to encourage technology adoption, they decided to purposefully nurture this group of innovators and provide opportunities for active participation in this community of innovators.

BONDING WHILE DISCUSSING MANAGEMENT THEORY: AN APPROACH TO TEAM BUILDING

Higgins and McAllaster (2004), based on their research about organizational culture, described it “as the pattern of shared values and norms that distinguishes one organization from another. These shared values and

norms indicate what is believed to be important in the organization – what is of value to organizational members” (p. 66). For the EdTech team, it was fundamental to analyze the culture of Hostos, in particular the aspect of the culture driving faculty’s likelihood to adopt new technology in their teaching. They then planned to establish intentional initiatives that would lead to the sustained acceptance of organizational values that would drive the needed changes for technology adoption. Schein (2010) proposed three levels of cultural analysis to take into account when learning about the essence of the culture or its DNA: (a) artifacts and behaviors; (b) espoused beliefs and values; (c) basic underlying assumptions (p. 17). He describes artifacts as behaviors and set processes, espoused beliefs and values as the organization and staff members’ missions and goals, and underlying assumptions as unconscious beliefs and values (Schein, 2010, pp. 17–30).

Being cognizant of the theory of learning organizations and its principles, which Senge prescribed for an organization to cultivate a culture of learning, was important to the EdTech team. Senge (2006) illustrated five principles needed for an organizational culture that is nimble and adaptable. He noted that workers have personal and professional development goals and a desire for “personal mastery” of their tasks and skills. Also, workers have a shared vision, meaning that the goals of individuals align with that of the organization, which has a culture that makes the effort to understand the framework for effective organizations. Senge states that team learning has to be prioritized and individuals should strive for shared decision-making and mutual accountability. Finally, he notes the importance of systems alignment, the principle that binds the other four and requires a holistic view of the organization. The EdTech team understood the importance of seeing the organization as a living organism and the impact any intervention can have on the organization. To visualize how the different elements connect and support to nurture this learning organization and promote culture change, Guevara illustrated the Innovators Web framework.

THE INNOVATIONS WEB

Based on the theories described in the previous section, the EdTech team realized that there was a need to establish a framework to help visualize the interconnected and interdependent nature of all initiatives, the artifacts created, and the service-and-support approach. This framework would

foster the type of systems thinking described by Senge, and change management necessary to apply the diffusion of innovation theory described by Hatton. The idea behind the Innovations Web is that all initiatives and artifacts are interconnected nodes (or pillars), each with a role that can have a positive or negative impact on the overall strength of this connected web. Guevara describes six main nodes that play a more important role in the nurturing and strengthening of the other nodes in the Innovations Web: (a) Ideas Generator, (b) Support Structure, (c) Dissemination and Outreach, (d) Community Building, (e) Continuous Improvement, (f) Innovators Recognition (Fig. 3.1).

The *Ideas Generator* node provides a visualization of a safe space to explore new ideas, technologies, and teaching approaches. This is the node where the brainstorming and initial planning occurs, where the seed of an idea begins; through the other nodes, it can mature into pilot initiatives and possibly be accepted as an institutionalized practice. Examples of results from the Ideas Generator node, which will be described in detail in the next chapters, include initiatives such as iPads in the classroom, a proj-

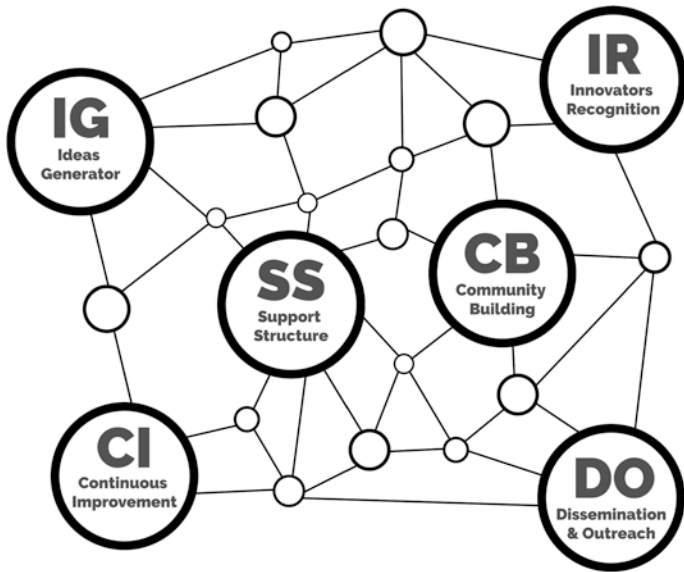


Fig. 3.1 Innovations Web

ect for the development of lecture capture, the creation of a committee on the adoption of ePortfolios, and other initiatives on active learning and virtual/augmented reality. The generation of ideas occurs everywhere and at any time, but, if there are no spaces created to intentionally capture these ideas, opportunities for innovation could be lost.

At Hostos, the establishment of spaces such as advisory councils, task forces, faculty inquiry groups, teaching days, common-reading initiatives, professional development retreats, celebration and recognition of innovations, and more provide a safe space for the exploration and capture of new ideas that can lead to the flourishing of initiatives or the adoption of best practices. The strength of this node lies in identifying all the different ways of creating spaces to share ideas and exchange experiences and perspectives on the use of technology. Determining which of these forms would work depends to a large extent on the culture of the organization, and, like the way in which the adoption of innovation is initially conceived, there will be many trials and errors until the structures, activities, and places are seen as safe spaces to share.

The *Support Structure* node ensures that innovators feel safe and supported in the exploration of new ideas and technologies. The EdTech team became aware of the need to prioritize a support system for faculty who use technology for the first time in their teaching through the evaluation of the successes and failures of previous initiatives, and by listening to the experiences of the faculty who shared the obstacles in their ways to integrate new technologies or change their pedagogical approaches. There was also a clear need for better support for students to take advantage of new technologies, especially for students in online courses. Instructional designers, faculty mentors, design interns, and technology assistants are part of the support structure that helps create this safe environment. The EdTech Office implemented an open-door policy where faculty or students do not need to schedule an appointment to receive support from any member of the EdTech team.

The EdTech team noted that the path to finding support should be more transparent for students and advocated for changing and combining administrative processes to increase transparency. For example, in some cases, the organization of services reflected the hierarchical divisions of the offices, which are good for administrative purposes but not necessarily for the end user. A student or instructor does not need to know that Unit X is providing a particular service and that, if they need something more related, Unit Y must provide them, which confuses and forces students to

understand the internal structures of these units. From the point of view of the user, if they require a service or support for a particular need, they do not need to know the internal processes of these services; they only need a solution for their need. It was a priority of the EdTech team to work together with other units and departments on campus to ensure that end users would receive appropriate and quick referrals to the right areas and that they would be served as best as they could by any administrator or staff member they found. At Hostos, there are many examples of the creation of these synergies and, particularly from the technological and pedagogical areas, there has been an evolution in this area (see Section II).

The *Dissemination and Outreach* node focuses on establishing clear structures to communicate resources, support, initiatives, and opportunities to innovate teaching practices through technology. The message must be coherent, concise, and attractive to the target audience. The media must be varied enough to reflect the different channels used by the college community, from printing, email, the web, text messages, social networks, to word of mouth. EdTech established a brand strategy to promote the initiatives and keep the college community informed and excited about innovation opportunities. The EdTech team changed its name from Instructional Technology to Educational Technology (EdTech) as an initial effort to establish an effective communication structure. Several communication devices were created to further improve their brand change and outreach efforts, such as the Innovation newsletter, email blasts called “Tips of the Week” and “Tips of the Month”, professional development calendars (available in both print and digital form), social media pages, website updates, a video channel, text messages, and more. Another important element of this node is the dissemination of the results of the work and the achievements of the initiatives created by the EdTech team through various channels, such as conference presentations, research studies, and publications.

The *Community Building* node focuses on establishing ways to effectively keep the members of the organization engaged. Along with the support for the generation of ideas, the establishment of spaces for the faculty to meet together serves as a driver for building the community and disseminating the initiatives, support services and activities offered by EdTech. On campus, EdTech realized that email opening rates were minimal and seemed to have decreased over the years, and that the most effective dissemination tool would be word of mouth. All committee meetings and faculty inquiry groups, professional development activities, and inno-

vation celebrations have been the perfect tools to convey the message and keep the teaching community informed and engaged.

The *Continuous Improvement* node focuses on ensuring the continuous evaluation of the different initiatives and technological innovations at Hostos. Professional development and new-technology pilot programs were planned together with evaluative instruments to determine the qualitative and quantitative impact and relevance of such technologies for teaching and learning. The EdTech team works closely with the Office of Institutional Research to analyze the different performance indicators of the courses that piloted a specific technology. The results of the analysis and satisfaction surveys provide opportunities for the improvement and continuous development of approaches and initiatives. To continue studying the development and implementation of online learning and new initiatives at Hostos, the creation of the Hostos Online Learning Assessment task force (HOLA) has been fundamental. The results of research conducted on the perceptions of students and faculty about online learning have led to the establishment and/or improvement of initiatives and professional development (see Chap. 16).

The *Innovators Recognition* node focuses on strengthening and cultivating excellence through recognizing the risk-takers, pioneers, mentors, early adopters, and community-builders with a vision centered around promoting innovation, risk-taking, and community-building. It was very important for the EdTech team to acknowledge the amount of work innovators invest in trying new things above their already saturated workload comprised of teaching, research, service, and so on. As a result, EdTech established a structure to show appreciation and recognition of their contributions to teaching and learning. A number of artifacts were created to establish this structure; for example, the Innovation Celebration is an event celebrated every semester to recognize the top innovators and to create a space to nurture the community of innovators at Hostos. During this celebration, new technologies are introduced, and great networking, food, prizes, and a celebratory cake are part of these celebrations. The Innovation Chase is another artifact that was introduced in 2014, which consists of a system of digital badges that represent use of and expertise in different technology or new pedagogical strategies adopted by faculty. It uses a game-based learning approach to encourage continuous participation and healthy competition, as each badge that faculty earn has points that accumulate and are used to identify the top innovators who are recognized at the Innovation Celebrations (see Chap. 9).

Another artifact that was created to strengthen this node and others is a conference that extends beyond Hostos Community College, which provides an opportunity to showcase the innovative work faculty have been doing in the classroom. This conference was born in 2013 and is the result of a collaboration among the three Bronx CUNY colleges: Bronx Community College, Hostos Community College, and Lehman College. The goals of this initiative are to bring together faculty from community colleges and senior colleges, provide a venue to share best practices and experiences in trying out new ideas or technologies, and, most importantly, to promote cross-institutional and cross-disciplinary collaborations (see Chap. 6).

Niemiec (2017), in an article in *Psychology Today*, compiled some different definitions of mindfulness. He stated: “Mindfulness means paying attention on purpose, in the present moment and without prejudice” and “Mindfulness is the self-regulation of attention with an attitude of curiosity, openness and acceptance.” The EdTech team intentionally tried to create a community of innovators in Hostos. The team devoted considerable effort to reflect on the behavior of the organization and how to create change in a way that supports and encourages faculty and staff on campus. While the values that the EdTech team wanted to encourage were risk-taking, community-building, and innovation, the team also tried to lead with a focus that was supportive, egalitarian, and self-aware. The members of the team tried to reflect in a conscious way on their behaviors and attitudes, and to lead with openness.

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