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MANAGEMENT OF EDUCATIONAL TECHNOLOGIES IN NEW JERSEY  
COMMUNITY COLLEGES: A NARRATIVE INQUIRY

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Educational Technology Leadership

Submitted in partial fulfillment  
of the requirements for the degree of  
Doctorate in Educational Technology Leadership  
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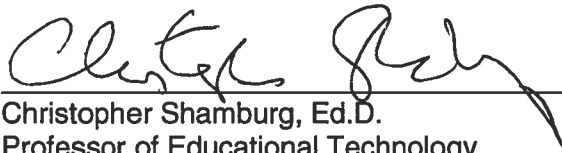
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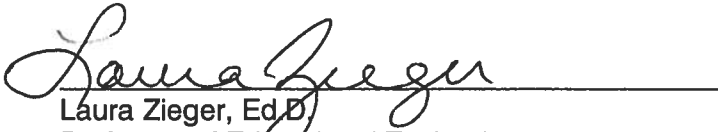
A Narrative Inquiry



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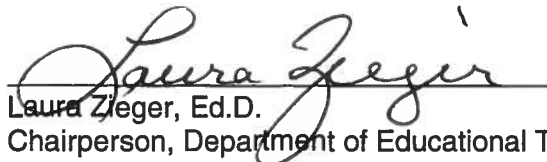
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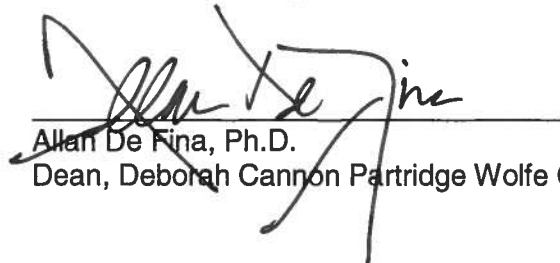
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## Abstract

Through analysis of publicly available websites, in combination with interviews of staff and administrators involved in the management of educational technologies in their designated institutions, this qualitative study was an investigation into how New Jersey community colleges support and implement educational technologies. The management of educational technology is subject to regulation on a variety of levels, including state, institutional, and divisional. Faculty interested in implementing educational technology in their courses have the option of pursuing acquisition of technologies through the institutional system, which at times may be lengthy and restrictive. They can also turn to the educational technology that can be accessed online. This study illuminated the effects of operational restrictions within community colleges, impacting the adoption of college-wide educational technologies.

*Keywords:* educational technologies, technology management, New Jersey community colleges, higher education, policies

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## Chapter I. Introduction

### Background

“The quicker you let go of old cheese, the sooner you can enjoy new cheese” (Johnson, 1998, p. 60). This saying expresses a generally accepted principle in business: Adapt to change quickly or get left behind. In less than 50 years, computing technology has emerged from a niche outlier in our culture to a driving force in human evolution. The remarkable pace of growth in computing technology has empowered a worldwide transformation in information consumption, conception, and utilization.

Progress in the field of information technology continues to be measured in months, rather than years. As computing technology grows and develops, its use and impact fall outside the boundaries of the marginalized cyber alleyways once occupied exclusively by hobbyists. In the 30 years it took for computing technology to move into the mainstream consumer market, it has blossomed into a dynamic utility. It has brought dynamic changes in how people relate to each other, including how they communicate.

As computing machinery became more user-friendly, people found new ways to use it. Changes in computing technology have since affected many aspects of people’s daily lives, in many different ways. In the developing world, cheap mobile devices have brought forth a revolution in technology, providing affordable access to information and digital communication. In the global north, industries have been revolutionized by “smart” technologies.

Cornerstones and foundations for best practices have been rewritten, and business completely revolutionized. The publishing and music industries have substantially changed their business models, adopting “free” economies and completely changing how and where they make money (Anderson, 2009). In education, the emergence of massive open online courses (MOOCs), and free content resources (e.g., Khan Academy) have created a conversation questioning the value of traditional teaching methods

In addition to questioning value, emerging technology-driven free resources are challenging how technology is being used in traditional institutions of higher education. It is the pace of development that challenges longstanding practices, encumbered by centuries of history and tradition.

### **Problem**

Ushered in by the digital era, institutions of higher education have embraced educational technology, though not without trepidation. The adoption of educational technologies by institutions of higher learning means negotiating a rapidly changing information technology culture with the deep-rooted traditions and formalities of academia.

In higher education, information and computing technologies have created opportunities for students to complete their education free from the constraints of time and place, allowing students and faculty to communicate with each other and explore subject content through an array of dynamic tools. With the rising costs of higher education, and a widening gap between the availability of highly skilled labor and emerging jobs, community colleges are emerging as a go-to resource for individuals seeking to meet the demands of today’s job market. However, community colleges

operate with very limited resources, leaving these institutions to mitigate the process of running a low-cost institution, while continuing to provide high-quality education (McGoldick, Campbell, Nachtigal, Wefing, & Wellbrock, 2015; White House, 2009).

Today, community colleges are being called upon to facilitate a growing demand for a skilled labor force by providing distance learning course options, building on basic skills, and creating career pathways (White House, 2010). The shift in the community college demographic, changing pedagogical practices, and expanding obligations has placed immense pressure on community colleges to perform according to new expectations, while meeting the goal of remaining affordable and open-access. Research on the use of education technology has explored the use, potential, and innovation of technology utility and best practices for teaching and learning. However, more inquiry is needed into how innovation in education technology materializes into practice within institutions, and how education technologies are recognized, implemented and regulated through policy (Barber, 2011; Garza-Mitchell, 2011). Using paradigmatic-type narrative inquiry, this study was an examination of how regulation of educational technology in higher education is presented through the lens of existing policies and the narratives of the leadership responsible for spearheading the effort.

### **Purpose**

The research was an exploration of educational technology regulation in a set of regional New Jersey community colleges. Narrative inquiry is the analysis of the text of the story (Merriam, 2009). In this study, texts included transcripts of interviews, as well as the content published by community colleges in the public space (Merriam, 2009; Patton, 2002). From an epistemological perspective, these texts each represent an

interpretation of a reality (Bruner, 1991; Depperman, 2013; Riessman, 2008). Through the comparison of these representations of the management process, the study represents a comparison between the formal mechanisms for the management of educational technology and the institutional educational technology narrative in New Jersey community colleges. The researcher explored the process of educational technology management as it is presented to the public as a kind of transparency and the relational dynamics of operation as presented by those who participate in and are agents of the process.

### **Community College Governance**

Historically, community colleges were developed to remove the financial barrier associated with a post-secondary education, through expanding access and equity in higher education (Gilbert & Heller, 2013). This call to remove the financial barrier as a deterrent in the pursuit of education came as a result of a report published in 1947 by President Truman's Commission on Higher Education as cited in Hutcheson, 2007b. The Commission was created following the execution of the Servicemen's Readjustment Act of 1944, which included funding for education and training, home, farm, and business loans as well as unemployment pay (U.S. Department of Veterans Affairs, 2015). The Commission was formed to examine the purpose of higher education in democracy (Hutcheson, 2007b). In 1947, the Commission published a report entitled, "Higher Education for American Democracy: A Report of the President's Commission on Higher Education," and concluded that general education was a component in the development of ethical principles consistent with democratic ideals, and informed citizenship (Hutcheson, 2007a). The Commission found that financial limitations to higher



education were limiting the development of the national workforce, as potential leaders were financially disadvantaged and unable to afford an education (Gilbert & Heller, 2013; Hutcheson, 2007a).

The President's Commission report identified community colleges as the vehicle for providing universal access to postsecondary education and workforce development (Boggs, 2010). Community colleges have realized many of the report's recommendations. Indeed, community colleges have emerged as an integral element in responding to community needs and the employment market (Hutcheson, 2007a).

Teaching is a dynamic process, sometimes requiring adjustments on demand to facilitate student learning needs. When needed, faculty can quickly turn to technology for an incredible amount of resources to deliver dynamic learning experiences.

### **Pedagogy and Education Technology**

Faculty can find readily available educational technology resources through internet searches, industry blogs, and general browsing. For example, available tools include a classroom response tool that would be a useful way of providing a general overview of how well students understand the subject while lecturing. Poll Everywhere is an example of a web-based polling tool faculty can use in the classroom. Engrade and Edmodo are free learning management systems available to faculty. Students are asked to enroll when the class starts, and faculty have full control over a class site. Tools such as Remind 101 are available to enhance communication through SMS messaging, allowing the faculty member to text the class on demand.

These types of tools follow a "freemium" business model, in which a service or product is available free of charge with the option of purchasing an upgraded version of

the service or product. Anderson (2009) described this business structure as following a 5% rule, where the cost of maintaining the product is so low that as long as 5% of all users are purchasing a premium version of software, the company makes a profit. While the use of the freemium software may seem harmless to the faculty or students, there are unintended consequences. By engaging these resources, the users are trading in a digital identity economy, exchanging valuable user data for access to the free version of the software (Anderson, 2009).

To better understand the circumstances under which faculty make decisions with regard to educational technology, it is important to assess how institutions of higher education operate, why certain decisions are made, and the potential consequences of those decisions. This study was an exploration of two bodies of texts having to do with the implementation and management of educational technology in New Jersey community colleges. Although there is a large variety of open or free software resources for faculty to choose from, this research encompassed how New Jersey community college policies and regulations contextualize the practice of faculty use of freemium software. Understanding how one kind of market-driven educational technology is managed and implemented in New Jersey community colleges is intended to shed light on the general practice. For the purpose of this study, freemium software typically requires that students either create accounts or log in through existing social media accounts, in order to make use of the application. Users are also required to enter into a terms of service (TOS) agreement with a vendor not vetted by the institution. In this way, the operator of the application taps into personal data relating to users, who are, in effect, forced to agree to the operator's terms.

To contextualize the process of managing education technology, this study included a review of current institutional policies impacting the acquisition, implementation, and use of educational technology in coursework of the New Jersey community college system. The goal of this study was to arrive at insights as to how technology is regulated, examining policies pertaining to the use of freemium technologies, and exploring the organizational processes from the perspective of supervising staff and administrators.

### **Theoretical Framework**

Administrators, either deliberately or otherwise, influence the direction taken by the institution in various ways. Through the rules they establish, the administrators shape the culture and social structure of the institution, facilitating the implementation of their vision of educational technology in the classroom. This inquiry is framed by adaptive structuration theory (AST), which suggests that although an organization has formal structures (rules, policies, etc.), the individuals managing those rules have the power and authority to change the formal organizational structures.

Adaptive structuration theory moves the framework of structuration theory developed by Giddens (1984) to a new space, addressing the complexity of the technology–organization relationship (DeSanctis & Poole, 1994). DeSanctis and Poole (1994) pivoted the lens to focus on two points of inquiry: structures that are created and maintained through the use of advanced technologies, and the structures that actually emerge when users interact with the technologies.

This research served to investigate the regulation of emerging digital resources within the rules of a formal institutional social structure. The idea was to explore how

access to alternative resources has impacted this particular component of the social structure, including considerations with regard to the mitigation of risks and responsibilities.

The social structure at hand is the organizational relationship between faculty and administration. Administrators set expectations with regard to the use of educational technology in the classroom, though they do not necessarily provide the resources that some faculty may consider necessary. Alternative resources are available and may be utilized by the faculty to achieve goals, resulting in actions that are not necessarily sanctioned by the social structure.

This research included exploration of existing policies pertaining to the implementation of educational technology in community colleges using two sets of data. The first set is representative of the formal policies distributed to the community in writing, developed by the collective institution, and communicated via the institutional website or other texts available to the public. The other set of data came from interviews with administrators, directors, and coordinators responsible for the implementation of educational technology—the individuals overseeing the technical use and support of the various systems.

### **Purpose**

This research was an exploration of how regulations, resources, and organizational structures impact the implementation of educational technologies in New Jersey community colleges. Studying how community colleges manage educational technology gives institutional stakeholders the opportunity to appreciate educational technology from several perspectives. Through the lens of adaptive structuration theory

and by using narrative inquiry, this study was aimed to identify the barriers to educational technology initiatives in New Jersey community colleges.

### **Research Questions**

To guide this study, the following five research questions were articulated:

RQ1: How do New Jersey community college policies structure the use of institutional educational technology resources?

RQ2: How do existing policies in New Jersey community colleges regulate the use of software in the classroom? How are community colleges in New Jersey regulating the classroom use of freemium software?

RQ3: How do New Jersey community colleges policies address the implementation of educational technologies in the classroom?

RQ4: How do New Jersey community colleges enforce regulation relating to the use of educational technologies in the classroom?

RQ5: What resources are made available to support and implement educational technologies? Do these resources incorporate applicable institutional policies?

### **Need for the Study**

This study was an exploration of educational technology from the perspective of the administration to understand the relationship between emerging pedagogical practices and institutional users and to explore how institutions have managed and addressed the unique organizational challenges prompted by the use of educational technology. The study addressed points 4.5 and 4.7 in the National Education Technology Plan, published in 2010, which call on institutions to develop standards for centralized educational and administrative technologies learning (Office of Educational Technology, 2010). This

study was aimed to inform what the government identifies as barriers for teaching and learning (Office of Educational Technology, 2010) to bring perspective on the issue of fragmentation of educational technology management in New Jersey community colleges.

While technology is introduced into the classroom to benefit the student and meet goals and objectives of the institution, it is the responsibility of the institution to collectively and collaboratively create a computer operating environment that is safe for users. This means that institutions of higher education must leverage organizational leadership unanimously to navigate the competing factors of keeping operational costs down and addressing the needs of faculty and students.

In community colleges, shared governance with the faculty means that educational technology decisions are made in committees by faculty (Miller & Miles, 2008). However, in traditional corporate roles, the Chief Information Officer (CIO) procures and maintains existing institutional technologies, whereas the Chief Technology Officer (CTO) decides on the technologies in which the institution invests (Shurville, Browne, & Whittaker, 2010).

Researchers such as DeBlois (2006), Shurville et al. (2010) have suggested that formal academic technology leadership is necessary. However, the tradition of academic freedom—although it varies across different institutions—includes some level of autonomy relating to classroom presentation and discussion, allowing faculty to “be solely responsible for how the courses are taught, and what resources are used” (Smith, 2007, p.6). In this organizational framework, the management of educational technology is fragmented and overseen by separate entities in the organization.

Shurville et al. (2010) argued that the role of a senior academic technology officer is needed to address the change in the definition of educational technology. The delivery of academic technology (technology used in the classroom by faculty and developed by instructional technologists) needed formal leadership. This sentiment was resonated in earlier publications, such as that of DeBlois (2006), who argued that technology enhanced teaching and learning had evolved into a new dimension within IT, with challenges that are somewhat different from the traditional IT operation..

In a study on information technology governance, risk, and compliance in higher education, Educause Center for Analysis and Research (2014) found that there were gaps between the perceived importance of security risks and the effectiveness with which they were addressed (Bischsel & Patrick, 2014), demonstrating that little progress had been made in the 8 years between the studies. There has been little in the way of developing policies for the use of free software in higher education. Further, as resources dwindle and models of funding change between political cycles, institutions of higher education at all levels (institutional, state, and federal) need to find ways to provide services at the lowest possible cost. Often, institutions turn to free software as a solution. Despite an increase in adoption of free software, terms of policies and procedures for compliance and security have not been updated (Ven & Verelst, 2006).

### **Definitions**

**Freemium software.** Freemium software refers to software resources offered using a combination of the “free” and “premium” model (Anderson, 2009). Software providers offer a free software version with basic functionality, enticing users to pay for the premium model, offering desirable additional features (Wagner, Belin, & Hess,

2014). Anderson (2009), described this model as a “two-party” market, with two user groups, and costs distributed in a way that consumers believe that the product they are receiving is free. Cost does not always refer to monetary exchange, and can often manifest in the form of data exchange. Driven by incentives, the freemium model includes a passive form of data collection, unbeknownst to the user, yet potentially profitable for the freemium provider (Anderson, 2009).

**Purchasing contracts.** Under the New Jersey Set-Aside (N.J.S.A.) Program 50:18A-3, the state of New Jersey created an entity to procure products and services for state agencies. Some community colleges fall under the categorization of state agencies; and depending on their individual categorizations, would be restricted to use New Jersey state-contracted products and services to adhere to fair and open purchasing procedures (State of New Jersey Department of the Treasury, 2015). If the organization needs to procure products or services outside of the state contract, alternative procedures exist, including access to purchasing consortiums such as the Western State Contracting Alliance and the New Jersey Council of County Colleges Joint Purchasing Consortium. These entities regulate how New Jersey Community colleges procure technologies.

### **Assumptions**

The study was limited to a population of administrators, directors, and coordinators currently employed by New Jersey community colleges. These individuals were selected based on their titles and roles as technologists or technology administrators. Organizational structures, decision making, and authority differ among organizations. For this reason, three different individuals from the same institution were invited to be interviewed. By collecting various perspectives on one system, general attitudes toward



the use of educational technology in the institution could be assessed and cross-analyzed. As the researcher was looking at an individual agency within an institution, these variations in organizational structure between institutions added a new dynamic to the findings, thereby contributing to the understanding of organizational structures within the set of identified colleges (Miller, Le Breton-Miller, & Lester, 2013).

Another assumption was that the interviewees were being truthful during the interviews. As a representative of an institution, the interviewee is put into the position of balancing personal opinion and professional standing, often crafting any outward-facing narrative relating to institutional practices. The interviewees were questioned as representatives of the organization. The framework of the study involved comparing the official written narrative (i.e., in public documents) with that of the informal narrative revealed through the interviews. As for the analysis of public documents and citing the Higher Education Opportunity Act, it was assumed that the public documents are current and valid representations of the institution, unless otherwise indicated by the institution.

### **Summary**

This research included use of adaptive structuration theory to explore how New Jersey community colleges implement and manage educational technology. The study was conducted using paradigmatic-type narrative inquiry. Understanding educational technology management is pertinent, as it is the obligation of the institutions to provide educational technology in the classroom, a requirement made by the student body, by the market (workforce demand), and by the accrediting body.

Chapter II, the literature review, is a presentation of the context for the implementation of educational technologies in the classroom. Included is a review of

how community colleges operate, from governance structures to current regulations. The literature review also includes the contractual relationships between stakeholders, including emerging issues such as intellectual property rights, digital identity security, and identity management. This study was intended to enhance understanding of stakeholders' positions in relation to educational technology products. Stakeholder obligations and needs were explored, including needs associated with having or gaining digital literacy or digital competence. Finally, the chapter also contains discussion of the theoretical framework described previously, its origins and applications in examining the relationship between the institutions and technology and the stakeholder as an agent with the potential to shape the process under review.

## Chapter II. Literature Review

The purpose of this chapter is to provide the background and context of the management of educational technologies in New Jersey community colleges. A substantial body of literature exists on educational technology, best practices, and pedagogical techniques. This research does not address how educational technology is used; rather, it seeks to explore how educational technology is managed in specific institutions. Therefore, in this chapter institutional processes and procedures are contextualized through a review of state and institutional mechanisms in place for overseeing the operations of community colleges. Providing another facet of educational technology management, the chapter includes discussion of the role of mass communication technology in education, the fusion of mass communication technology and information systems technology at the turn of the 21st century, and finally, the convergence of the two as a platform for digitization of pedagogical strategies.

The chapter closes with a presentation of adaptive structuration theory (AST) as a framework for this study. A review of the original structuration theory is included to contextualize the history and philosophy of structuration theory. AST is presented as a specialized framework for the exploration of organizational dynamics and communication within New Jersey community colleges. While structuration theory was used to explore organizational and behavioral elements of the narrative texts, critical

discourse analysis was also used to assess the relational dynamics between organizational members, subjects, and processes.

### **Higher Education**

The management of educational technology in New Jersey community colleges is an operational subset of the overall operation of institutions. It is therefore necessary to explore the specific laws and traditions of the institutions in question.

Community colleges in the United States are unique in the sense that they are influenced by the traditions of the European university model, without a religious component. Community colleges are frequently defined by the principles of shared governance, liberal arts and vocational training, academic freedom, and an academically comprehensive open-access education (Nguyen, 2015). These principles are shared by the New Jersey Council of Community Colleges (NJCCC, 2015), and exist as remnants of the various histories from which higher education stems.

Shared governance in community colleges is a form of collaboration between the faculty and the college administration, having originated in the universities of medieval Europe. In Western and Central Europe, the university was the center of society's social structures (Hofstader, 1955). In addition to providing clerical training for the church and state, the university taught law and medicine (Dmitrishin, 2013). At that time, the church and universities believed that theology faculty were vital for the teaching of law and divinity, as well as for church governance. A set of regulations emerged to form the basis for shared governance between the faculty and the universities (Cobban, 2001).

Today, New Jersey community colleges recognize that shared governance is fundamental to operations, often entering into shared governance agreements through bargaining agreements (NJCCC, 2015). While not legislated, shared governance is recognized as a principle element of operations by the Middle States Accreditation Committee, the accrediting body serving New Jersey community colleges, as well as the NJCCC. It is generally accepted that collective faculty participation in governing is pertinent to the welfare of the institution.

### **Community Colleges and U.S. Servicemen/Servicewomen**

To better understand the current state of community colleges and to answer the question of how New Jersey community colleges manage educational technology, it is important to understand the history of modern higher education. Philosophical, organizational, and relational artifacts are remnants of the past, yet are presently affecting how educational technology is being managed. The Truman Commission on Higher Education and the GI Bill were revolutionary developments, serving to create pivotal moments in the history of higher education. This period of reflection brought forth a conscious discourse about the role of higher education in the United States, its purpose and its philosophy. The Commission on Higher Education was created following the execution of the Servicemen's Readjustment Act of 1944, which included funding for education and training; home, farm, and business loans; and unemployment pay (U.S. Department of Veterans Affairs, 2015).

In 1932, WWI veterans marched on Washington, DC, demanding that the promises of compensations made to them by the federal government during WWI be

fulfilled. During the war, soldiers were promised bonuses for their service. Upon returning home to a country suffering from an economic depression, it was revealed to them that the bonuses would not be available until 1945 (Dickson & Thomas, 2006). While the more prosperous states had benefits for veterans, the majority of veterans experienced economic strife and inconsistent compensation for time served in the military forces (Dickson & Thomas, 2006). The demonstration lasted long enough for protestors to set up a shantytown, with a population of over 20,000 people “squatting” at the foot of Capitol Hill. On July 28, 1932, the U.S. Army was sent in to the shantytown to evict the residents. Chaos and violence quickly ensued. Before long, the shantytown was set ablaze and burned to the ground. Four years later, the federal government issued WWI veterans the bonuses they had been promised. In 1944, Congress passed the GI Bill in recognition of the value of the service provided by the veterans to the country, and to help veterans transition to civilian life (Dickson & Thomas, 2006).

The purpose of President Truman’s Commission on Higher Education was to examine the purpose of higher education in a democracy (Hutcheson, 2007b). In 1947, the Commission, published a report entitled, “Higher Education for American Democracy: A Report of the President’s Commission on Higher Education,” and concluded that general education was an essential component in the development of the principles and ideals that serve as foundation for a well-informed citizenry (Hutcheson, 2007b). The Commission found that the financial demands of higher education were limiting the development of the national workforce, as potential leaders were financially disadvantaged and unable to finance an education (Gilbert & Heller, 2010; Hutcheson, 2007a; President’s Commission on Higher Education, 1947).

Between 1947 and 1964, the country changed dramatically. The economy recovered and the United States entered a new era, ushered in by the Civil Rights Movement and the Vietnam War. By the 1960s, community colleges were urged by the Carnegie Commission of Higher Education to adopt an open-door policy, and move away from the traditional European university model of exclusion (Rudy & Brubacher, 1997; Thelin, 2011). According to Rudy and Brubacher (1997), “The institutions best matched to such lowered entrance barriers were comprehensive junior colleges providing both academic and vocational, transfer and terminal programs” (p. 260).

### **Oversight in Community Colleges**

While each state has a unique approach to community colleges and workforce development, New Jersey community colleges are subject to several external entities providing oversight with regard to the quality of the curriculum, as well as the operational aspect. For the purposes of this research, the Middle States Commission for Higher Education (MSCHE), and the NJCCC were reviewed. This section includes a sampling of current New Jersey statutes that affect how educational technology is identified, procured, and implemented.

**Middle States Commission on Higher Education (MSCHE).** Today, the MSCHE serves as the accrediting body for New Jersey community colleges. The need to accredit institutions of higher education emerged as a result of the Flexner report on medical education, published in 1910 (Duffy, 2011).

As of 2013, the MSCHE (formerly, the Mid-Atlantic Region Commission), now operating independently from the Middle States Association, has been recognized by the Commission on Higher Education to conduct accreditation activities for institutions of

higher education in Delaware, the District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Puerto-Rico, and the U.S. Virgin Islands. In total, the Commission oversees the accreditation of 523 institutions throughout its regions (MSCHE, 2015).

The Commission maintains 14 standards for accreditation, with seven focused on institutional context and the other seven focused on educational effectiveness. A number of standards relate to technology, requiring technical resources to meet institutional goals and objectives (Standard 3), and the curricula are designed so that students demonstrate technological competency (Standard 4; MSCHE, 2015).

**New Jersey Council of Community Colleges (NJCCC).** The Council of Community Colleges, New Jersey Laws, accreditation bodies and purchasing consortiums control for a variety of variables that influence how New Jersey community colleges operate academically and administratively. Through these controlled variables, in this study, the researcher was able to isolate the management, implementation, and oversight of educational technology, as unique organizational manifestations for each individual institution. In addition to legislative representation, the Council of County Colleges negotiates pricing on behalf of member community colleges through the Joint Purchasing Agreement for products and services, facilitates professional development, and operates a New Jersey Community College workforce consortium. Through the consortium, executive leadership from the member community colleges have executed a General Education Foundation Policy, creating a guide to facilitate the offerings and requirements for degree programs, as well as suggested learning objectives. The combination of state oversight for purchasing, objectives, and shared resources creates a



controlled environment of operation for all 19 member community colleges (NJCCC, 2015).

**State regulations.** The NJCCC was established as a result of one of many state statutes regulating New Jersey community colleges. As state entities, community colleges are subject to Titles 19 and 18A, regulating institutional disclosure, finances, student rights, and distribution or disclosure of personal information. Statutes and acts relevant to the operation, acquisition, adoption and use of educational technology include 19:33A-20.4, 18A:64A-25.4, 18A:64A-26, and 18A:3-30.

Under N.J.S.A. 19:44A-20.4 et seq., later clarified by P.L. (Public Law) 2007, community colleges must engage in a “fair and open” process (JUSTIA, 2013). The fair-and-open process refers to a set of rules and restrictions created by the state’s Local Unit Pay-to-Play law. This statute addresses community colleges planning large qualifying capital expenditures, frequently including technology. If the community colleges need to hire firms or purchase large qualifying equipment, they must comply with the fair-and-open process. The college must publicly solicit for the firm or equipment vendor through public advertisement, establish a basis for its award, and publicly announce when the project has been awarded to a bidder (State of New Jersey Department of Community Affairs, 2005, 2016).

Statute 18A:64A-26 established the Council of County Colleges. The Council of County Colleges, as previously mentioned, is “a body, corporate and politic, with succession, to be known as the New Jersey Council of County Colleges. The county colleges and the county college commissions shall be members of the council” (NJCCC, 2015). Under Statute 18A:3-30, community colleges shall

[not] prohibit a student or applicant from participating in activities sanctioned by the institution of higher education, or in any other way discriminate or retaliate against a student or applicant, as a result of the student or applicant refusing to provide or disclose any user name, password, or other means for accessing a personal account or service through an electronic communications device as provided in subsection a of this section. (JUSTIA, 2013)

These regulations impose onto the community college a set of parameters limiting financial exchanges with the free market, as well as imposing obligations to protect students' rights. While purchasing regulations may inhibit the consumer culture of the institution, statutes pertaining to students' rights represent an important tool, as students do not participate in shared governance of the institution. Oversight from the state is intended to safeguard the rights of students as patrons.

### **The Business of Higher Education**

As previously discussed, history paints European and American higher education as a noble space, designed to expand on the general knowledge of humanity, providing insight and development of philosophical, political and practical aspects of civilization. The previous subsections of this chapter addressed the existence of higher educational institutions by chronicling the legacy of the European university, the political heritage of higher education in the United States, the history of civil unrest leading to the development of community colleges as they are known today, and finally, the current systems in place overseeing academia and the operational integrity of New Jersey community colleges.

The forthcoming subsections are focused on commercial developments in

communication science, information science, and the science of learning. Review of the cross sections of all three spaces as they impact institutions of higher education is included. This section concludes with an exploration of higher education not as an organization, but as both producer and a consumer: a consumer of goods and services relating to educational technology, as well as a market commodity—providing a product, price, place, and a form of promotion.

### **Perspectives on the Purpose of Modern Higher Education**

Sabato and Botan (1968) identified three vertices of purpose in higher education: productive structure, government, and scientific/technological infrastructure, while Clark (1983) proposed an alternative approach for defining higher education as contributing to the market state and academic oligarchy. Schugurensky (2009) highlighted a component missing from both definitions: community, as it is the responsibility of the institutions of higher education to serve the public.

In line with Clark's (1983) definition of higher education, two higher education models of operation exist: the heteronymous university model and the controlled university model. The heteronymous university model, also referred to as a commercial university model, is driven by market demands, and includes the following characterizations: privatization, customer fees, corporate rationality, contracting out, and client-oriented programs (Schugurensky, 2009). Alternatively, the controlled university model is characterized by cut-backs, conditional funding, and coordination (Schugurensky, 2009). While community colleges are public institutions, they are characterized by the heteronymous university model; as such, the relationship between faculty and administration is strained by conflicting organizational objectives (Carrasco-

Nungaray & Vallejo Pena, 2012). This tension of purpose, combined with fractured management of educational technology, provides for a convoluted organizational structure, subject to external regulations, and yet limited in resources.

### **Technology and the Free Market**

There are three types of free software technologies: open-source, open-access, and freemium. Open-source refers to source code being available for distribution without cost, giving the users the opportunity to change the source code to meet their needs (Perens, 1999). Open-access software refers to software that is free for download, without changes to the source code (Perens, 1999). Freemium software follows a business model different from open-source or open-access resources: versions of the software are available for free with limited features (de la Iglesia & Gayo, 2008). To gain access to additional desirable features, the user needs to purchase access, in the form of an upgrade, to a premium version.

### **Educational Technology in Practice**

In the learning sciences, there are a variety of learning paradigms, theories, and models that address the process of learning and teaching. Subsequently, these theoretical frameworks serve as foundations in the development of best practices for using technology to meet the nuances of teaching and learning. Instructional technologists work with faculty and professors to leverage coursework with technology and theory. Instructional technology promotes practical techniques to deliver systematic learning, sometimes using media in the design and delivery of instruction (Gagne, 2010).

Educational technology is concerned with the study and ethical practice of facilitating learning, taking a broader approach to a more holistic management of technology supported learning processes and resources (Januszewski & Molenda, 2007). The integration of educational technology into the curriculum increases students' prospects for employment after graduation, thereby advancing the goal of creating a skilled and marketable workforce (Oria, 2012), while lowering unemployment rates (U.S. Bureau of Labor Statistics, 2014).

While organizational bodies outside of community colleges may collectively set standards and facilitate resources, it falls to the faculty to create, support, and successfully deliver the curriculum. In the process of adopting educational technology, the faculty are fundamentally responsible for the adoption and use of educational technology. However, it is up to the institutions to revise policies, systems, and approaches to aid in the successful implementation and use of technology (Fletcher & Karp, 2015). The dynamics of the faculty–administration relationship are essential to the success of organizational objectives. Plagued by differing objectives and convoluted bureaucracy, the relationship exists in a permanent state of tension and conflict (Del Favero & Bray, 2005).

The New Media Consortium (NMC, 2016), an international community of educational technology experts and practitioners, released an annual report for 2015 identifying trends, challenges, and developments relating to educational technology in higher education. Of the 18 topics addressed in the report, five were focused on business alignment, another five were focused on pedagogical theory developments, four on technology, three on pedagogical techniques, and one on assessment. The distribution of

topics reflects the relationship between technology affordances and technology use discussed by Jarzabkowski and Kaplan (2014). The distribution of topics is also a reflection of the information technology trends reported by Luftman et al. (2015).

An 11-year study on influential information technology management trends indicated that top management concerns include technology management, business alignment, and business agility (Luftman et al., 2015). To determine the success of technology in an organization or business alignment, Beard & Humphrey (2014) recommended assessment through the use of a strategy framework, such as the Baldrige Results Categories scorecard, to evaluate alignment between institutional technology and the needs of the institution. Jarzabkowski and Kaplan (2014) emphasized that the alignment of strategies between technology and the institutions must include the assessment of technology affordances (the materiality of the technology) and the agency of actors using the technology.

### **Theoretical Frameworks**

**Adaptive structuration theory (AST).** The matter of perceived reality versus objective reality stems from the philosophies of Berger and Luckman (1966), addressing the construct of reality by dividing it into two categories: society as objective reality and society as subjective reality. Influenced by a variety of schools of thought, Berger and Luckman (1966) proposed that people experience themselves as having a body and being a body, and that the production of reality is social and individual, and that together people create sociocultural and psychological formations. Giddens (1984) expanded on this idea of being and having, by suggesting interpreting the constructs into the concept of being acted upon by a structure and being as an element of the structure.

In structuration theory, structural features refer to a combination of inherent rules and resources with human agents interacting with these structures (Giddens, 1984; Harmer & Pauleen, 2012). Giddens (1984) called upon two schools of sociological research to explain the relationship between agents and structures. Structures evolve as a result of the actions of agents and their ability to influence social structures (Niederman, Briggs, de Vreede, & Kolfshoten, 2008). Giddens did not specify dominance between agents and structures. Instead, the enacted behaviors were intended to support or undermine previously enacted structures (Niederman et al., 2008).

One criticism of Giddens's theory of structuration is that it is more of a guide rather than a theory, offering a set of propositions (Poole & DeSanctis, 2004). Structuration theory as described by Giddens (1984) does not provide the context or tools for researchers to utilize; it only offers general strategies for research conduct (Poole & DeSanctis, 2004). ATS was developed by DeSanctis and Poole (1994) to translate the concepts of Giddens's structuration theory into practice, and later revised in 2004 to include an epistemological approach for AST in social research.

Unlike Giddens's theory, AST actors are constrained, without free choice. The structuration process is an ongoing cycle of action and structure, with battling forces of intentional action and social constraint (Niederman et al., 2008). Using ATS, individuals, technologies, and the organization are viewed as a single sociotechnical entity (Harmer & Pauleen, 2012). ATS addresses the relationships and environments that lead people to interpret and enact their perceived realities, focusing on the interaction between social actors and social structures, working toward a social outcome (Niederman et al., 2008). AST is used to describe social structures as interactions within a group, among group

members, in relation to new concepts, decision-making, and conflict management in the adoption of information technologies (Wu & Ku, 2013).

In AST, the cycle of structuration is made up of the group's internal and external systems, independent variables of social interaction, and dependent variables of decision outcomes (structure appropriations). Decisions drive new social structures, with organizational influence and context shaping the decisions (Niederman et al., 2008). According to AST, technology is incorporated in tasks, or structures, through appropriation, which is why social structures in action and social structures in technology need to be explored independently (Wu & Ku, 2013).

Unlike structuration theory, AST provides context for studying the relationship between agents and structures, categorizing concepts such as *spirit* and *structuring tactics*. Spirit refers to the intent of technologies designed and the intent of the structure (Harmer & Pauleen, 2012), while structuring tactics provide categorical behaviors referring to actions, decisions, and constraints that prompt norms, rules, relationships, and shared meanings (Niederman et al., 2008).

In further exploring the structures relating to the actuality of education technology within community colleges, this study addresses the question of technology regulation, with discussion of policies as a means of technology use management. For the purposes of this study, it is important to understand the intent of technology use, and its effect on change within the organization's social structures (Baxter & Babbie, 2004).

DeSanctis and Poole (1994) addressed the role of technology through the lens of structuration theory, with consideration of organizational change when advanced communication technologies are used. They recognized advanced communication



technologies as having a wide variance of adoption and subsequent impact, frequently diverting from the technologies' intended use and affecting decision making and outcomes (DeSanctis & Poole, 1994). Whereas Giddens (1984) introduced organizational structure as both a medium and an outcome, existing within the individual and within the group as a behavioral guide and in manifestations of social actions (Stones, 2005), DeSanctis and Poole (1994) introduced and defined AST as a means of integrating technology as a new dimension of medium, with the outcome affecting how organizational structures are negotiated and changed.

When describing the impact of advanced communication technology, DeSanctis and Poole (1994) focused on knowledge management using organizational communication. Contemporaries of DeSanctis and Poole (1994), using a more humanistic approach, used Giddens's (1984) structuration theory to explore the impact that communication technologies have on organizations.

Staber and Sydow (2002) focused on the organizational adaptive capacity of communication technologies. They were looking at the organizational system and its ability (as well as the ability of its members) to adopt communication technologies. Orlikowski (2000) went beyond the impact of communication technologies on the organizational system to suggest that because information systems (IS) are a product of human agency, they will inevitably reflect the system they were designed to facilitate, and that technologies may provide both affordances and restrictions when it comes to interactions (Rose & Scheepers, 2001). DeSanctis and Poole (1994), as well as Staber and Sydow (2002), presented a systems interpretation, exploring the parts of the whole of organizational communication. Rather than address only the one-way impact of

communication technology on an organization's social system, Orlikowski (2000) presented an interpretive paradigm, discussing the evolution and evolutionary limitations in the relationship between communication technologies and organizational systems.

In this current research, the two lenses of systems paradigm and interpretive paradigm were incorporated into the research questions. In addressing implementation, the activation of systems within structures to facilitate a deliverable was explored with the end goal of implementation of technology. It is through the process of implementation that the systems within organizational structures are challenged, the definitions of technology are challenged, and the socioeconomic powers of organizational agents are exercised (Stones, 2005). System agents exercise their authority within their various stations to determine the fit of the technology within the scope of their system. This research included exploration of this process of understanding agents' (stakeholders') roles, limitations, assertions, and authority.

**Narrative analysis.** This research involved the collection of texts through interviews and review of web-based published documents. The purpose of this research was to understand the ways in which the process of managing educational technologies in New Jersey community colleges manifests itself, as well as to understand the organizational structures and entities driving the environment of the process and operation. Although it closely resembles alternative qualitative research types, such as grounded theory or case study, the method of inquiry does not meet the requirements of the aforementioned research categories.

This research methodology is consistent with the definition of narrative analysis as given by Creswell (2013) and Merriam (2009). Narrative analysis is a research

technique that involves the study of experience through stories and text (Merriam, 2009). It is research that relates to experiences in lived and told stories of individuals, as well as an accounting (text) of events or actions which may be chronologically connected (Creswell, 2013). While narrative research is a collection of stories, it continues to be a field in transition, in which data may be gathered from a variety of sources, including interviews and documents (Creswell, 2013). As recommended by Creswell (2013), this research involved the collection of data from two resources: oral history (via the interviews) and through a literacy-based approach. The stories collected through these resources have a specific contextual focus, which can be cross-examined and retold by the researcher.

Creswell (2013) described ground theory as having to provide a unified theoretical explanation for a process or action. While this study is reminiscent of a case study, Creswell (2013) points out that case studies can resemble narrative research. However, case studies must report on a case, which Creswell (2013) described as being a concrete entity that can be bound or described by parameters such as specific time and place. Further, the intent of case studies is to understand a specific problem, issue, or concern. This study was not aimed to explicate the process of educational technology management as per the views of individuals, or to understand a problem, issue, or concern; rather, the purpose was to provide a context for the process of managing educational technologies in New Jersey community colleges through the experiences of individuals and web-based text representation. Findings from this study may be used to inform further research on the topic, through the lens of grounded theory or case study.

## Summary

Chapter II included the dynamic history and nuances of managing educational technology in New Jersey community colleges. The chapter opened with a history of modern academia, identifying the origins of the fundamental organizational principles and relationships realized in the modern administrative structure of institutions of higher education, specifically community colleges, in the United States today. After providing a context for the administrative framework and relationships between faculty, administrators, and legislatures, the chapter included the development of communication and information systems technology, as well as the adoption of these technologies into pedagogy. Next, the narrative included an overview of emerging issues relating to the administration of technology, academic freedom, and the commoditization of academia. The chapter closed with a review of the theoretical framework used in the research.

Most notable in the history of the European and American university is the transition between the university framework as a cultural artifact of the European medieval era, on the one hand, and the incompatibility between the masters and universities of the old world and the new, on the other. The adoption of the university in the Americas paralleled the political spirit of the times, refuting the tradition of the church as an exclusive authority with privileges in the realm of higher education.

In the infancy of American universities, the traditional shared governance relationship between the masters and the institutions was not consistent with Protestant ideologies, and was therefore rejected. Authority over governance of the institutions was relinquished to community governance, and the academic freedoms enjoyed by the privileged masters of the old world were not extended to the new world masters. The

Age of Enlightenment brought forth a movement towards secularism and free thought. With this came a reemergence of the right to academic freedom as a staple of collegiate education.

The maturation of U. S. politics permanently influenced how modern American colleges and universities operate. Whereas European universities were intimately intertwined with the church, serving as sources of knowledge for heads of state, American universities were products of their communities. The involvement of local and federal government in the development and support of higher education institutions is deeply rooted in American universities.

Remnants of legislative actions are infused into administrative operations in institutions of higher education, and written throughout various statutes in state legislation. The tumultuous maturation of the American college system from localized and faith-based colleges to secular public institutions included a period lacking in the standards, discipline, and structures inherent to European universities. To address the issue of rigor, a peer evaluation system to affirm the authenticity and value of a collegiate degree was developed.

Having established the history and context for the roles played by faculty, administration, and government, the narrative of Chapter II addressed the role of the free market and its effects on American community colleges. A review of literature addressing academic capitalism suggests that although American colleges and universities have taken great measures to ensure academic freedoms to students and faculty through legislation and institutional policies, market influences have affected the integrity of academic freedom. Mass communication and IS technologies were then

presented as commodities that had passively supplemented higher education prior to their convergence, and have presented the ability to influence pedagogy through alternative economies.

A structuralist approach was used to explore the impact of regulation and resources management of educational technology. Structuration theory provides an ontological, adaptive framework. Whereas structuration theory focuses on individuals, groups, and organizations (examining the ways in which they produce and reproduce social systems), AST provides a framework to explore these behaviors in the context of information technologies. Through the device of academic freedom, faculty exercised a certain level of autonomy, which was recognized and respected by institutions and governments.

Using AST framework and narrative inquiry, the researcher collected primary data reflecting beliefs having to do with the adoption and management of technologies in New Jersey community colleges. Using paradigmatic narrative analysis, this research maps the overlaps of beliefs regarding the organizational process of management. Using critical discourse analysis, the researcher interpreted texts to determine beliefs or representations having to do with power and how these beliefs and representations are articulated, enacted, and reproduced.

Chapter III includes the methods and approaches to the design of the study. In addition, the chapter includes discussion regarding the acquisition and management of data, data analysis, and data reporting.

### Chapter III. Research Method

The purpose of this chapter is to describe the processes used to conduct this research, the focus of which was to understand better how educational technology is currently managed in New Jersey community colleges. The chapter begins with the research design and an exploration of qualitative analysis as a scientific practice, followed by a review of narrative inquiry as a means of examining two sets of varying data produced by two separate sources of data, yet representative of the same process. The chapter also contains the research process, including data collection and data analysis. Rigor, bias, data management, positionality, and subjectivity are then treated. In closing, the chapter addresses the limitations and strengths of the study.

The purpose of this study was to understand how technology used in the delivery of curriculum is being managed in New Jersey community colleges. The study served to compare two forms of narrative: one form was an outward-facing communication channel with messages designed to solicit and inform the public, while the second form came from in-group stakeholders acting as decision makers or facilitators of educational technology within the institution. The two narratives were then compared, to determine what messages were being communicated to whom, and how the two condition the management of technology.

The research questions were focused on understanding the structure and implementation of technologies used to support curriculum, and furthered the examination of the resources, regulations, and structures associated with managing educational technology in New Jersey community colleges. The first three questions take an interpretive approach, addressing how the organization addresses technology within its

ecosystem, how technology has been defined and contextualized, and how it is treated by its users and patrons. The goal of the interpretive approach is to understand the meanings implied in how people act (Baxter & Babbie, 2004). The questions take a systems approach, addressing the policies in place to manage technology used to support the curriculum. Rather than exploring how educational technologies are constructed within the institution, the second question was aimed to understand the system of policies guiding implementation and maintenance of educational technologies. Examining institutional policies by means of the systems paradigm provides an understanding as to how the interrelated parts function as a whole.

### **Research Questions**

RQ1: How do New Jersey community college policies structure the use of institutional educational technology resources?

RQ2: How do existing policies in New Jersey community colleges regulate the use of software in the classroom? How are community colleges in New Jersey regulating the classroom use of freemium software?

RQ3: How do New Jersey community colleges policies address the implementation of educational technologies in the classroom?

RQ4: How do New Jersey community colleges enforce regulation relating to the use of educational technologies in the classroom?

RQ5: What resources are made available to support and implement educational technologies? Do these resources incorporate applicable institutional policies?

### **Interpretive Framework**

Qualitative research is used to understand how individuals experience, interpret,



and function (Merriam, 2009). In contrast with qualitative or multimethod research, qualitative research does not seek to generalize, but rather to understand. Basic qualitative studies focus on understanding, process, and meaning (Merriam, 2009). In social sciences, among other fields, there are four general types of research paradigms: positivist, systems, interpretive, and critical (Baxter & Babbie, 2004; Creswell, 2014; Merriam, 2009). New and evolving variations of philosophical frameworks emerge as scholars continue to explore questions in social science (Creswell, 2013). For the purpose of this study, systems and interpretive paradigms were used.

In qualitative research, data validity and reliability are dependent on the trustworthiness of the researcher, calling for the researcher to address the study's credibility, transferability, and dependability (Gay, Mills, & Airasian, 2011). From an ontological perspective, qualitative research encompasses philosophical paradigms that there is no objective reality and there is no single truth, that everyone's experience is unique, and context-bound (Creswell, 2013; Merriam, 2009). In this study, systems and interpretive paradigms were used to conduct pragmatic-type narrative inquiry for both data sets collected.

### **Narrative Inquiry**

The researcher explored parallel narratives representative of a process for the implementation of educational technology. One narrative was collected through interviews with institutional representatives, while the other was derived through the review of artifacts related to the topic available on institutional websites, an outward-facing space designed to manage the face, organizational liabilities, and the institutions (Creswell, 2013). The researcher explored the understood process of deploying

educational technologies through both active and passive voices of decision makers and stakeholders.

### **Websites as a Text**

Organizational websites are designed to communicate very specific messages to website viewers. Saichaie and Morpew (2014) argued that the websites maintained by an institution of higher education are marketing tools; they found that the websites were designed to build brand identity and promote product awareness. Their findings were consistent with existing literature, which articulates the fading of boundaries between information and persuasion in the message construction of higher education websites. The website depicts not only the image of being a college student, but also how to be one.

As images on the websites are designed to shape the expectations of what it looks like to be a student, the policies and procedures on the website shape expectations as to how students are supposed to conduct themselves in college. The policies and procedures shape a student's expectations of what an institution promises to accomplish and how it will accomplish those deliverables. The policies and procedures on a website are collectively developed and vetted by the institution (Saichaie & Morpew, 2014). They collectively represent the position of the institution. These websites, which serve as resources for communicating processes and policies, are repositories of resources designed to communicate academic and administrative process within the institution. Websites therefore serve as institutional artifacts, designed to provide iterations of information, while conveying persuasion and appeal with regard to the institution.

While websites utilize concrete language, stakeholders or owners of the processes and policies—the individuals who enforce and facilitate the directives of the collective

organization—are empowered with an elasticity for interpretation and implementation of the behavioral structures.

There are two ways to interpret an interview: as the narrative and as how the narrative is communicated. From the perspective of the narrative—the interview as a story—the generated text provides insight on the relationship between the knower and the known (Seidman, 2006). Although specific questions are asked during an interview, the real goal is not to get the answer to the question, but rather to understand the experience of the individual, and the meaning that the individual ascribes to the experience (Seidman, 2006). From the perspective of the communication process, the interview is a text that provides an array of frameworks for coding and delivering messages, both verbal and nonverbal. Through the lens of schema theory, an interview narrative may be broken down into varying elements, closely examining meaning construction and delivery using various communication method (e.g., a schema/script enacting, delivery structure [cultural/social queues], ritual, etc.). The interview contributes to the understanding of an agent's position by cross-referencing the text through the paradigms of rhetoric, communication, and information provided.

In this research, the discrepancies between two institutional narratives were explored: one that is passive, crafted, refined and vetted; and one that is active, delivered by a representative of the institution with some capacity to compensate for the human factor in the deployment of educational technology. This individual's institutional narrative is representative of the formal and informal means to facilitate, support, and develop the use of educational technology on campus. Discrepancies between the two narratives may influence the implementation and use of educational technology in the

institutions, and therefore represent a variation in institutional procedure. Adaptive structuration suggests that in-group members, or agents, possess the ability to change how an organizational process develops, by highlighting the differences between what is and what should be. The findings bring to light the spaces of innovation, unique to the institutions, and the opportunity for growth and success in the use and implementation of educational technology in their institutions.

### **Positionality and Subjectivity Statement**

**Positionality.** The researcher's personal, academic, and professional experiences have shaped her interpretation of the data sets and outcomes of this research. The researcher's professional background includes a brief term of service as an administrative assistant in the claims compliance department and the claims operations department in a national insurance company. During her time in the insurance industry, the researcher was exposed to the management of risk as a commodity. In claims compliance, her responsibilities included researching state regulations for insurance adjusters and a variety of details which may be relevant in court. In claims operations, she contributed to the adoption of regulations into daily claims processing workflows.

While pursuing her Master's degree in the field of Communication and Information Studies, the researcher worked as an instructional designer. She utilized content, provided by faculty, and a processing workflow, for instruction in learning management systems (LMS).

For the researcher, the management of risk had always served as a significant element to address. In her time as instructional designer, she did notice the significant lack of risk management in the process of creating, distributing, and teaching. In

addressing the subject of this research, the researcher also attempted to understand how the various organizational structures speak to the management of risk, and what it means to the experiences of students and faculty in the classroom.

**Subjectivity.** The researcher was an employee of a New Jersey community college at the time the research was conducted. She has worked in the field of higher education for 5 years in various positions relating to education technology. Her experience as an instructional designer and manager in the field provide her with a specific perspective of the process of managing technology. This experience is based on her academic background in critical media studies and organizational communication, as well as her insight and knowledge relating to the process of meaning making and associated behaviors. For the purposes of this research, AST was selected as a framework in part because it stems from communication science.

### **Limitations**

The researcher is familiar with some aspects of integrating educational technology into the classroom. Therefore, the interpretation of public text relating to the management of education technology was, in that sense, biased. This limitation is consistent with qualitative research, in which the researcher is accepted as a tool in the study; therefore, the researcher maintained awareness of her background, values, and experiences (Creswell, 2014; Lincoln & Guba, 1985; Merriam, 2009). As a member of the small professional community college network community, the researcher was subject to the same relational paradigms and communities as were the interviewees. However, the researcher was not familiar with the operations of the institutions employing the interviewees.

The study focused on all 19 community colleges in New Jersey, and included interviews with individuals who responded to the invitation. Although the sampling was small, the interviewees provided a rich data set with considerable depth. As the study was focused on exploring the intricacies of a relationship between educational technology and specific institutions, the deep-inquiry data set fit well with the goal of the research: to provide a specific interpretation of a relational process among a small set of institutions—rather than a broad sweeping understanding of the process—which can be applied to a variety of institutions.

### **Delimitations**

The research questions were focused on educational technology in general, rather than on specific technologies such as LMS, enterprise management systems, classroom response systems, or any other specific systems. This was intentional, to serve the purpose of allowing space for interpretation of policies. The research questions were designed with anticipation of diversity in practices, interpretations, and use of educational technologies by the institutions. By not specifying the specific types of technologies involved, focusing rather on the management of technologies, the research facilitated an inquiry on management frameworks independent of technologies, which are inherently dynamic.

The interviews were mediated using software and synchronous digital communication, over the phone, or face-to-face. For interviewees who preferred not to be recorded, interview notes were presented to the interviewee by the researcher for confirmation and memorialization of responses.

This research was not used to explore the entirety of the educational technology implementation process, from policies to implementation and use. The natural progression would have been to understand which policies exist, how they are used, and how educational technology is implemented and managed. Rather, the research was limited in its scope to discourse and narrative, looking at educational technology policies as narratives, shaped by their source of delivery and enforcement. This study was not used to explore policy outcomes or best practices. Instead, it was used to explore educational technology implementation policies as the subject, malleable and shaped by stakeholders.

### **Documents Used in the Study**

Several documents were used for data collection, communication, and note taking. Initially, an Institutional Review Board (IRB) request was submitted to the New Jersey City University IRB. The IRB's approval to collect data is attached in Appendix A. Emails were sent out to solicit participation (Appendix E). Once participants committed to an interview, they received and returned an informed consent form (Appendix B). The informed consent form served to advise that participation was voluntary and anonymous. During the interview, participants were advised that the conversation would be recorded, but were given the opportunity to opt out of the recording. For those participants who chose not to be recorded, an email was sent to confirm the information collected by the researcher; a sample form in which the data were summarized can be found in Appendix D.

## **Participants & Participant Selection**

The study was focused on collecting interviews from members of the administration in community colleges across New Jersey. There are 19 community colleges in New Jersey, all of which are open access and range in demographic.

College websites were used to identify mid–high level administrators who were responsible for overseeing elements of educational technology in their respective institutions. When available, digital directories were reviewed to identify potential candidates for interviews. In lieu of organizational charts, which were not always publicly available, the institutional directory pages and about-the-college pages from their official websites were reviewed to identify individuals who were possible decision makers in the educational technology implementation process.

Of the 19 New Jersey community colleges, one institution was identified to have used a third-party vendor to manage information technology and was therefore excluded from the interview solicitation pool. Several iterations of soliciting strategies were conducted.

The first strategy for participation selection was direct email, with a follow-up by phone. This format of solicitation was used for the majority of identified individuals. In addition to electronic invitations to participate in the study, the researcher approached selected individuals through the New Jersey Research and Education Network, or NJEDGE. Individuals were approached during group meetings and conferences, and were presented with a hard copy of the electronic invitation to participate. This method of invitation is in line with case study and ethnographic recommendations made by Creswell (2013) regarding the solicitation of participants. In total, 38 people were identified and



contacted. Invitations to participate in the study were sent to 31 individuals via email and seven were solicited face-to-face.

### **NJEDge**

The researcher's home institution belongs to NJEDge, a technology consortium of New Jersey higher education institutions which has committed to provide technology solution products through negotiations with a variety of vendors, as well as research and development outreach programs (NJEDge, 2016). The researcher was first introduced to the NJEDge Vice President of Academic and Community Engagement in 2013 at an Association for Computing Machinery (ACM) Special Interest Group on University and College Computing Services (SIGUCCS) conference. The researcher's ongoing involvement with the New Jersey consortium has created the opportunity to attend several NJEDge conferences as well as symposiums. In 2015, the researcher was asked to contribute to the organization of the User Services symposium, and later named as co-chair of the User Services Affinity Group. Between 2013 and 2015, the researcher was an avid participant of the Academic Technology Affinity Group, where she made professional connections with the individuals who were responsible for organizing and, in some cases, managing the educational technologies in their institutions.

### **Data Collection Methodology**

Data were collected from two sources, then uploaded to a web-based qualitative analysis software. Website screenshots were saved as PDFs to a cloud-based storage drive. The PDFs were then uploaded into a web-based qualitative data analysis software, Dedoose. Interviews were saved to a cloud-based storage drive, transcribed, and also uploaded to Dedoose. Once the PDFs were uploaded to the software, they were assigned

descriptors. The descriptors represented the sources of the data (the college), and the format in which the data was collected (website).

Dedoose has a variety of functionalities, including data coding and data analysis. Two different sets of analysis were conducted for which the researcher generated a coding structure for each cycle of analysis. The coding structures were different for each analysis. The first cycle included parent codes and several subcodes, representative of the theoretical framework, yet identifying different elements of educational technology management. The codes for the second cycle were all parent codes; however, they had a weight system that was used to represent the degree to which the findings answered addressed the themes.

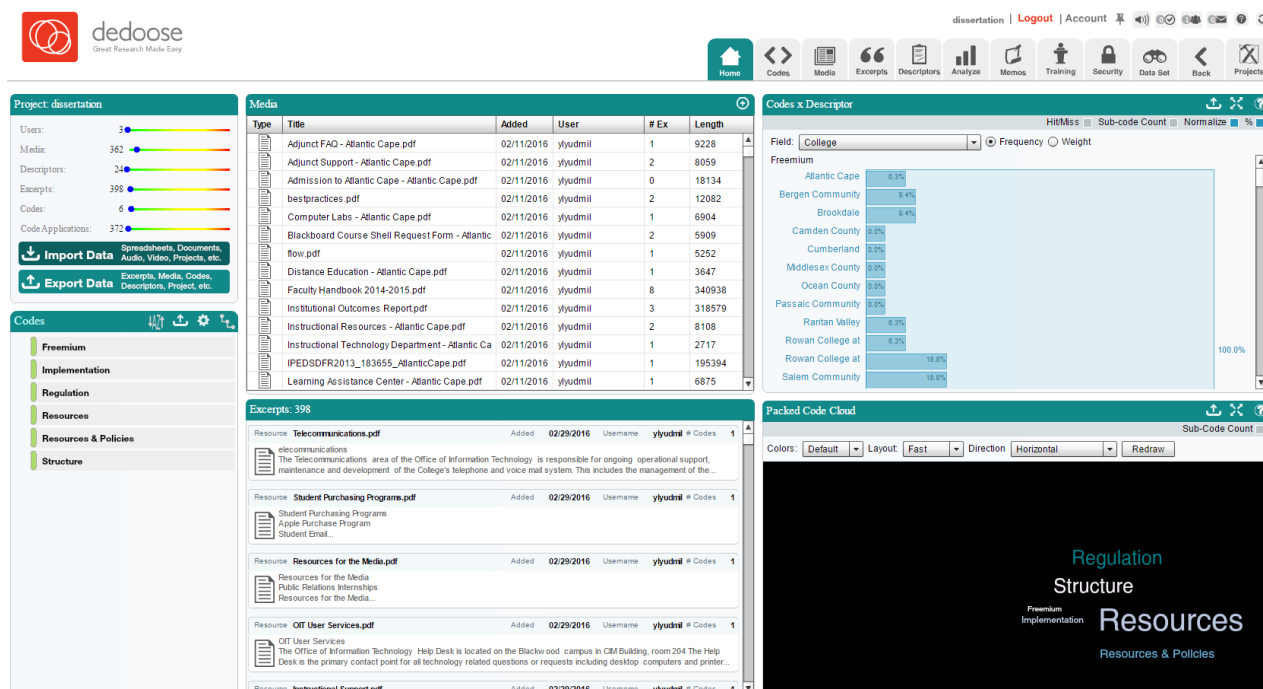


Figure 1. A screenshot of Dedoose coding system.

**Website data collection.** As per Merriam (2009) and Creswell (2013), search terms were derived thematically. The first two pages of “hits” were reviewed for data themes and congruence to the process of implementing educational technologies as well as the research questions. The initial inquiry was conducted by utilizing the local site’s search utilities. The search terms used were *policy, procedural, education technology, distance learning, computers, computing, email, technology policies, procedures, board action, regulation, and wireless.*

Although software exists—known as web spiders or web crawlers—to review websites for keywords, this type of software was not utilized when reviewing sites. The reasoning for this was to simulate the experience that a novice human user (as opposed to robots or “bots”) would have when accessing the site—an experience that is important for individuals who are stakeholders (e.g., faculty, students, and parents), but do not have access to institutional policies and procedures. In the initial collection of raw data, 361 artifacts were identified.

**Interviews.** In the first cycle of participant solicitations, executive-level individuals with decision-making authority were targeted. The second cycle focused on middle managers, individuals responsible for the success of the technology, though not necessarily the technology itself. All participants were required to have been serving in a full-time acting capacity or appointed by the institution. Third-party vendors acting in the capacity of information technology or academic technology management on behalf of the institution were not solicited.

Brayfield, Adler, and Adler (1999) recommended targeting approximately 30 individuals for an interview pool when conducting qualitative research. To meet this

recommendation, the researcher contacted 38 individuals to participate in the study. Brayfield et al. (1999) maintained that the number of participants for an adequate sample of interviews varies, but advised the range between 12 and 60, with 30 being the mean. Creswell (2013) did not provide a recommended range of participants, but instead focused on the outcomes of the interview. He suggested that the data collected from interviews should be sufficient enough to produce a recognizable pattern explaining a phenomenon. Considering recommendations, a pool of 38 individuals were solicited for this study, yielding outreach to at least two individuals from each qualifying institution.

Table 1 shows the distribution of outreach and response from solicitations. A total of 11 upper management stakeholders, 11 middle management stakeholders, and 9 lower management stakeholders were emailed. Of all schools contacted, three did not list emails on their websites, and of the three without listed emails, one did not list staff names. An outlier of the community colleges contacted was one that outsourced all technology management to a third party vendor. The third party vendor was not contacted, as it was considered beyond the scope of this research.

Table 1

*Distribution of Participant Solicitation*

Participants solicited & method of solicitation	Distribution of solicitations
Upper management	
Solicited via email	28.9%
Solicited face-to-face	2.6%
Middle management	
Solicited via email	34.2%
Solicited face-to-face	7.9%
Lower management	
Solicited via email	23.7%
Solicited face-to-face	2.6%

*Note.*  $n = 38$ .

A considerable portion of the interviews was conducted via a web-based communication tool called anymeeting.com. Prior to the meeting, informed consent forms were distributed to the interviewee and then collected, dated and with signatures. Once the session started, the interviewee was advised that the session was being recorded, and the options for anonymity and for refraining from recording were restated. After the interviewee expressed acceptance, recording began. The interview started with the first of three questions (Appendix C). As the discussion between interviewee and the researcher progressed, topics that arose were explored. The interview was considered complete when all questions were asked and answered.

In the event that the interviewee did not consent to recording, the researcher took handwritten notes of the conversation. Upon completion of the dialogue, the researcher typed up notes from the conversation, highlighting important points or processes

referenced by the interviewee. The interviewee was asked to review the notes, and confirm approval. When interviewees requested changes to the notes to more precisely reflect answers to their questions, the requested changes were implemented. Upon completion of the recorded interview, the .mp3 file of the session was downloaded and stored on a secure cloud-based drive. The interviewee was not asked to confirm the transcript of the conversation.

**Informed consent.** All participants were asked to sign an informed consent form. In the form (see Appendix B), it was made clear that all participation in this research was voluntary and anonymous. Participants were advised that they were not required to participate, and could withdraw from the study at any time (Flick, 2006).

**Participant interviews and protocols.** Participants were interviewed using a semistructured interviewing style. A set of standard questions were prepared for the interviews. However, in keeping with the interview method, after standard questions were addressed the interviewee was provided the opportunity to elaborate on their experience and perspective regarding the implementation and management of educational technology in their institution (Glaser & Strauss, 1967).

**Interview collection methodology.** Participants were emailed via the NJCU student email portal, from the account of the researcher, Yelena Lyudmilova. Solicitation emails were distributed to member representatives of all New Jersey community colleges. Two different versions of the invitation were sent, the first of which was a formal invitation to participate. In the first invitation, the verbiage was formal and reserved. It was sent exclusively to upper- and middle-level management individuals (see Appendix E). The first email was sent to the first group of possible participants ( $n = 8$ ), but failed

to attract volunteers. In the second invitation, the verbiage was customized to meet the job description of the invitee and phrased in more colloquial language. The second invitation (see Appendix E), was also sent to exclusively upper- and middle-management individuals (n = 23). The second email was successful in that potential participants responded to the email, securing three responses. However, of the three responses, one individual committed to an interview, only to later withdraw from the commitment, citing schedule conflicts and lack of availability.

**Data coding.** Miles, Huberman, and Saldana (2014) took the position that meaning and intentions maybe be studied through the means of social structure; social phenomena exist in the world and influence human activity. They described the qualitative analysis method as explaining the social process, mechanism, or structure captured to provide a description of the forces at work. Miles et al. (2014) described qualitative data as representative of events that are naturally occurring within the natural setting, and that confidence in data should be built by buttressing closeness to the source with rich and holistic description. To present the data, Miles et al. (2014) defined qualitative analysis method consisting of three distinct steps: (a) data condensation, (b) data display, and (c) conclusion drawing and verification.

Data condensation, as defined by Miles et al. (2014) refers to the process of selecting, focusing, and sifting data. Data condensation is performed in preparation for data collection, and involves identifying the framework, coding, and themes. For the purposes of this study, three different interpretations of applying AST to research practice were aggregated and used to code collected data. The data were aggregated using a

computer assisted qualitative data analysis software (CAQDAS), emergent themes during data analysis were mapped to themes identified in the literature review.

**Institutional websites.** Institutional websites were identified through the New Jersey Office of Higher Education website, where a complete listing of New Jersey universities and colleges is maintained (State of New Jersey Office of the Secretary of Higher Education, 2015). The researcher reviewed the directory provided by the Office of Higher Education, targeting institutions identified as community colleges. Selected institutions were cross-checked to ensure that they were, in fact, 2-year public institutions. This checking was done through an alternative Office of Higher Education website directory, listing institutions by sector (in this case, the sector title was “Community Colleges (19) All Accredited by Middle States Commission on Higher Education”).

Once the site was accessed, a search was performed using the search function. The words used in the search were *policy*, *procedural*, or *education technology*, *distance learning*, *computers*, *computing*, *email*, *policies*, *procedures*, *board action*, *regulation*, *data security*, and *wireless*. The first two pages of hits were reviewed for data leads. Although software (known as web spiders or web crawlers) exists to review websites for keywords, it was not utilized when reviewing sites for purposes of this research. The reasoning for this was to simulate the experience that a novice human user (as opposed to a robot, or bot) would have when accessing the site—an experience that is important for users who are stakeholders (such as faculty, students, and parents), but do not have in-group access to institutional policies and procedures.

For this qualitative study, two sources of data were collected and reviewed. The



collection of these data provided an opportunity for the cross-referencing of two primary source narratives: one from a publication issued via the institutional website and the other from an interview, representing a subjective interpretation of the institutional educational technology management process from a stakeholder's perspective.

The opportunity to cross-reference narratives provides an in-depth understanding of the relationship between varying organizational narratives, highlighting the impact of the human element and agency within a social structure as it impacts the trajectory of the collective processes, institutional goals, and needs. While developing an AST metatheory for information systems, Bostrom, Gupta, and Thomas (2009) identified two roles: that of the artifact and that of the agent. Within this research, the artifact (the narrative of the websites) was compared to the actor/agent (the stakeholder responsible for exercising choice within a social structure).

Through the use of narrative inquiry in the context of the institutional website, this researcher collected the institutional artifacts representing the management of educational technology. Through the process of the interview, the agent (stakeholder/interviewee) provided a living narrative of the process, a unique inquiry into the organizational operation, facilitating a kind of voice to the others who make up the organization, and are intimately familiar with the institutional processes (Seidman, 2006).

**New Jersey Community Colleges.** The identified community colleges were then verified with the MSCHE, a regional membership association overseeing accreditation for member institutions, assuring rigorous application of operational standards (MSCHE, 2015). The identified community colleges are listed in Table 2.

Table 2

*Listing of New Jersey Community Colleges*

Listing of New Jersey Community Colleges	
Atlantic Cape Community College	Ocean County College
Bergen Community College	Passaic County Community College
Brookdale Community College	Raritan Valley Community College
Camden County College	Rowan College at Burlington County
Cumberland County College	Rowan College at Gloucester
County College of Morris	Salem Community College
Essex County College	Sussex County Community College
Hudson County College	Union County College
Mercer County Community College	Warrant County Community College
Middlesex County College	

**Data Analysis**

The first round of coding was informed by literature, utilizing 19 codes, without a weight system. Saldana (2016) recommended coding using two cycles of coding for the analysis of qualitative data. For this study, the first phase of coding was used to map website documents to ATS. Creswell (2013) stated that codes may be developed one of two ways: through themes that emerge during the data analysis, or through the use of literature. The codes were derived from literature, and were reflective of the ATS frameworks as described by Bostrom et al. (2009), Poole and DeSanctis (2004), and Niederman et al. (2008). These codes are identified in Table 3.

The results of the first cycle of coding aggregated the public texts and narratives driving the process of adopting/managing institutional educational technology, in addition to defining the purpose of the documents as they relate to AST frameworks. The

first round of coding identified documents which may have resulted during the search, and addressed educational technology management, but did not meet coding parameters.

Table 3

*Description of Codes: First Round of Data Review*

Code	Source
Dimensions	Bostrom et al. (2009)
Actors	Poole & DeSanctis (2004)
System	Poole & DeSanctis (2004)
Moves	Poole & DeSanctis (2004)
Meeting level tactics	Niederman et al. (2008)
Activity level tactics	Niederman et al. (2008)
Microprocess tactics	Niederman et al. (2008)
Arrays of structures	Poole & DeSanctis (2004)
Features	Bostrom et al. (2009)
Structure relationships	Poole & DeSanctis (2004)
Social context	Poole & DeSanctis (2004)
Spirit	Bostrom et al. (2009)
Social ideologies	Poole & DeSanctis (2004)

The coding system in the second round of coding addressed the research questions, driven by themes describing resources, regulations, and structures. Table 4 shows the coding matrix used to code the public documents as well as interview artifacts. The second cycle included 24 descriptors, six codes, and a weight scale of 0–3 with 0 being that the excerpt did not explicitly address the question, but had some potential to address the issue; 1 meant the excerpt related to the question; 2 meant the excerpt partially answered the questions; and 3 meant the excerpt fully answered the question. Documents that did not address any the questions were not coded, but remained in the document pool. In addition to utilizing the codes, the researcher utilized the memo

function of the software, creating a subset of data whereby the researcher's analysis of the document was recorded. Table 4 shows the six codes used and their detailed descriptions.

Table 4

*Description of Codes: Second Round of Data Review*

Code	Description
Resources	What resources are made available to support and implement educational technologies? Do these resources incorporate applicable institutional policies?
Freemium	How are community colleges in New Jersey regulating the classroom use of freemium software?
Implementation	How do New Jersey community college policies address the implementation of educational technologies in the classroom?
Regulation	How do existing policies in New Jersey community colleges regulate the use of software in the classroom? How do New Jersey community colleges enforce regulation relating to the use of educational technologies in the classroom?
Structure	How do New Jersey community college policies structure the use of institutional educational technology resources?

### Summary

This chapter included the overall approach for the research method, processes, data collection, and data analysis strategies. Additionally included were the justifications for the research method, including the use of narrative inquiry qualitative method for the study of educational technology management in New Jersey community colleges.

In addition, this chapter included discussion of issues of ethics pertaining to the study. As this was a qualitative study, the nature of subjectivity on behalf of the researcher was addressed. A discussion was presented, addressing theoretical background, research design, research process, and data management. The process for

data breakdown was included, addressing both paradigmatic and narrative inquiry as methods of analysis.

## Chapter IV. Findings

The purpose of this qualitative narrative analysis was to demonstrate how educational technology is managed in New Jersey Community Colleges. A literature review was conducted to contextualize the history and operations of New Jersey community colleges. The narrative analysis is supplemented with descriptive statistics to substantiate the validity of the data set. Upon the review of the literature, the following topics emerged: (a) institutional oversight and accreditation; (b) academic freedom and shared governance; (c) acquisition regulations; (d) market impact on educational technology; and (g) literature pertaining to narrative analysis.

Five research questions were used as guidelines to search the institutional websites, as well as for interviews with administrators and staff:

RQ1: How do New Jersey community college policies structure the use of institutional educational technology resources?

RQ2: How do existing policies in New Jersey community colleges regulate the use of software in the classroom? How are community colleges in New Jersey regulating the classroom use of freemium software?

RQ3: How do New Jersey community colleges policies address the implementation of educational technologies in the classroom?

RQ4: How do New Jersey community colleges enforce regulation relating to the use of educational technologies in the classroom?

RQ5: What resources are made available to support and implement educational technologies? Do these resources incorporate applicable institutional policies?

Data were collected from two sources: institutional websites of New Jersey community colleges and interviews with staff who are involved with the process of educational technology managements in their respective institution. A review of institutional websites produced 361 artifacts pertaining to educational technology. In addition to website content, 38 individuals were contacted to be interviewed; of those contacted, five participants were interviewed.

### **Data Display**

A raw data set was collected from the institutional websites. Following the process described in Chapter III, a set of search words were used in the provided institutional websites. The search results were then reviewed for educational technology affiliation, and captured via PDF format. In addition to the search bar, the websites were reviewed for educational technology references, limiting browsing of links to a two-click depth.

The raw data was uploaded into Dedoose, the CAQDAS system. Following Saldana's (2016) recommendations for coding, the data were reviewed and assessed in two phases. The first phase was focused on mapping the collected documents to the ATS frameworks as described by Bostrom et al. (2009), Poole and DeSanctis (2009), and Niederman et al., (2008). The second phase was focused on mapping collected documents as well as interview transcripts and notes to thematic codes addressing the regulations, resources, and structures associated with the implementation and management of educational technologies in New Jersey community colleges.

## Website Data

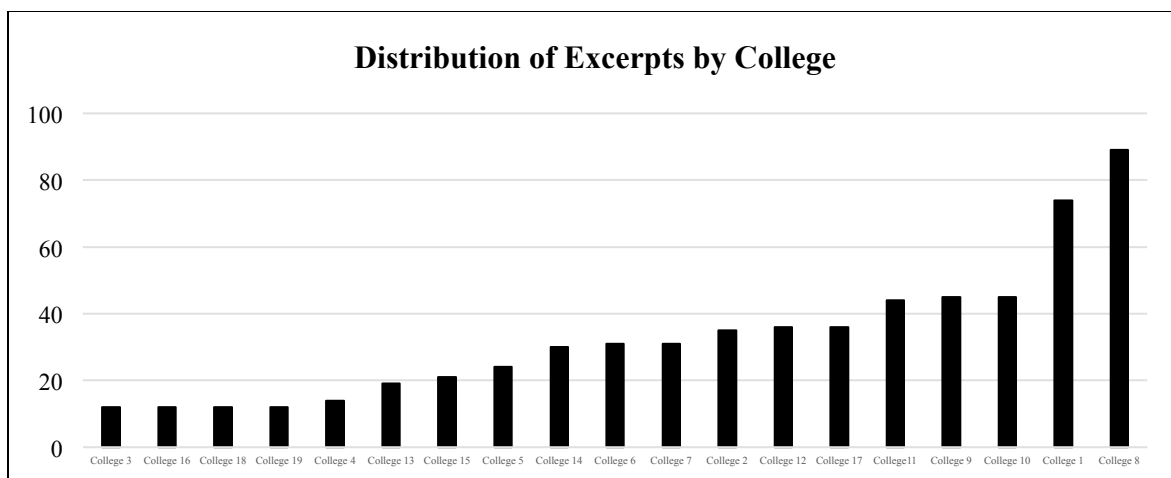
In the first coding cycle, 493 excerpts were generated using 22 descriptors, and 622 code applications. Dedoose was used to aid in the aggregation of the data, producing a distribution of excerpts by code, as well as a distribution of excerpts by community college. Table 5 shows the distribution of excerpts for each code, while Figure 1 illustrates the distribution of excerpts by college.

Table 5

### *Distribution of Excerpt by Code: Cycle 1*

Code	Count
1. Arrays of Structures	204
2. Dimensions	143
3. Activity Level Tactics	71
4. Spirit	47
5. Moves	37
6. System	25
7. Meeting Level Tactics	22
8. Social Ideologies	18
9. Actors	15
10. Structure Relationships	14
11. Micro Process Tactics	12
12. Features	9
13. Social Context	5





*Figure 2.* Distribution of excerpts by college.

On average, each institution had approximately 32 excerpts, with the majority of excerpts representing arrays of structure, dimensions, and activity level tactics.

In the second coding cycle, the review of the same data yielded 398 excerpts and 372 code applications. Appendix F provides excerpt samples, broken down by college, code, and weight. The majority of excerpts were assigned the codes of resources, structure, or regulation, with an average mean of 2.05 on a 0–3 point scale. Table 6 demonstrates the distribution of excerpts by code.

Table 6

*Distribution of Website Excerpts: Cycle 2*

Code	Count
Resources	150
Structure	74
Regulation	59
Implementation	18
Freemium	10

## Interview Data

Invitations were sent in phases to determine the best approach for capturing people's interest in the study, and prompting them to commit to interviews. The first set of individuals were contacted using formal invitation verbiage (n = 8). After 2 weeks, none of the individuals contacted responded to the invitation. Follow-up phone calls were made. The phone calls were not answered; instead the researcher left voicemails as secondary invitations for participation.

A second set of invitations was sent to 23 individuals; this time the verbiage was adjusted to be less formal and more inviting. There was one response to the second set of emails. Follow-up phone calls were made to individuals who did not respond, and once again the researcher left voicemails as secondary invitations for participation in the study. Samples of the first and second invitations are found in Appendix E. The researcher approached seven people to participate in the research, providing a written description of the research summary and consent forms.

In total, eight individuals responded to the invitation to participate. Of the eight volunteers to be interviewed, one withdrew, one did not return an informed consent and was therefore omitted from the study, and one did not respond to the request to review and approve the interview notes. The final data set of interviews consisted of five volunteers who met the criteria of submitting a consent form in a timely matter, as well as reviewing and confirming the interview transcripts when applicable (see Table 7 for the data collection outcomes).

The fact that so few people were willing to participate in this study, along with the number of incomplete interviews, is a reflection of the attitudes toward the issue of

managing educational technology. There is an inherent and almost taboo nature of negotiating education technology and pedagogical authority. Middle- to high-level managers must be conscious of their position as administrative representatives of an institution, while at the same time sifting through the nuances of technology through the prism of shared governance and this may explain the reluctance to participate in this research.

Table 7

*Data Collection Outcomes*

Invitation Method	Individuals contacted	Accepted invitation	Completed study
Email 1	8	0	0
Email 2	23	3	0
Face-to-face invitation to participate	7	7	5

**The Interviewees**

The recruitment process was a cold mailing to 38 individuals identified through websites, using their titles and positions in the organization as indicators of relevance for this study. Unfortunately, this process of inviting interviews was not productive, yielding one commitment, which was only to be reversed within a month's time. The secondary attempt for recruitment of potential interviewees utilized the researcher's professional network, allowing her to inquire about the initial invitation face-to-face with the candidates. To protect the anonymity of the interviewees (see Table 8), this section is split between the description of the interview, and the outcomes of the interview per college.

Table 8

*Interviewee Institutions*

College	Interviewee pseudonym
College 13	Annabelle
College 8	Janet
College 2	Margaret
College 9	Richard
College 3	Steven

**Interviewee 1: Margaret.** For the purposes of this research, the interviewee is referred to as Margaret. The interview with Margaret was conducted over the anymeeting.com cloud conferencing solution. The researcher had asked Margaret if she would allow recording of the conversation, and Margaret stated that she would prefer to not be recorded. Speaking cautiously, the pace of her speech would not be described as slow, but most definitely not equal to the dynamic cadence and rhythm of her words at the close of the interview.

The researcher asked about Margaret's vision for the future. The researcher had provided Margaret with a mechanism to explore her vision for her space in her institution. It was at this point that the formal, and calculated rhythm of her speech changed. Her disposition changed, and her passion for her work became immediate. She described a system in which an advisory council would manage educational technology needs and coordinate with IT to develop an implementation plan as well as management processes.

Margaret remarked on the intersections of her position as a middle-high ranking manager. She felt in-between, recognizing the need and knowing how to address it,

developing plans and protocols when needed. Yet, at the same time, she described the frustrations and challenges of funding, collaboration, and the limitations of grants, and the issues associated with managing individual needs of the faculty while meeting her obligations to the administration and other departments. She chose instead to address the gaps in organizational communication and collaboration she faces every day. At that, Margaret closed the interview, with her final remarks justifying the need for more research in the organizational management of educational technologies in New Jersey community colleges.

**Interviewee 2: Steven.** For the purposes of this research, the interviewee is referred to as Steven. The interview with Steven was conducted over the phone. While the opportunity to have the discussion over anymeeting.com was presented, the preference fell to the researcher contacting him on the phone. Steven's demeanor during the interview did not change, the rhythm, cadence, and speed of his speech remained the same for the entirety of the conversation.

During the interview, he spoke well as a representative of the institution, highlighting the college's vision for inclusiveness and cooperation between the administration and the faculty in pursuit of the implementation of educational technology. He identified the information technology group as the gatekeepers and ultimate authority of implementation. The relationship between the faculty and the information technology group was not made clear; what was made clear, however, was his position as an intermediary agent, negotiating the experiences and needs of the faculty, while simultaneously translating the operational need to information technology. He had a strong grasp of technical jargon; however, when the researcher pressed with a more

technically driven conversation, Steven was quick to default to the experts in the information technology department as the decision makers.

Upon completion of the formal interview, the researcher asked about Steven's vision for the future of education technology. He discussed his next project: projection technology. Steven's interest was piqued when the researcher disclosed her experience with a similar technology. During this discussion, Stevens' confident speech transitioned into one of curiosity, his pitch elevated ever so slightly and the pace of words accelerated. While the discussion focused on projectors, it was clear that his passion was that of matching user experiences and with the functionality of the technology. His personal philosophies regarding education technology emerged, and it was clear that he personally believed that technology should not impede the teaching process and should present seamless functionality.

**Interviewee 3: Janet.** For the purposes of this research, the interviewee is referred to as Janet. Janet is a middle-high level manager. She oversees a subset of operations within the larger educational technology department in her institution. As familiar as she was with her operation, she was equally unfamiliar with the operational details of her counterpart in the department, the vision and goals of her department, and knew only the basic functionality of the information technology department.

For the most part, she was unable to address the formal questions. Janet was not familiar with the narratives of institutional policies, nor did she have a script for a vision of her own. However, she was very pleasant to speak with and had an overall positive attitude when relating to the students and collaborating with her counterpart responsible for managing the needs of the faculty.

**Interviewee 4: Richard.** For the purposes of this research, the interviewee is referred to as Richard. Richard is a middle–high level manager overseeing the operation of academic computing spaces in his area. Richard was quick to distinguish policies as being issued by the board, and procedures as being fluid and responsive to the operational needs of his college. Each policy or procedure he discussed was explained with a historical anecdote, or reference to an experience he had had.

During the formal interview he managed to not only answer the questions, but to elaborate on what can only be described as the spirit and intentions of the college as they relate to the use of educational technology. Richard cited his statements with board policies and departmental policies. He was able to recite policies verbatim, and elaborate on the purpose of each. He reiterated that board policies were intentionally vague and generalized, while departmental policies drove daily operation. He was able to address questions from the perspective of the administration, the faculty, and in some cases, the students; his response included considerations for most applicable stakeholders. In addition to discussing regulations and policies, he was able to address their intent, history, associated initiatives, and outcomes.

**Interviewee 5: Annabelle.** For the purposes of this research, the interviewee is referred to as Annabelle. Annabelle is a middle–high level manager overseeing educational technology in her institution. During the interview, Annabelle was demonstratively knowledgeable of the policies and process associated with technology acquisition, and implementation. In addition to current educational technologies, she was keen to consider the future of her role as a technologist and as a manager. She cited virtual and augmented technology as the future for mediated learning environments.

During the formal part of the interview, Annabelle was able to describe the decision-making processes as well as their associated legal considerations. During the conversation, her demeanor was professional and approachable with few remarkable tendencies. It was clear that she had a well-built repertoire regarding her work in educational technology and the direction in which she would like to take her institution.

Annabelle brought up two points regarding educational technology. As previously mentioned, she addressed technology acquisition barriers. When discussing these barriers, Annabelle cited state regulations and institutional policies as well as institutional protocols as blockades to acquisition of applications or apps. In addition to discussing procurement issues, she addressed the faculty requirements. In her opinion, the institutional LMS was underutilized, and she cited institutional politics as the reason for low LMS adoption by faculty.

### **Interview Comparison**

The interview analysis was conducted using the second cycle coding system previously described. The findings from the interviews were compared to the findings from the websites. Figure 3 shows excerpt codes, comparing distributions between data collection methods while Table 9 shows a comparison between findings from the interviews and findings from the websites, using the same codes.



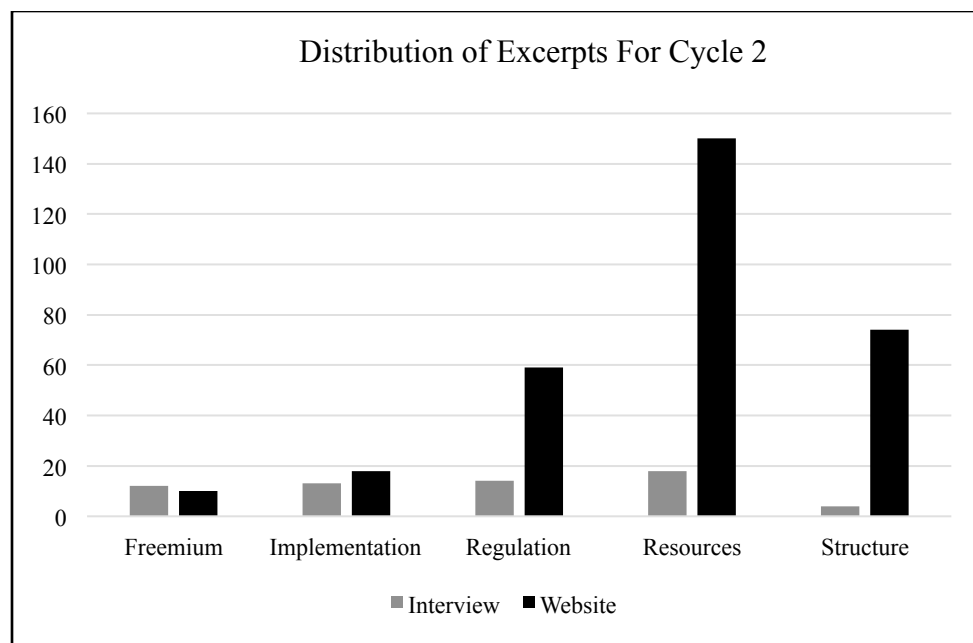


Figure 3. Comparison of excerpt counts between methods of data collection: Interview versus website.

Table 9

*Comparison of Findings Based on Method of Data Collection*

	Resources	Structure	Regulation	Implementation	Freemium	
College 1	Interview	Workshops, Online Materials (institutional tutorial depository), LMS	N/A	To implement large scale distribution faculty must go through IT, after which policies will be extended where necessary and guidelines are set-up and communicated to the faculty.	N/A	Faculty do not have any restrictions regarding the software they use in the class.
	Website	IT Helpdesk, Teaching & Learning Center, LMS	College Services, IT Services, Media Resource Access, Adjunct Development Program	IT Policies	Faculty service for implementing technology.	N/A

(continued)

Table 9 (continued)

		Resources	Structure	Regulation	Implementation	Freemium
College 2	Interview	Faculty are invited in to learn about pedagogy initiatives in new technologies [in the sandbox].	The Center to mitigate educational technologies using a sandbox.	Request goes to department approval, then OIT advises about licensing and hardware. The College will purchase technology if it can be applied to all.	The center demos new education technology, and receives faculty feedback. OIT handles the installation.	Faculty are free to choose to enhance classroom delivery. The resource center provides low-cost options. N/A
	Website	Technical resources are listed for online courses.	Online courses are addressed.	Copyright information is posted. Guidelines for copyright use.	Faculty can borrow a tablet.	
College 3	Interview	Helpdesk, Training Center.	Instructional Designer tests new technology, and offers it through the office.	Only security passwords.	Administrative decisions	N/A
	Website	Wireless support, instructional technology support, IT support.	N/A	The code of conduct for students addresses technology use via the student handbook.	The wireless policy and Information security basics are published.	N/A
College 4	Interview	N/A	Board policy covers the use of college communication technology and equipment the title of the policy.	OIT is the only entity at the institution that is permitted to install software on college owned computing equipment.	A textbook selection policy stipulates required resources for a class need to be approved by a committee.	N/A
	Website	Assistive technology and Library resources	Office of Information technology and office of student support & disability services	Administrative procedures dictated by the board, and OIT regulation.	N/A	N/A

(continued)

Table 9 (continued)

		Resources	Structure	Regulation	Implementation	Freemium
College	Interview	Everybody gets an optional [LMS] shell for every course they teach.	N/A	Policies for computer usage; policies about how often we review online courses; All requests go to IT.	Immediate dean will approve it to move forward, then the VP of academic affairs has to approve it, and if its more than 5k the board of trustees have to approve	Faculty can use anything as per the bargaining agreement.
5	Website	Plan for technology, the College FAQ.	Distance Education is the vehicle for delivering Ed. Tech.	Policy for web use.	N/A	N/A

### Data Discussion

This section briefly addresses various problems that arose during the data collection process. It also includes a brief discussion of the decision to move away from the original choice of coding software.

The initial plan for the collection of data assumed only one communication to invite participants to the study. However, the verbiage and communication channel of e-mail did not produce any results. While one individual decided to withdraw confirmation of participation, the rest of the individuals did not respond to multiple inquiries confirming the data collected. The intention of using anymeeting.com was to utilize a neutral space for the interview, with recording and dial-in capabilities.

### Summary

This chapter included presentation of the data collected from interviews and from the institutional websites. The data collected from websites were presented first, followed by descriptions of the interactions and experiences of the researcher during the

interview process, as well as a review of excerpts collected from the interviews, and closed with a discussion on problems which arose during the data collection process.

Chapter V addresses the findings, with comparison of the data collected through the interview process to the data collected through the website collection process.

Findings from these analyses is compared to the rest of the data sets collected from the websites. The chapter closes with notable consideration for managing educational technology in New Jersey community colleges, and recommendations for future studies.

## **Chapter V. Discussion and Recommendations**

The purpose of this chapter is to answer the questions posed by this research. Due to the nature of the data sets, the answers to the research questions will be substantiated by two sets of data: findings produced by comparing the narratives of the interviews against the narratives of the websites of five community colleges in New Jersey. The findings are then cross-referenced against the demonstrative patterns in data collected from the collective website samples. Finally, the chapter addresses points for consideration, and includes recommendations for educational technology managers as well as for future research.

### **Methods and Procedures**

Data were collected using two forms of data collection for a set of community colleges in the state of New Jersey. The first set of data collected public documents from websites from 19 New Jersey community colleges. The websites were identified using the New Jersey Higher Education website as a resource. The researcher accessed each website, and using a set of specific keywords, searched for references to educational technology management. Sites with language discussing the management of educational technology were saved in PDF format, and then uploaded to the Dedoose system.

The second form of inquiry was conducted via interview, wherein 38 individuals were contacted and invited to participate in the study. Individuals were selected based on their role within their community college. In addition to solicitation via email, individuals were solicited face-to-face through the NJEDge consortium, a local educational technology resource. Of the 38 individuals invited to participate, five were interviewed.

The researcher used 24 descriptors to categorize the data collected, excerpts were tagged by college and collection method. Two sets of analysis were conducted. In the first cycle, the public documents found on institutional websites were coded for parts/phases of technology implementation as described by adaptive structuration theory. The second analysis was conducted using thematic coding, focusing on identifying narrative patterns regarding educational technology regulation, resources, and organizational structures.

### **Summary of Findings**

The codes used to analyze the data excerpts were generated using the research questions as guides. The questions were developed specifically to address the two lenses of inquiry—systems and paradigmatic—answering both the questions of “what” and “how” in the context of resources, structures, and policies relating to educational technology management in New Jersey community colleges.

**RQ1. How do New Jersey community college policies structure the use of institutional educational technology resources?** Of the five institutions with data collected via interviews, only two had referenced any structures pertaining to the management of educational technology resources. The same institutions all had some references to institutional structures on their websites. Generally, information technology policies, board actions, and copyright law were cited as driving the policing of technology on campus, and educational technology falls into that category.

The predominant artifact for communicating organizational structures regarding educational technology was through the goals and objectives of the institution, or by

describing the purpose of specific departments: distance learning (online learning), information technology, helpdesk, library, and academic computing.

The interviewee from College 1 alluded to a new system created to “mitigate” educational technologies. Referring to an innovation center, the interviewee discussed a change in structure. Rather than moving through the independent process of testing and implementing technology, faculty were able to engage in a collective space to explore educational technology options.

The structural mechanism of a faculty center was also present in College 1 and College 5. Although the interviewees from College 1 and College 5 did not mention a specific center, their respective websites addressed technology development centers or programs. In College 1, a center for technology was developed as a space for the development of teaching best practices of existing institutional educational technology, but not policing:

The training workshops help faculty and staff to keep up with college supported tools and applications. Together with faculty support team, we assist faculty to design distance learning courses and provide technical support to students taking these courses.

In College 5, rather than a center, the website made mention of a faculty distance learning area as a means of encouraging faculty members to “enhance their courses with online activities, experiences, and resources.” Although these spaces are resources to faculty, they are also managerial devices for the adoption and use of educational technologies by faculty.

The interviewee from College 4 addressed the topic of structures from a different perspective. The decentralized organizational hierarchy was highlighted as a structure which may need to be addressed. While the interviewee and her counterpart work with academic technology, they report two different entities within the institution. College 4 did not have any website artifacts representing structure as an element of educational technology management.

The College 4 interviewee discussed the culture of technology as integral in the institution, explaining that “Faculty senate will talk about ed tech as part of their regular business; it is not something that is set apart or is separate from the operation.” College 4 has engrained technology into the environment:

Our college sees itself as a technically enabled academic environment, we actually have stated in the college catalogue [that] statement—not a policy or procedure—and it states that any class can be enhanced with technology at any time.

The culture of technology was also readily visible throughout a variety of website artifacts. Unique to the College 4 website was an artifact titled “E-Services,” identifying all elements of academic and organizational services available online. Included was a reference to an e-services consultation available for any end-user; “E-Services are provided to current and prospective students through virtual ‘web’ communication. College 4 is using the newest technology to assist you with your academic questions.”

From the perspective of structure, the interviews represented three different approaches to managing educational technology. The first was to create a center, to function as a catch-all for development and innovation; the second was an assessment of



organizational reporting; and third was the infusion of technology into the culture of the institution.

The artifacts from the websites also reflected one or more of the previously mentioned structures as a method of managing technology. Collectively, there were five excerpts discussing centers for educational technologies, 10 excerpts positioning distance education spaces as resources for educational technology innovations, and six excerpts identifying information technology as a means of delivering education technologies. As for the cultural aspect, six institutions incorporated educational technology into their mission statements or institutional goal objectives.

Table 5 in Chapter 4 suggests that the majority of communication addresses the technical and social identification of structures (arrays of structure), as well as general aspects of organizational structures (dimensions of structure), as well as details about navigating those structures (activity level tactics). In Table 6 in Chapter 4, it is clear that the websites focus the majority of the narrative on resources and structures rather than regulation.

Regulation or policies pertaining to educational technology are not directly addressed or discussed in both narratives. The lack of explicit discussion, as well as the indirect management techniques demonstrated through the creation of organizational structures (centers), affirms the notion that the management of educational technology is a negotiation between the institution and its faculty.

**RQ2. How do existing policies in New Jersey community colleges regulate the use of software in the classroom? How are community colleges in New Jersey regulating the classroom use of freemium software?** Although the interviewees did

not address specific policies regarding services, they did identify two entities which regulate access to software resources: information technology and federal and local purchasing laws.

The information technology as well as purchasing departments act as gatekeepers to software resources for both College 5 and College 1. In both interviews, the interviewees discussed the roles information technology and purchasing have in provisioning educational technology for faculty. While the information technology and purchasing departments act as gatekeepers of technology inside the school, it is important to mention that federal and state laws impact the resources that the colleges may acquire. The interviewees from College 1 and College 4 identified noninstitutional policies as impacting how educational technology is purchased and used, describing the time and access restrictions associated with acquiring resources.

The interviewee from College 5 stated that there were policies for computer usage and maintenance of online courses, but these policies were departmental and were not applicable across the College. When asked about regulation of technology, the interviewee from College 5 simply stated that regulation was lacking.

In addition to formal laws, the interviewees discussed informal approaches to managed educational technology. In College 4, the interviewee explained that the lack of explicit policies regarding educational technology was by design, and that it was, in fact, part of how the College constructed a culture of educational technology in its institution:

There is a board policy which covers the use of college communication technology and equipment the title of the policy is fairly dated and goes back to telephones and probably ditto machines; however, the policy itself has been

updated frequently throughout the users to includes the internet, and, uh, photocopiers, and printers, and scanners. And it's all what they lump into communication equipment specifically and basically at the board policy level . . . there aren't real specific policies at board policy level, there aren't intentionally specific lists of or an exhaustive list of permitted uses and forbidden uses.

A review of all website artifacts coded to this question (resources & polices; regulation) produced a set of departmental and federal policies.

Internally, there were departmental policies and third-party policies. Departments issuing educational technology resources and regulations include: distance learning, information technology, A/V, library, disability services, and marketing (social media policies). Internal and nondepartmental policies were represented by five artifacts. These policies were produced by SecondLife, Pearson, and LibGuide. Finally, as discussed by the interviewees, external regulations were also represented. Included in the artifacts were references to Family Educational Rights and Privacy Act (FERPA), Higher Education Opportunity Act (HEOA), and copyright laws.

None of the five colleges which included interviews had any public documents posted on their websites regarding freemium technology. Of the nine website resources citing any regulation of freemium technology, four resources were identified as student handbooks, four were identified in general information technology policies, and one was referenced in an adjunct FAQ web-document. For the most part, references to regulating freemium were very weak, vague, and used general terminology alluding to general software regulations, the term *freemium* or reference to any other specific software type

was not discovered in any of the data set collected from public documents published on institutional websites.

For example, a policy found on one of the websites did not specify any type of software, and simply stated that “clarification regarding the use of the College’s internet access may be obtained from the Chief Information Officer.” While the majority of policies addressed computer restrictions on campus to college computers, one referenced students’ rights to information disclosure.

Despite mechanisms to assist students with concerns pertaining to the use of technology, guidelines for how students should identify improper disclosure of their information or violation of their rights were not provided or addressed. The data collected for this research indicates that in New Jersey community colleges, freemium technologies, or any specific type of software, are distinguished by form and function: with software need and function managed by the faculty, and software form (when applicable or required) managed by the institution.

Although freemium technology is not explicitly addressed in the collected data, there were a number of references addressing the implementation, structures, resources, as well as policies pertaining to educational technologies in New Jersey community colleges. The code for freemium technology had the lowest number of excerpt assignments; it was unique in the sense that it had the biggest discrepancy in representation by collection method. The majority of excerpts relating to freemium technology were answered during interviews, with very few excerpts collected from websites addressing the topic. Of the data collected from the 19 community colleges, three institutions had over 10% of all excerpts collected from websites address elements

of freemium educational technology. One institution also had a small representation (6%) of all excerpts concerning elements freemium technology. These institutions did not include interviews as a method of data collection.

The references addressed in these findings did not specifically address freemium technology; instead, they contained a general interpretation of educational technologies. The artifacts did not discriminate by technology type (openware, freemium, opensources, etc.), but there were general references to educational technology software. This finding illuminates the clustering of resources under the general terms of educational software or resources, without clear consideration to the variety of educational technology software types, and the subsequent end-user experience or ramifications associated with the variety of resources.

The interview sessions proved to have more relevant and direct information pertaining to freemium use than any of the website data collected. It was made clear by all of the interviewees that policies directly regulating the use of freemium technology in the classroom do not exist. Interview comments included, “Faculty do not have any restrictions regarding the software they use in the class,” and “faculty are free to choose to enhance classroom delivery if they want to use it [technology] beyond the classroom.” Alternatively, the interviewee from College 4 mentioned that while explicit policy regarding freemium technology does not exist, the practice of using freemium technology may fall under the jurisdiction of another policy.

**RQ3. How do New Jersey community colleges policies address the implementation of educational technologies in the classroom?** References to implementation of educational technologies were made in four out of five of the

community colleges, which included a data collection using the interview method. In the interviews that addressed implementation, a formal process and chain of command was referenced. In some cases, the software purchases were managed by the colleges; in other cases, by the department.

In College 2, “software purchases are managed by the College, not the department/division” and “the College will purchase technology if it can be applied to all [members of the institution].” Faculty have the opportunity to contribute to the implementation of college-wide educational technologies “through the Innovation Center. The Center demos new education technology, and receives faculty feedback. Office of Information Technology handles the deployment.” This process was not reflected in the data collected from the website, posting only contact information (via phone number or online form).

College 1 referenced set-up similar to College 2 for the implementation of educational technologies, although College 1 did not have any excerpts regarding implementation during the interview, their website did detail a reference to faculty-driven special projects: “The Center supports innovative projects including software evaluation, instructional material development and professional development activities.”

The interviewee from College 3 also mentioned a “center for teaching excellence . . . [for] trying out new and different technologies.” However, the details pertaining to the implementation process were not known to the researcher, and were not mentioned on the websites. College 3 recognized that the implementation of technology is multistep process, and although the institution can deploy the technology, it is important for the end-user to register for it. College 3 used their website to advise that “all students using

the College 3 wireless network must register with the MIS department, must be given a copy of [the] wireless policy and must sign the Wireless Policy Usage Agreement.”

Whereas the previous three institutions did not really address the details of the implementation process, the interviewees for College 4 and College 5 were well-versed in the technology implementation process. At College 4, the process for requesting educational technology was very similar to the processes described by other institutions:

If you have a piece of software to use in the classroom for academic purposes, the proper procedure to follow would be to notify your department head or academic division dean who will then notify the office information technology . . . you will hand it over to OIT [Office of Information Technology], you have to give them the entire package including original CDs and licensing information. Today you can ask them to download it and install it. If it’s something the College is going to purchase, it’s basically the same process . . . OIT is the only entity at the institution that is permitted to install software on college-owned computing equipment. They have administrative procedure that regulate what they will and won’t install. The effective summary of the procedures is that they will obey copyright law. They will only install software on computers that they have license for or can be clearly show to be open-source.

The interviewee from County College 5 remarked that this process was not an efficient model for the implementation of educational technology in the classroom, citing static definitions of educational technology as not being flexible enough to accommodate the fluidity associated with type categorization of new and emerging technologies.

The rich detail provided by the interviewees from College 4 and College 5 was not readily available on their respective institutional websites. In fact, College 4 did not have an identifiable excerpts relating to the subject of implementation amongst the public documents published on their websites. The interviewee from College 5 described a cumbersome process, with strong emphasis on availability of resources and reference to an annual process, rather than one that is ad-hoc.

Of all data collected from 19 college websites, only 12 websites had references to the implementation of technology, most of these references had relatively average weights (relevance), with only one college referencing some detail pertaining to educational technology. The majority of the excerpts cited informational text rather than procedural text, and were found in either faculty handbooks, policy manuals, or general information sites.

The procedures for implementing educational technologies were discovered almost exclusively through the interview process. Further, the information on the websites does not address the process itself, as much as the protocols an end-user may follow to gain access to technology. Considering the absence of formal technology management, as discussed in the literature, a decentralized approach to the management of educational technology was found. The fragmented management was developed and distributed by the faculty as well as by the institution.

**RQ4. How do New Jersey community colleges enforce regulation relating to the use of educational technologies in the classroom?** The collected artifacts from interviewees rarely addressed the enforcement of regulations. Despite providing educational resources in the form of services or software, only one interviewee, College



3, mentioned passwords as an enforcement strategy. The interviewee from College 4 stated that locking down the computer was a strategy.

A review of website artifacts produced a similar result, with little reference to any enforcement for internal policies pertaining to educational technology. The regulations were identified, but generally lacked language regarding policy enforcement. While mandatory compliance is implicit, language pertaining to enforcement in case of policy violation is missing.

**RQ5. What resources are made available to support and implement educational technologies? Do these resources incorporate applicable institutional policies?** All interviewees addressed this question. The answers were broken down into two categories: software and service. The interviewee from College 3 mentioned services available to end-users. The College 5 interviewee, on the other hand, discussed services offered by information technology, such as services that empower the faculty to request installations of software in their classrooms. The College 5 also provides LMS course shells for faculty to use at their discretion. The use of course shells can be coupled with the option of online training for traditional and required online training for online faculty.

While data from the interviews produced artifacts that reflected software or service resources, the websites from these same institutions had matched similar artifact types: software and services, as well as informative information about data safety; College 1 provides guidance for detecting suspicious emails, while College 4 provides a service to resolve identity theft. Of the five websites reviewed, one excerpt discussed software resources, 13 focused on providing service resources, and two addressed data

security. A review of data collected from all the websites produced similar patterns, with the 25 excerpts addressing a service, and 12 excerpts addressing software resources.

Resources were the most addressed topic on the websites, with 150 excerpts. However, the discussion pertaining to structure and regulation to support the resources was not as prevalent. The lack of organizational and operational substantiation in relation to the resources was a pattern that was identified in the first cycle of data analysis, represented by a majority in the arrays of structure and structural dimensions. Across all 19 community colleges, there was little mention of systems, or relational descriptions of educational technology. While interviewees were able to discuss support and implementation of educational technologies, it was predominantly due to their experience as actors within the institution.

### **Implications for Practice**

The artifacts collected from interviews and public documents indicate that explicit regulation of educational technology in the classroom is not a practice in New Jersey community colleges. Instead, educational technology is subject to federal and state policies. At least two New Jersey community colleges were found to have board-issued, college-wide regulations, but frequently these regulations were broad and rarely enforced.

The five institutions studied have an established mechanism of educational management which attempts to balance academic need with organizational implementation. While pedagogical use is managed by the faculty and governing academic bodies, access to institutional educational technology is managed by ancillary institutional bodies, often in the form of procedural frameworks. Departments such as the information technology, purchasing, or distance-education filter educational

technologies through lengthy means in an effort to maintain oversight and compliance with federal or state regulations.

The use of internal educational technologies are managed to maintain compliance with federal and state regulations. However, freemium resources are not regulated and are (in most cases) subject to the discretion of the faculty. The majority of institutions reviewed utilize a variety of center-oriented services to validate the use of noninstitutional resources in the various colleges.

### **Recommendations**

One common theme amongst New Jersey community colleges was the lack of information regarding the intent of educational technology. Future research in higher education management would need to address the intention of educational technology resources available in New Jersey community colleges. In this study, distance learning was identified by interviewees and on the websites as resources for educational technology. Further, many of the websites referenced LMS as well as distance-learning programs, which begs the questions, would the institutions have invested in LMS if they were not supporting distance-learning initiatives? How does the presence of distance learning affect the implementation of educational technology in an institution?

Another pattern that emerged was the concept of data usage and data collection consent. Two artifacts were found to have language regarding student consent. In one artifact, it was stated that student consent is required for data collection, and in another artifact (from a different college) it was stated that student consent to data collection was implicit when the student visited a site, and that if the student did not wish to have data

collected, he/she must submit a request in writing. Further research is required to examine how student data is defined, collected, and managed.

While further research is required, based on this research, it is recommended that New Jersey community colleges engage its members in an open dialogue regarding the technology as a learning tools. The following tactics are recommended to New Jersey community colleges as means of improving the management of educational technologies on campus:

1. Removal of barriers: A number of interviewees addressed the issue of access to quick technology, such as apps from the mobile stores. By employing techniques to expedite the purchase process, or by creating an internal store, the institution can expedite access to the technology and thus allow faculty and students to use of relevant resources as needed and when needed.
2. Educational technology as a topic during union negotiations: The interviewees indicated a need to continuously negotiate the nuances of technology with the boundaries set forth by faculty contracts. Often these boundaries are unclear, creating uncertainty for individuals who work with faculty to implement educational technology. Establishing standards and relational contexts on an institutional level will reduce the uncertainty of functional boundaries experienced by educational technology managers, and reduce the burdens of managing technology experienced by faculty.
3. Empower students to know their rights as users of technology and as students: This can be done during the orientation, or by maintaining students' rights resources on the website.

#### 4. Maintaining websites that are compliant with the HEOA.

Fundamentally, it is recommended that New Jersey community colleges pursue an open dialogue aligned with the goals of the mission. Further, rather than focusing on resources and functionality, the institutions should address the purpose and need of the technology. Narrative pertaining to the role of educational technology in the institution was severely lacking; therefore, it is important for leadership to address the function of educational technology and then determine the best way to meet the needs.

#### **Summary**

The literature review served to identify the influence of federal, local, and cooperative bodies on the management of educational technologies in New Jersey community colleges. In this research, it was found that narratives in public documents focus predominantly on describing available educational technology resources and how to use them. While external regulations exist and are well-communicated, policies internal to the organization they are absent from the public sphere. Further, the mechanisms designed to regulate the educational technology are the very barriers which impede educational technology in New Jersey community colleges.

Findings from this research indicate that educational technology at New Jersey community colleges is managed indirectly, through a complex web of external policies and internal procedures. Institutional educational technology is managed through an array of gatekeepers, usually in the form of ancillary service providers with extensive procedural frameworks guiding the implementation and access to educational technologies. The response to provide some level of institutional intervention in

educational technologies has generally been to create an abundance of services, most frequently in the form of a faculty center or learning and teaching center.

## References

- Anderson, C. (2009). *Free: The future of a radical price*. New York, NY: Hyperion.
- Barber, B. (2011). Faculty leadership and instructional technologies: Who decides? In T. Treat (Ed.), *Technology management: New directions for community colleges*, No. 154 (pp. 73–86). San Francisco, CA: Jossey Bass.
- Barry, D., Carroll, B., & Hansen, H. (2006). To text or context? Endotextual, exotextual, and multi-textual approaches to narrative and discursive organizational studies. *Organization Studies*, 1091–1110.
- Beard, D.F., & Humphrey, R. (2014). Alignment of university information technology resources with the Malcolm Baldrige Results Criteria for performance excellence in education: A balanced scorecard approach. *Journal of Education for Business*, 89(7), 382–388.
- Baxter, L. A., & Babbie, E. (2004). *The basics of communication research*. Toronto, Canada: Thomson-Wadsworth.
- Berger, P. L., & Luckman, T. (1967). *The social construction of reality*. New York, NY: Penguin Books.
- Bischsel, J., & Patrick, F. J. (2014). *IT governance, risk, and compliance in higher education*. Retrieved from Educause ECAR Publication website: <http://www.educause.edu/library/resources/it-governance-risk-and-compliance-higher-education>.
- Boggs, G. R. (2010). *Democracy's colleges: The evolution of community colleges in America*. *White House Summit on Community Colleges*. Washington, DC: U.S. Department of Education.

- Bostrom, R., Gupta, S., & Thomas, D. (2009). A meta-theory for understanding information systems within sociotechnical systems. *Journal of Management Information Systems*, 17–48. doi: 10.2753/MIS0742-1222260102
- Brayfield, A., Adler, P. A., & Adler, P. (1999). Peer power: Preadolescent culture and identity. *Contemporary Sociology*, 28(4), 421. doi:10.2307/2655303
- Brown, C., & Czerniewicz, L. (2010). Debunking the “digital native”: Beyond digital apartheid, towards digital democracy. *Journal of Computer Assisted Learning*, 357–369. doi: 10.1111/j.1365-2729.2010.00369.
- Bruner, J. (1991). The narrative construction of reality. *Critical Inquiry*, 18, 1–21.
- Carrasco-Nungaray, M., & Vallejo Pena, E. (2012). Faculty institutional agents in community college. *Journal of Applied Research in the Community College*, 20(1), 44-51.
- Center for Community College Student Engagement. (2014). *Contingent commitments: Bringing part-time faculty into focus*. Retrieved from [http://www.ccsse.org/docs/PTF\\_Special\\_Report.pdf](http://www.ccsse.org/docs/PTF_Special_Report.pdf)
- Clark, B. (1983). *The higher education system: Academic organization in cross-national perspective*. Los Angeles, CA: University Press.
- Cobban, A. (2001). *English university life in the Middle Ages*. London, England: Taylor & Francis.
- Creswell, J. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage
- Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage.



- de la Iglesia, J. L. M., & Gayo, J. E. L. (2008). Doing business by selling free services. In M. D. Lytras, E. Damiani, & P. Ordonez de Pablos (Eds.), *Web 2.0: The business model*(pp. 1-14). New York, NY: Springer.
- DeBlois, P. B. (2006). Leadership in instructional technology and design: An interview. *EDUCAUSE Quarterly*, 28(4), 12–17.
- Del Favero, M., & Bray, N. (2005). The faculty-administrator relationship: Partners in prospective governance? *Scholar-Practitioner Quarterly*, 3(1), 53–71.
- Depperman, A. (2013). Interview as text versus interviews as social interaction. *Forum: Qualitative Social Research*, 14(3), Article 13.
- DeSanctis, G., & Poole, M. S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, 5(2), 121–147.
- Dickson, P., & Thomas, A. B. (2006). *The bonus army*. New York, NY: Walker Books.
- Dmitrishin, A. (2013). Deconstructing distinctions: The European university in comparative historical perspective. *Journal of World History*, 5, 1–18.
- Duffy, T. (2011). The Flexner report: 100 years later. *Yale Journal of Biology and Medicine*, 269–276.
- Edmunds, R., Thorpe, M., & Conole, G. (2012). Student attitudes towards and use of ICT in course study, work, and social activity: A technology acceptance approach. *British Journal of Education Technology*, 84(3), 71–84.
- Educause Center for Analysis and Research. (2014). *Just in time research: Data breaches in higher education*. Retrieved from <https://net.educause.edu/ir/library/pdf/ECP1402.pdf>
- Fairclough, N. (2001). *Language and power*. London, England: Routledge.

- Fairclough, N., & Holes, C. (1995). *Critical discourse analysis: The critical study of language*. New York, NY: Longman Group Limited.
- Fletcher, J., & Karp, M. M. (2015). *Using technology to reform advising: Insights from colleges*. New York, NY: Teachers College Community College Research Center.
- Flick, U. (2006). *Constant comparative method*. London, England: Sage.
- Gagne, R. M. (2010). *Instructional technology: Foundations*. New York, NY: Routledge.
- Garza-Mitchell, R. L. (2011). Planning for instructional technology in the classroom. In T. Treat (Ed.), *Technology management: New directions for community colleges*, No. 154 (pp. 45–52). San Francisco, CA: Jossey Bass.
- Gauntlett, D. (2002). *Media, gender and identity: An introduction*. New York, NY: Routledge.
- Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). *Educational research: Competencies for analysis and application*. New York, NY: Pearson.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Los Angeles, CA: University of California Press.
- Gilbert, C. K., & Heller, D. E. (2013). Access, equity, and community colleges: The Truman commission and federal higher education policy from 1947 to 2011. *The Journal of Higher Education*, 84(3), 417–443.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.
- Harmer, B. M., & Pauleen, D. J. (2012). Attitude, aptitude, ability and autonomy: The emergence of “offroaders,” a special class of nomadic worker. *Behavior & Information Technology*, 439–451. doi:10.1080/0144929X.2010.489117

- Hillman, N.W., & Orians, E. (2013). Community colleges and labor market conditions: How does enrollment demand change relative to local unemployment rates? *Research in Higher Education*, 54(7), 756–780.
- Hofstadter, R. (1955). *Academic freedom in the age of the college*. New Brunswick, NJ: Transaction.
- Hutcheson, P. A. (2007a). Setting the nation’s agenda for higher education: A review of selected national commission reports, 1947–2006. *History of Education Quarterly*, 359–367. doi: 10.1111/j.1748-5959.2007.00104.x
- Hutcheson, P. A. (2007b). The Truman commission’s vision of the future. *Thought & Action*, 107–115. ISSN - 0748-8475.
- Imenda, S. (2014). Is there a conceptual difference between theoretical and conceptual frameworks? *Journal of Social Science*, 38(2), 185–195.
- Januszewski, A., & Molenda, M. (2007). *Educational technology: A definition*. New York, NY: Lawrence Erlbaum.
- Jarzabkowski, P., & Kaplan, S. (2014). Strategy tools-in-use: A framework for understanding “technologies of rationality” in practice. *Strategic Management Journal*. doi:10.1002/smj.2270
- Johnson, S. (1998). *Who moved my cheese?* New York, NY: Penguin Putnam.
- JUSTIA. (2013). U.S .codes and statutes. Retrieved from <http://law.justia.com/codes/new-jersey/2013/title-18a/section-18a-3-30/>
- Kittelson, J. M., & Transue, P.J. (1984). *Rebirth, reform, and resilience. Universities in transition: 1300–1700*. Columbus, OH: Ohio State University Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.

- Lindberg, D. C., & Shank, M. H. (2013). *The Cambridge history of science: Medieval science*. New York, NY: Cambridge University Press.
- Lowi, T. J. (1972). Four systems of policy, politics, and choice. *Public Administration Review*, 32(4), 298–310.
- Lowi, T. J. (1985). The state in politics: The relation between policy and administration. In R. G. Noll (Ed.), *Regulatory policy and the social sciences*, pp. 105-110. Berkeley, CA: The Regents of the University of California.
- Luftman, J., Derksen, N., Dwivedi, R., Santana, M., Hossein, Z., & Rigoni, E. (2015). Influential IT management trends: An international study. *Journal of Information Technology*, 293–305. doi:10.1057/jit.2015.18.
- Lynch, K., & Ivancheva, M. (2015). Academic freedom and the commercialisation of universities: A critical ethical analysis. *Ethics in Science and Environmental Politics*, 15, 6–21. doi:10.3354/esep00160
- McCaughey, R. (2003). *Stand, Columbia: A history of Columbia University in the city of New York, 1754–2004*. New York, NY: Columbia University Press.
- McGoldick, J., Campbell, R. E., Nachtigal, P., Wefing, J. B., & Wellbrock, R. D. (2015, April). *Strategic priorities for New Jersey Higher Education: 2015*. Retrieved from <http://www.state.nj.us/highereducation/documents/pdf/2015Report.pdf>
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey Bass.
- Middle States Commission on Higher Education (MSCHE). (2015, November 8). *About us*. Retrieved from <https://www.msche.org/?Nav1=ABOUT&Nav2=MISSION>

- Miller, D., Breton-Miller, I. L., & Lester, R. H. (2013). Family firm governance, strategic conformity, and performance: Institutional vs. strategic perspectives. *Organization Science*, 24(1), 189–209. doi:10.1287/orsc.1110.0728
- Miller, M. T., & Miles, J. M. (2008). Internal governance in the community college: Models and quilts. *New Directions for Community Colleges*, 141, 35–44. doi: 10.1002/cc.313.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. Los Angeles, CA: Sage.
- Moodle.org. (2015). *History*. Retrieved from <https://docs.moodle.org/29/en/History>.
- Myran, G., & Ivery, C. L. (2013). The employability gap and the community college role in workforce development. *New Directions for Community Colleges*, 45–53. doi: 10.1002/cc.20058
- New Jersey Council of Community Colleges (NJCCC). (2015). *About*. Retrieved from <http://www.njccc.org/about/chairs-welcome/>
- New Media Consortium (NMC). (2016). *About*. Retrieved from <http://www.nmc.org/about/>
- Nickoli, R. A. (2013). Role of the community college in economic development. *New Directions for Adult and Continuing Education*, 69–78. doi: 10.1002/ace.20075.
- Niederman, F., Briggs, R. O., de Vreede, G. J., & Kolfschoten, G. L. (2008). Extending the contextual and organizational elements of adaptive structuration theory in GSS research. *Journal of the Association for Information Systems*, 9(10), 633–652.
- NJEDge. (2016). *About us*. Retrieved from <http://njedge.net/about-us/>

- Nguyen, C. P. (2015). Challenges of student engagement in community colleges. *The Vermont Connection*, 32 (7), 58-66.
- Office of Educational Technology. (2010). *National education technology plan 2010: Executive summary*. Retrieved from <http://tech.ed.gov/netp/netp-executive-summary/>
- Oria, B. (2012). Enhancing higher education students' employability: A Spanish case study. *International Journal of Technology Management & Sustainable Development*, 11(3), 217–230.
- Orlikowski, W. J. (2000). Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science*, 11(4), 404–428.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Peña, E. V. (2014). Marginalization of published scholarship on students with disabilities in higher education. *Journal of College Student Development*, 55(1), 30–40.  
doi:10.1353/csd.2014.0006
- Perens, B. (1999). *Open sources: Voices from the open source revolution*. Retrieved from: <http://www.oreilly.com/openbook/opensources/book/>.
- Poole, M. S., & DeSanctis, G. (2004). Structuration theory in information systems research: Methods and controversies. In M. E. Whitman & A. B. Woszczyński (Eds.), *The handbook of information systems research* (pp. 44–65). Hershey, PA: Idea Group.

- President's Commission on Higher Education. (1947). *Higher education for democracy: A report of the President's Commission on Higher Education*. New York, NY: Harper & Brothers.
- Rhodes, G. & Slaughter, S. (2005). Academic capitalism and the new economy: Privatization as shifting the target of public subsidy in higher education. In R. Rhodes & C. Torres (Eds.), *The university, state, and market: The political economy of globalization in the Americas* (pp.103-140). Stanford, CA: Stanford University Press.
- Riessman, C. K. (2008). *Narrative methods for the human sciences*. Thousand Oaks, CA: Sage.
- Rose, J., & Scheepers, R. (2001, June 27–29). *Structuration theory and information system development: Frameworks for practice*. Paper presented at the 9th European Conference on Information Systems, Bled, Slovenia. Retrieved from [https://www.researchgate.net/publication/221409631\\_Structuration\\_Theory\\_and\\_Information\\_System\\_Development\\_-\\_Frameworks\\_for\\_Practice](https://www.researchgate.net/publication/221409631_Structuration_Theory_and_Information_System_Development_-_Frameworks_for_Practice)
- Rubenstein, R. (2004). *Aristotle's children: How Christians, Muslims, and Jews rediscovered ancient wisdom and illuminated the Middle Ages*. Orlando, FL: Harcourt Books.
- Rudy, W., & Brubacher, J.S. (1997). *Higher education in transition: A history of American colleges and universities* (4th ed.). Piscataway, NJ: Transaction.
- Sabato, J., & Botan, N. (1968, September 25). La ciencia y la tecnologia en el desarrollo futuro de America Latina [Science and technology in the future development of

Latin America]. Paper presented at The World Order Models Conference, Bellagio, Italy.

Saichaie, K., & Morpew, C.C. (2014). What college and university websites reveal about the purposes of higher education. *The Journal of Higher Education*, 85(4), 499–530.

Sakaiproject.org. (2015). *History*. Retrieved from <https://sakaiproject.org/sakai-history>

Saldana, J. (2016). *The coding manual for qualitative researchers*. Los Angeles, CA: Sage.

Schuguransky, D. (2005). The political economy of higher education in the time of global markets: Whither the social responsibility to the university? In R. Rhodes & C. Torres (Eds.), *The university, state, and market: The political economy of globalization in the Americas (pp.301-320)*. Stanford, CA: Stanford University Press.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (3rd ed.). New York, NY: Teachers College Press.

Shurville, S., Browne, T., & Whitaker, M. (2010). An appetite for creative destruction: Should the role of senior academic technology officer be modeled on a CIO or a CTO? *Campus-Wide Information Systems*, 27, 137–147.

doi:10.1108/10650741011054447

Smith, J. A., & Osborn, M. (2008). Interpretative phenomenological analysis. In J. Smith (Ed.), *Qualitative psychology: A practical guide to research methods(pp.53-80)*. London, England: Sage.



- Smith, M. (2007, November 30). Academic freedom and higher education employees. *NEA Higher Education Research Center Update*. Retrieved from <http://www.nea.org/assets/docs/HE/vol11no4.pdf>
- Staber, U., & Sydow, J. (2002). Organization adaptive capacity: A structuration perspective. *Journal of Management Inquiry*, 408–424.  
doi:10.1177/1056492602238848
- State of New Jersey Department of Community Affairs (2016). *Division of Local Government Services*. Retrieved from <http://www.state.nj.us/dca/divisions/dlgs/>
- State of New Jersey Department of Community Affairs. (2005). Guide to the New Jersey local unit pay-to-play. Retrieved from [http://www.state.nj.us/dca/divisions/dlgs/resources/poli\\_docs/p2pguide.pdf](http://www.state.nj.us/dca/divisions/dlgs/resources/poli_docs/p2pguide.pdf)
- State of New Jersey Department of the Treasury. (2015, December 1). *Division of Purchase and Property*. Retrieved from <http://www.nj.gov/treasury/purchase/>
- State of New Jersey Office of the Secretary of Higher Education. (2015). *NJ college & university directory by sector*. Retrieved from [http://www.state.nj.us/highereducation/colleges/schools\\_sector.shtml](http://www.state.nj.us/highereducation/colleges/schools_sector.shtml)
- Stones, R. (2005). *Structuration theory: Traditions in social theory*. New York, NY: Palgrave Macmillan.
- Thelin, J. (2011). *A history of American higher education*. Baltimore, MD: The Johns Hopkins University Press.
- Tong, A., Flemming, K., McInnes, E., Oliver, S., & Craig, J. (2012). Enhancing transparency in reporting the synthesis of qualitative research. *BMC Medical Research Methodology*, 12. doi:10.1186/1471-2288-12-181

- U.S. Bureau of Labor Statistics. (2014). *Home page*. Retrieved from <http://www.bls.gov/>
- U.S. Department of Veterans Affairs. (2015). *Education and training*. Retrieved from <http://www.benefits.va.gov/gibill/history.asp>
- Ven, K., & Verelst, J. (2006). The organizational adoption of open source server software by Belgian organizations. *IFIP International Federation for Information Processing*, 111–122.
- Volokh, E. (2009). Thomas Cooper, early American public intellectual. *New York University Journal of Law & Liberty*, 4(372), 373–381.
- Wagner, T. M., Belin, A., & Hess, T. (2014). Converting freemium customers from to free to premium: The perceived fit in the case of music as a service. *Electron Markets*, 55(6), 259–268.
- White House. (2009, September 20). *A strategy for American innovation: Driving towards sustainable growth and quality jobs*. Retrieved from [https://www.whitehouse.gov/assets/documents/innovation\\_three-pager\\_9-20-09.pdf](https://www.whitehouse.gov/assets/documents/innovation_three-pager_9-20-09.pdf)
- White House. (2010). *The White House summit on community colleges: Summit report*. Retrieved from [https://www.whitehouse.gov/sites/default/files/uploads/community\\_college\\_summit\\_report.pdf](https://www.whitehouse.gov/sites/default/files/uploads/community_college_summit_report.pdf)
- Willis, G. (2007). *Mr. Jefferson's university*. Washington, DC: National Geographic.
- Wu, M. Y., & Ku, C. W. (2013). A study of key factors in the introduction of RFID into supply chains through the adaptive structuration theory. *International Journal of Industrial Engineering: Theory, Applications and Practice*, 20(5-6), 429–443.

## Appendix A. IRB Approval Form



Last Name: Lyudmilova

Project: Regulating the Use of Educational Technologies in New Jersey Community Colleges

### INITIAL, REVISED OR CONTINUATION

#### NOTICE OF IRB REVIEW AND APPROVAL

The project identified below, for which you requested review and approval by the NJCU Institutional Review Board for the Protection of Human Participants in Research, has now been reviewed and approved. This approval is based on the assumption that the materials you submitted to the NJCU IRB c/o Grants and Sponsored Programs contain a complete and accurate description of all the ways in which human subjects are involved in your research.

This approval is given with the following conditions:

1. That you will conduct the research according to the plans and protocol you submitted.
2. That you will immediately inform the IRB of any injuries to subjects that occur in the course of your research.
3. That you immediately inform the IRB of any problems that arise in the course of your research.
4. That you will immediately inform the IRB of any changes that you make in the protocol of the research.
5. That you will give each person who signs the consent document a copy of that document, if you are using such documents in your research.
6. That you will retain all signed consent documents for at least three years after the termination of the research.

*Failure to comply with these conditions will result in the withdrawal of this approval.*

Approved

Not Approved

Name of Principal Investigator: Armando Morell

Title of Project: Regulating the Use of Educational Technologies in New Jersey Community Colleges

Additional Conditions: n/a

Signed,

NJCU Institutional Review Board Chair

09/21/15  
Date

## Appendix B. Informed Consent Form

### Informed Consent Form

I agree to participate in a study titled “Policies Regulating the Use of Educational Technologies in New Jersey Community Colleges”, which is being conducted by Ms. Yelena Lyudmilova of the Education Technology Department, New Jersey City University. The purpose of this study is to provide better understanding of how the implementation and use of educational technologies are being regulated in New Jersey community colleges. The data collected in this study will be analyzed and submitted in the form of a dissertation to the New Jersey City University Education Technology Department graduate faculty in partial fulfillment of the requirements for the degree of Doctor of Education.

I understand that I will be interviewed, and I will be asked to discuss how my institution regulates and implements educational technologies in the classroom. My participation in the study should not exceed one hour.

I understand that my responses will be anonymous and that all the data gathered will be confidential. I agree that any information obtained from this study may be used in any way thought best for publication or education provided that I am in no way identified and my name is not used.

I understand that there are no physical or psychological risks involved in this study, and that I am free to withdraw my participation at any time without penalty.

I understand that my participation does not imply employment with the state of New Jersey, New Jersey City University, the principal investigator, or any other project facilitator.

If I have any questions or problems concerning my participation in this study I may contact:

Yelena Lyudmilova, Primary Investigator  
(862) 245-2144 or email [ylyudmilova@njcu.edu](mailto:ylyudmilova@njcu.edu);

Dr. Christopher Shamburg, Dissertation Advisor  
(201) 200 -03078 or email [cshamburg@njcu.edu](mailto:cshamburg@njcu.edu)

Dr. Beimnet Teclezghi, Chair of NJCU Institutional Review Board,  
(201) 200-3139 or email [btectezghi@njcu.edu](mailto:btectezghi@njcu.edu).

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Signature of Participant

Date

---

Signature of Principle Investigator

Date

### Appendix C. Interview Questions

The following set of interview questions were used as the framework for each interview.

1. What policies does your institution have in place regarding the use of institutional educational technology resources?

(a) Does your institution regulate classroom management? How?

(b) How does your institution regulate classroom use of freemium software?

2. How does your institution address the implementation of educational technologies in the classroom?

(a) How does your institution enforce regulations relating to the use of educational technologies in the classroom?

(b) What resources are made available to support and implement educational technologies? Do these resources incorporate applicable institutional policies?

3. Do you have any current or future plans for educational technology in your institution? What would you like to see implemented and how?

## Appendix D. Data Confirmation Form

### INTERVIEW SUMMARY

Date of Interview	xx/xx/xxxx5
Location of Interview	anymeeting.com
Duration of Interview	~xx minutes
Interview #	5id

#### Responses to Questions

Q1. What policies does your institution have in place regarding the use of institutional educational technology resources?

Q1B. How does your institution regulate classroom use of freemium software?

Brief Summary/Key Points	Notable Quotes

Q2. How does your institution address the implementation of educational technologies in the classroom?

Q2A. How does your institution address the implementation of educational technologies in the classroom?

Q2B. What resources are made available to support and implement educational technologies? Do these resources incorporate applicable institutional policies?

Brief Summary/Key Points	Notable Quotes
-	

Q3. Do you have any current or future plans for educational technology in your institution? What would you like to see implemented and how?

Brief Summary/Key Points	Notable Quotes

## Appendix E. Solicitation Emails

### Solicitation Email Draft 1

I, Yelena Lyudmilova, a doctoral graduate student from the Department of Education Technology in New Jersey City University, invite you to participate in a research project entitled “Policies Regulating the Use of Educational Technologies in New Jersey Community Colleges”.

The purpose of this research project is to provide better understanding of how Educational Technologies are being regulated in New Jersey community colleges. The data collected in this study will be analyzed and submitted in the form of a dissertation to the New Jersey City University Education Technology Department graduate faculty in partial fulfillment of the requirements for the degree of Doctor of Education. Should you choose to participate, you will be asked to discuss how your institution regulates and implements educational technologies in the classroom. The expected duration is one hour.

If I have any questions concerning my participation in this study I may contact:

Yelena Lyudmilova, Primary Investigator  
(862) 245-2144 or email [ylyudmilova@njcu.edu](mailto:ylyudmilova@njcu.edu);

Dr. Christopher Shamburg, Dissertation Advisor  
(201) 200 -03078 or email [cshamburg@njcu.edu](mailto:cshamburg@njcu.edu)

Dr. Beimnet Teclezghi, Chair of NJCU Institutional Review Board,  
(201) 200-3139 or email [bteclezghi@njcu.edu](mailto:bteclezghi@njcu.edu).

Participation is voluntary. The information you provide will be kept confidential. If you would like more information about the research, please contact me directly. I look forward to your involvement.

Thank you,  
Yelena Lyudmilova  
Doctoral Candidate  
Department of Education Technology

New Jersey City University

This study has been reviewed and received ethics clearance through New Jersey City University Institutional Review Board

Solicitation Email Draft 2

My name is Yelena Lyudmilova and I am a doctoral student in the Ed.D. in Educational Technology Leadership program at New Jersey City University. As the Managing Director of the Center for Innovation in Teaching and Learning at your institution you have a unique perspective regarding how educational technology is implemented and maintained. In my research, I hope to understand gain insight on best practices for managing Ed Tech in New Jersey Community Colleges.

The purpose of this email is to invite you to participate in a brief web-based interview to understand how your institution implements and manages Education Technology, discuss some lessons learned, and perhaps where you see the trend of Ed Tech moving.

Important Notes:

- IRB approval of the survey and the resulting analysis was granted by Seton Hall University in September of 2015.
- The interview will take approximately 30 minutes of your time to complete, and your responses will remain completely confidential.
- Data derived from the study and copies of the project will be provided to my New Jersey City University dissertation advisor Christopher Shamburg, Ph.D. along with members of my review committee that includes Laura Zieger, Ed.D. Lourdes Sutton, Ed.D. and Elvira Vieira, Ed.D. All data files and corresponding analysis will be stored on a secured device to maintain the anonymity of respondents.
- Participation is strictly voluntary and you may refuse to participate at any time.
- Should you choose to participate in the study, you will receive an informed consent form prior to the meeting.

Thank you for giving me a small amount of your time to assist in my dissertation research. If you require additional information or have questions regarding the more specific details of my study, please use the contact information below and I will respond as soon as possible. Please enjoy the rest of your day, and take care.

Sincerely,  
 Yelena Lyudmilova  
 E-Mail: [ylyudmilova@njcu.edu](mailto:ylyudmilova@njcu.edu)  
 Dissertation Advisor: Christopher Shamburg, Ph.D.



### Appendix F. Website Excerpts

Applied Codes	Applied Weight	Excerpt Sample
		Atlantic Cape Community College
Freemium	0	(Reference)
Implementation	2	The PC Services department, under the leadership of Douglas Hedges, Dean Information Technology Services, provides software...
Resources	3	...providing assistance for noncontent issues, serving as liaison between the instructors and other areas of the college
Resources	2	Computer Labs, Wifi Hotspots, Acceptable use guidelines, Study Skills, Virtual Lab, Helpful writing Web site
Resources	1	Flow of an Online Course Reprinted from: Lewis, Chad T. (1993) "Online Education: Issues and Some Answers"
Resources	2	Informational Technology: Implemented Entrinsik Informer to 4.4.1 for Colleague, Upgraded Unidata 7.3 Database
Resources	2	Instructional Resources This "Idea Page" will hopefully encourage you to explore ways you can use technology in your classroom
Resources	3	Instructional Technology Department, Instructional Technology Workshops, A list of the Instructional Technology Department Workshops
Resources	3	Credo is an easy to use one stop search service, providing access to hundreds of encyclopedias, dictionaries, thesauri...
Resources	2	Symphony, the library's online book catalog, provides access to over 1 million volumes contained in the collections ...

Applied Codes	Applied Weight	Excerpt Sample
Resources	2	Every classroom is equipped with a TV, VCR, overhead projector and computer ...
Resources	1	Resources for Faculty Atlantic Cape Access to Blackboard Learn 9 ...
Resources	3	Call for What Atlantic Cape, Who to Call for What If you have any kind of technical problems, call the Help Line ...
Resources	1	Helpful Links for Adjuncts Honolulu Community College Faculty Development, Center for Teaching Effectiveness, Rutgers University ...
Resources & Policies	2	Blackboard Course Shell Request Form. This form is intended for faculty to request a Blackboard course shell for online...
Resources & Policies	3	PC Services Welcome to the PC Services Home Page! If you have any questions or comments, please feel free to e-mail John
Resources & Policies	2	The Testing Office administers tests for on-line classes and provides alternate testing opportunities for students ...
Resources & Policies	3	Technology Workshops – These are offered at different times throughout the year, based on interest.
Resources & Policies	0	Services available: Blackboard (Bb) courses – Blackboard is a complete Web-based course management system (CMS).
Structure	1	Distance Education As telecommunications shrink the world, access to college expands. Now, with distance learning technology ...
Structure	3	Institutional Objective 3.3: Maintain satisfaction of relevant stakeholders with the College's effectiveness of technology...
Structure	1	Online Courses: Blackboard begins on the first day of the semester, January 19.
Structure	3	Instructional Technology Projects – Instructional Technology staff are available to discuss any ideas ...
Structure	3	The Instructional Technology Department was created to assist and encourage faculty members...

Applied Codes	Applied Weight	Excerpt Sample
Structure	2	Atlantic Cape is dedicated to providing superior academic programs to a diverse community of students. The online education...  Bergen Community College
Resources	3	Moodle has many potential uses for a traditional face-to-face class. Moodle is a web based Learning Management System
Resources	3	TWEP is a self-paced online program designed to teach faculty how to use the College's learning management system, Moodle
Resources	3	Deadline for submission listed on the CITL web site. Setting up Accounts Accessing WebAdvisor via My.Bergen.edu (Portal)
Resources	2	Teaching & Learning issues. Please consult the list below and contact the faculty member directly via email
Resources	2	AFDP Approved Activities AFDP Activities Approved for 201516 (Partial List) Faculty CITL Workshops Registration Request
Resources	2	Help Desk The IT Help Desk provides end user technology support onsite at our walking location on campus, via phone, an
Resources	2	Community Faculty & Staff > Information Technology > Media Technologies
Resources	2	my.bergen.edu Portal, Bergen Email, Moodle, and WebAdvisor on the Portal Password Resets Document & Records Management
Resources	3	College Resources and Services Academic Learning Centers Bergen Community College has a wide range of academic learning...
Resources	2	Media Faculty Help Desk: 201) 4477109 Adjunct Faculty Development
Resources	1	Spam, Phishing and Suspicious Email Information Technology Spam is the use of electronic messaging systems ...

Applied Codes	Applied Weight	Excerpt Sample
Resources & Policies	2	Media Technologies Policies & Procedures Requesting services Media Technologies We request 48 hours' notice for any service...
Resources & Policies	2	Academic Computing Welcome to the Academic Computing Department at Bergen Community College.
Resources & Policies	0	Bergen Community College has transitioned from a paper and pencil, student evaluation system, to an online student
Resources, Implementation	3,3	Faculty Services for Teaching & Learning CITL believes strongly in the motto "Faculty Empowering Faculty". The faculty s
Structure	3	The Center for Innovation in Teaching and Learning The mission of the CITL is to empower faculty to continuously improve
Structure	2	Instructional Projects/Consultation Any faculty member can get help designing instructional materials for their face-to-f
Structure	2	Faculty and Staff Resource Center CITL's Resource Room C-326 is open to full-time and part-time faculty and staff to work
Structure	3	Professional Development Grant CITL has limited budget to support faculty who wish to attend instructional technology-re
Structure	2	One-on-one Support Do you need assistance with Microsoft Office Software, Turn it in services, Web enhancing your class
Structure	3	...mission of the CITL is to empower faculty to continuously improve student learning outcomes through the appropriate Cent
Structure	2	Adjunct Faculty Development Program (AFDP) The AFDP is a chance to participate in workshops, strengthen your teaching s

Applied Codes	Applied Weight	Excerpt Sample
Structure	3	Media Technologies The Media Technologies department provides: Media Technologies Classroom assistance with any installed...
Structure	2	Information Technology The IT Help Desk provides end user technology support onsite at our walking location on campus, vi
Structure	2	Master's degree in TESOL or Applied Linguistics and the equivalent of two years of full-time college experience teaching
Structure	1	...develop computer technology skills needed to access, process and present information
Structure	3	College Resources and Services Academic Learning Centers Bergen Community College has a wide range of academic learning... Brookdale Community College
Implementation	3	iPad loan agreement
Regulation	1	General Information Know your copy rights - Resources for Teaching Faculty 10 big myths about copyright explained
Regulation	2	Copyright Information and Guidelines chat  email  phone  visit This guide is designed as an introduction to the
Resources	3	Need assistance? Please contact the Innovation Center at 732-224-2089 or click HERE ( <a href="http://www.brookdalecc.edu/acad">http://www.brookdalecc.edu/acad</a> )
Resources	1	Bankier Library - Brookdale Community College <a href="http://ux.brookdalecc.edu/library/index.php">http://ux.brookdalecc.edu/library/index.php</a>
Resources	2	Resources - Brookdale Community College... <a href="http://www.brookdalecc.edu/academics/onlineclasses/online">http://www.brookdalecc.edu/academics/onlineclasses/online</a>
Resources & Policies	3	Information - Brookdale Community College... <a href="http://www.brookdalecc.edu/academics/onlineclasses/virtual">http://www.brookdalecc.edu/academics/onlineclasses/virtual</a>
Structure	2	Online Courses - Brookdale Community College ...

Applied Codes	Applied Weight	Excerpt Sample
		County College of Morris
Freemium	1	SOFTWARE Violation of computer software license agreements; Unauthorized use of computer accounts or access codes;
Regulation	2	Academic Conduct In order to maintain academic integrity at County College of Morris...
Regulation	1	Family Educational Rights and Privacy Act (FERPA) Information below is provided by Michele Dunn, CCM Registrar
Regulation	2	Policy Governing Use of Information Technology Adopted and Approved by the Board of Trustees on April 20, 2011
Regulation	1	Sensitive Data Data, regardless of its physical form or characteristics, with the highest level of protection including,
Regulation	3	Compliance with this data protection policy is the responsibility of all members of the County College ...
Regulation	2	CCM Social Media Policy Governing Recognized Student Organizations and Official CCM Spokespersons Scope of Policy
Regulation	1	Copyright Laws Official CCM Social Media Representatives are required to respect the laws governing copyright and fair
Regulation	2	Enforcement Persons violating this Social Media Policy shall be subject to disciplinary action.
Regulation	2	Student Technology Help Desk The Student Technology Help Desk is open for business on the Second Floor of the LRC.

Applied Codes	Applied Weight	Excerpt Sample
Resources	1	General Information Online classes are similar to traditional face-to-face classes in that there is a real instructor an
Resources	1	INFORMATION LITERACY The Middle States Commission on Higher Education has challenged higher education to cover and asses
Resources	1	Library FAQ Library information Last Updated: Dec 21, 2015 URL: <a href="http://ccm.libguides.com/Info">http://ccm.libguides.com/Info</a>
Resources	1	Protecting Your Privacy Privacy settings on social media platforms maintained by Official CCM Social Media Representative
Resources & Policies	0	FERPA for Faculty and Staff FERPA Guidelines for Faculty and Staff The County College of Morris (CCM) Records and Registrar
Resources, Structure	2,3	Student Help Desk (face to face assistance hours vary) Location: SH200 (formerly known as ALounge). This service is ...
Structure	2	Library The library provides a wide variety of media and reference materials to support CCM's varied academic programs.
Structure	1	Math Center The Math Center, staffed by faculty, paraprofessionals and peer tutors, offers free tutorial assistance and
Structure	0	Disability Services The Disability Services Office works to ensure that any students with documented disabilities...

Applied Codes	Applied Weight	Excerpt Sample
Structure	3	Center The Writing Center is designed to help students improve their writing skills. Assistance is available through ...
Structure	2	Learning Resource Center Home > Learning Resource Center Learning Resource Center Named for the County College of Morris
Structure	3	For Distance Learning Students All of the library's services are available for distance learning students. Students who
Structure	3	CTE Center for Teaching Excellence The staff at the Center for Teaching Excellence (CTE) is tasked to support faculty...
Structure	2	CTE Frequently Asked Questions Louise and Samuel Olshan Endowment for Faculty Professional Development
Structure, Resources	3,3	Learning Resource Center > Alex De Croce Media Center Alex DeCroce Media Center The Media Center and Television Stud  Cumberland Community College
Regulation	1	Copyright Issues, Library Home, Students Faculty. Guidelines for classroom copying developed by the Ad Hoc Committee...
Regulation	2	(Referenced)
Regulation	2	(Referenced)
Regulation	3	Pearson Education End User License Agreement and Privacy Policy These terms constitute an agreement between You and Pear...
Regulation	2	Permission is required in order to reproduce Pearson copyright content.



Applied Codes	Applied Weight	Excerpt Sample
Regulation	1	The information contained in the library information system as it pertains to a patrons personal data as well as to
Regulation	2	Pearson Education Privacy Statement GENERAL INFORMATION ABOUT THE PRIVACY STATEMNT FOR PEARSON EDUCATION WEB SITE
Resources	1	Plus for Cumberland County To improving results ... Our goal is to help every student succeed....
Resources	2	(Referenced)
Resources & Policies	2	(Referenced)
Structure	2	(Referenced)
Regulation	3	Essex County College REFERENCE: N.J.S.A. 18A:64A12(o); N.J.S.A. 47:38.1 et seq.;
Regulation	3	18 U.S.C. §2530 et seq. PURPOSE: To maintain ... REFERENCE: 4 U.S.C. 23 et seq., 18 U.S.C. §2511 et seq. PURPOSE: Internet access to global electronic information resources
Resources	3	Available Equipment & Services Faculty, staff and students at Essex County College may request the following equipment a
Resources & Policies	3	ECC Information Technology   Essex County College – Information Technology Department Services Public Access ...
Structure	3	Welcome to the Information Technology department Website. The primary goal of the IT department is the development ...
Structure	2	MEDIA PRODUCTION AND TECHNOLOGY ...
Structure	2	ONLINE LEARNING ...

Applied Codes	Applied Weight	Excerpt Sample
		Hudson County Community College
Implementation	1	Assignment of student e-mail addresses Information Technology Services (ITS) will assign all students an official College...
Regulation	2	Social Media Guidelines Purpose This document outlines the publication policy...
Regulation	3	Acceptable Use Policy for Information Technology Systems Acceptable Use Policy Computer Labs I. PURPOSE
Resources	0	ONLINE TERMS YOU SHOULD KNOW ... Asynchronous: Learning in which interaction between instructors and students occurs...
Resources	1	WiFi Wireless Network Access Acceptable Use Policy Computer Labs Hudson County Community Colleges Wireless Network
Resources	1	Technology at HCCC will be used in collaboration with curriculum. Computers and other technology equipment are tools us
Resources & Policies	2	ACADEMIC LABORATORY GUIDELINES By using the Open Computer Labs, you have agreed to follow the Academic Laboratory rules
Resources & Policies	1	Academic Laboratory Rules and Regulations Acceptable Use Policy Computer Labs The Lab Assistants in the Open Labs...
Resources, Structure	3,3	Academic Computer Labs Acceptable Use Policy Computer Labs Our Mission is to provide quality assistance to students...

Applied Codes	Applied Weight	Excerpt Sample
Structure	3	Acceptable Use Policy for Information Technology Systems Acceptable Use Policy Computer Labs I. PURPOSE
Structure	3	OFFICE OF TEHCNOLOGY & INSTRUCTIONAL SUPPORT Information Technology Services
Structure	3	Welcome to HCCC Center for Online Learning
Implementation	3	Implement the Technology Strategic Plan to provide an integrated strategy regarding state-of-the-art technology...
Regulation	2	Academic Integrity at Mercer Online at MCCC Online students are held to the same level of accountability as students in
Resources & Policies	0	Fully online based classes Fully online classes are offered entirely online, although sometimes you will be asked to
Structure	2	About Mercer Online The Internet, computers, and independent study open alternate pathways to college.
Structure, Implementation	3,2	Purchase Program for Dell and Apple Computers
Structure, Implementation	2,2	Goal I.3. Strengthen faculty professional development opportunities with guidance from best practices to support ...
		Middlesex County College
Implementation	3	Instructional Design Home The Instructional Design Studio (JLC136) is a resource for faculty who w
Resources	1	TedEd Let's you create lessons worth sharing based on TedEd or YouTube videos. We also provide access to a wide range of
Resources	3	Enhanced Classrooms with ceiling mounted projectors, DVD/VCRs & PC's connected to the Internet Media Services – Equipment

Applied Codes	Applied Weight	Excerpt Sample
Resources	3	Online and Hybrid Courses Online Learning Resources The MCC Library provides access to a wide range of Online Databases
Resources	1	Online and Hybrid Courses Orientation for Online Courses Students in online classes are responsible for balancing ....
Resources	3	CELT, Technology Tools, Apps, APPS Collaboration Tools, GOOGLE DOCS, WIKI SPACES Flipped Classrooms, FLIPPED CLASSROOMS
Resources & Policies	3	Instructional Design Copyright Issues An Interactive guide to using coyrighted media in your course – A guide by Baruck
Resources & Policies	1	Family Educational Rights and Privacy Act (FERPA) The Family Educational Rights and Privacy Act of 1974 protects ...
Resources & Policies	3	Instructional Design Second Life & Education Second Life as a Virtual Learning Environment
Structure	3	CELT Learning Academies and Workshops Learning Academies In addition to one hour workshops, CELT offers significant 1
Structure	2	Online and Hybrid Courses Online and Hybrid Courses Online learning is a great option for students who are good  Ocean County Community College
Implementation	3	The IT Strategic Plan is also a collaborative effort with Ellucian (the SunGard Higher Education and Datatel merged ....

Applied Codes	Applied Weight	Excerpt Sample
Resources	3	Computer Labs/Technology, Resources, Study on Campus
Resources	2	Library FAQ, Study on, Campus
Resources & Policies	3	E-Learning Courses Many OCC courses are now held at Off-Campus sites. If you are registering through ...
Resources & Policies	1	Library Policies -Study on Campus Audiovisual Materials (/content/public/study-DVDs, CDs, CD-ROMs, videotapes, and ...)
Resources & Policies	3	Purpose of the Information Technology Strategic Plan. The strategic use of technology is vital to every institution...
Resources & Policies	2	Disability Accommodations Ocean County College complies with Section 504
Resources & Policies	3	Watch Our Video Online Resources Getting Started Degrees & Certificates
Structure	3	About Online Learning Study Earn your associate's degree completely online! Online We offer a variety of engaging...
Structure	3	Information Technology (OITE) About
Structure	1	We employ technology and learning outcomes assessment to enhance student success. We offer quality life-enhancing...
Structure	1	Continue to Enhance Classroom Technology...
Structure	3	Wireless Implementation The College implemented a robust wireless infrastructure throughout each academic, administrative...
Structure	2	Study (/content/public/study-online/request-for- Online now.html) information.html) (/content/public/study-online.htm
Implementation	2	Passaic Community College There are three types of online courses: A) Online without a synchronous component - These online courses do not re

Applied Codes	Applied Weight	Excerpt Sample
Implementation	2	Assist in the selection, development and application of new technologies. Assist in the assessment and evaluation
Regulation	3	Student Training: student training in the use of the tools of the learning management system for online classes is
Regulation	3	VERIFICATION OF IDENTITY OF ONLINE CLASS PARTICIPANTS PCCC complies with the Higher Education Opportunity ACT of 2008
Regulation	3	QUALITY OF ONLINE INSTRUCTION At PCCC, Distance Education is not a separate division of the college but a department rep
Regulation	2	Mission: PCCC offers high-quality, flexible, educational and cultural programs that meet the needs of Passaic County College
Regulation	1	This required college-level course introduces skills necessary for success in college, including note-taking, test-taking.
Resources	3	It also offers support to students for their Writing Intensive courses in the forms of face-to-face and small group...
Resources	1	Blackboard Learn™ Instructor Guide for Release 9.1.
Resources	1	...our commitment to student progress and program completion, the College strives to address our wide variety...
Resources	2	...information on policies and procedures, and assistance with student issues, and serves as a liaison between the instructors...
Resources	3	Additional faculty training is offered through the option of onsite and online training workshops and modules provided...
Resources	1	Mastering Online Discussion Board Facilitation Resource Guide
Resources	2	eTutoring - eTutoring - LibGuides at Passaic County Community College LibGuid

Applied Codes	Applied Weight	Excerpt Sample
Resources	1	... a tech support issue. View this page in a format suitable for printers and screen-readers or mobile devices.
Resources	3	Faculty Resource Center Resources for Faculty
Resources	3	AUDIO VISUAL EQUIPMENT AND TECHNICAL SUPPORT For audio visual services or equipment needs, the Media Services Department
Resources	1	Online Learning at PCCC Information about and support for online learning at PCCC
Resources	1	Login Instructions for PCCC Online Courses To access your online class(es), you must first log into your Portal account..
Resources	3	Resources for faculty Support services Online courses are ideal for students whose schedules or responsibilities...
Resources	1	Sample Rubric for a Blog Post Rating Characteristics Exceptional. The blog post is focused and coherently integrates
Resources	1	Dear Student, This email confirms that your registration into online courses at Passaic County Community College for the
Resources & Policies	3	Passaic County Community College Basic Standards for Online Course Design 1. Getting Started a. The course homepage
Resources & Policies	3	Blackboard for Faculty A guide for faculty using Blackboard for both online and traditional courses
Resources & Policies	3	FACULTY TRAINING AND OTHER FACULTY ISSUES Faculty at the college may voluntarily choose to teach online
Resources & Policies	0	Passaic County Community College Basic Standards for Hybrid Courses A hybrid course is one in which some of the in-person

Applied Codes	Applied Weight	Excerpt Sample
Resources & Policies	3	Passaic County Community College Basic Standards for Hybrid Courses A hybrid course is one in which some of the in-person
Structure	2	MISSION OF THE DISTANCE EDUCATION PROGRAM The PCCC Distance Education Program is committed to the College's mission dire
Structure	3	Online Learning at PCCC Information about and support for online learning at PCCC
Structure	3	Educational Technology Provide a forum for reporting from the administrative Assessment Group and the Planning Committee
Structure	3	The functions of the Educational Technology Committee will be to: Assist in the development of long-range plans
Structure	3	Online Learning at PCCC Office of Online Learning
Structure	1	MISSION: PCCC offers high-quality, flexible, educational and cultural programs that meet the needs of Passaic County residents...
		Raritan Valley Community College
Implementation	2	Information Security Basics Protect your personal information. To minimize your risk of identity theft...
Implementation	2	All students using the RVCC wireless network must register with the MIS department, must be given a copy of this wireless...
Regulation	1	Use of any technology to gain access to test answers, test questions or prohibited materials such as notes ...
Resources	2	In addition to help with courses, we also offer assistance with other aspects of instructional technology:
Resources	1	Report Identity Theft If you become a victim of identity theft or suspect that your student information has been stolen,



Applied Codes	Applied Weight	Excerpt Sample
Resources	3	Instructional Technology Some of our services include: imagescanning, PowerPoint presentations, RVCC website main
Resources	1	Security Information Security Basics Our Services... We're talking about here, Information Security. The things
Resources	1	STRONG PASSWORDS OVERVIEW
Resources	1	The College's wireless network is available in all buildings on the main campus and several outside areas.
Resources	3	Service Computer Labs & Printing Instructional Technology Network
Resources	3	Technology Services Location:FirstFloor,SomersetS-118 andSecondFloor,WestW-20
Resources	1	Outage Information Information on the recent system outage from August 28, 2015 to September 5, 2015.
Resources & Policies	3	Computer Use Regulations
Resources & Policies	2	...of personal privacy and the free and open discussion of ideas. RV, therefore, pledges that it will...
Structure	2	The purpose of this policy is to provide reliable and secure wireless network access at Raritan Valley Community College.

Rowan College at Burlington County

Applied Codes	Applied Weight	Excerpt Sample
Regulation	3	Office of Information Technology Rowan College at Burlington County's Office of Information Technology (OIT)
Regulation	3	BURLINGTON COUNTY COLLEGE BOARD POLICY TITLE: USE OF COLLEGE COMMUNICATION AND INFORMATION TECHNOLOGY NUMBER:919 E
Regulation	2	Purpose This administrative procedure sets forth a user's agreement and the specific procedures of the College employed...
Regulation	3	Identity Verification Accreditation: Rowan College at Burlington County (RCBC) is fully accredited by the Middle State
Regulation	3	... students and visitors are required to abide by Rowan College at Burlington County Board Policy 919 ...
Resources	2	Welcome to the Library of Rowan College at Burlington County My Account & Catalog Go to My Library Account ...
Resources	2	Online Resources/Online Access How do I get to the databases? Go to the RCBC library website. Go to "Online Resources"...
Resources	1	Positive Outlook, Proper Support and Assistive Technology Help Inspirational Student Succeed at RCBC
Resources	3	Professional Development programs offer an abundance of training opportunities from communicating effectively to using
Structure	3	Distance Education at Rowan College at Burlington County (RCBC) was started in 1978 to enable...

Applied Codes	Applied Weight	Excerpt Sample
Structure	3	E-Services are provided to current and prospective students through virtual web communication.
Structure	3	Office of Information Technology The Office of Information Technology's mission at Rowan College at Burlington Count
Structure	2	Online Student Help Desk RCBC offers technical support to ensure that students have access to their student...
Structure	1	Office of Student Support & Disability Services The Office of Student Support and Disability Services supports RCBC
Structure	3	The Career Adaptive Learning Literacy (CALL) Lab has been developed for Rowan College at Burlington County under
Structure	3	Student Support Services Office's mission is to ensure all students with disabilities are provided access to education...  Rowan College at Gloucester
Freemium	0	Additional Information Clarification regarding the use of the College's internet access may be obtained from the Chief Information Officer
Freemium	0	Students have the right against improper disclosure of their grades and records which faculty acquire in the course
Regulation	1	RCGC must annually distribute to all enrolled students a notice of the availability of the information available to stud
Regulation	3	Acceptable Use of Technological Resources (Email, Enterprise Information System, Internet, Social Media & Off-Campus ...
Regulation	1	Summary of Civil and Criminal Penalties for Violation of Federal Copyright Laws Source: U.S. Department of Education's
Regulation	3	IT Policy When you visit the Rowan College website (www.rcg c .edu) and log in to the RCGC Portal, you will be asked to

Applied Codes	Applied Weight	Excerpt Sample
Regulation	1	Computer Labs eLearning Support Technical Support Wireless Access CAP Center
Regulation, Freemium	1,3	Academy of Lifelong Learning Online Courses
Resources	1	CRITICAL ONLINE COURSE INFORMATION Rowan College at Gloucester County Division of Instructional Technology I
Resources	1	There will be a green status bar at the top of the page telling you the action has been queued...
Resources	1	Contact eLearning Support Students will be unable to log in to their eLearning courses until the first scheduled day ...
Resources	1	Known Issues DO NOT USE A MOBILE DEVICE TO SUBMIT CONTENT IN YOUR ELEARNING COURSE!
Resources	3	The following pages provide information that will help faculty navigate and use eLearning. The same links can be found...
Resources	2	Computer Labs Students can use their Rowan College username and password to log on to classroom computers and other
Resources	2	Online Courses Professional Development Customized Training
Resources	1	Microsoft Office Get Microsoft Office for FREE! The Office of Technology has worked with Microsoft to give Microsoft
Resources	1	Print Management As of January 2, 2013, RCGC will be implementing a Print Management System on campus. All RCGC students...

Applied Codes	Applied Weight	Excerpt Sample
Resources	1	Microsoft Office Wireless Access Rowan College provides campus-wide wireless access to students, faculty, staff, guests
Resources	1	Audiobook in the OverDrive Media Console™ format can be checked out and downloaded from the sjrlc.lib.overd...
Resources	1	Frequently Asked Questions Student FAQs Q. I am registered for an online course, but it isn't showing up. A. Online co
Resources	2	Orientation & Video Tutorials Orientation To access the Student Orientation Course, please login to the RCGC Portal at...
Resources, Structure	3,3	SMART Classrooms SMART Classrooms/Mobile Technology SMART Classrooms contain permanent technology
Resources, Structure	3,3	Technical Support Technical Support is located on campus to help students who are experiencing technical issues with
Structure	0	College Policies and the College Policy Office Office of the President The governance and management of ...
Structure	3	Office of Technology The Office of Technology plays an important role in helping Rowan College achieve its mission in ...
Freemium	1	Salem Community College Students are not allowed to install any software on any campus computer.
Freemium	1	Most software is operated under copyright from various software developers. This software is only to be used on campus

Applied Codes	Applied Weight	Excerpt Sample
Freemium	1	Students are not allowed to install any software on any campus computer.
Implementation	2	Acceptable Use Agreement By accessing Salem Community College computing, communication, and information resource
Regulation	1	To ensure the integrity and reliability of computer and communications resources, students are encouraged to report ...
Regulation	3	... data protection schemes or to uncover security vulnerabilities.
Regulation	2	Connecting unauthorized equipment to the Family Educational Rights and Privacy Act Under Section 438 of the General Educational Provision Act (as amended) and Pa
Regulation	1	Family Educational Rights and Privacy Act Under Section 438 of the General Educational Provision Act (as amended) and Par
Regulation	2	If you enroll in a program offered through Salem Community College, personally identifiable information you provide us, ...
Regulation	3	Salem Community Colleges computing, communication and information resources are provided for the support of its education.
Regulation	2	By accessing Salem Community College computing, communication, and information resources, students agree to be bound by ...
Regulation	2	Family Educational Rights and Privacy Act Under Section 438 of the General Educational Provision Act (as amended)
Regulation	1	Violations of the rights of any person or entity protected by a copyright, patent, trademark or similar law, or regulation.
Regulation	1	Unauthorized use of telephones, mail system, technology, electronic resources, or other employer-owned equipment

Applied Codes	Applied Weight	Excerpt Sample
Regulation	1	The Higher Education Opportunity Act (Public Law 110-315) (HEOA) was enacted on August 14, 2008.
Resources	2	Security Awareness In the age of growing technology, it is important to ensure any personal information is kept
Resources	3	All Salem Community College online classes, including hybrid, use Canvas, SCC's Learning Management System (LMS).
Resources	2	Support of the instructional programs offered by the College through the selection, acquisition, organization, maintenance.
Resources	1	Self-Service Portal Login First Time Login to Self Service Portal • Navigate to <a href="http://www.salemcc.edu">http://www.salemcc.edu</a> .
Resources	2	Student Help Information Technology Self Service Password Registration Forgot Password Canvas
Resources	1	Logging into Student Email Using a web browser, navigate to <a href="http://email.students.salemcc.edu">http://email.students.salemcc.edu</a> Enter your username
Resources	3	10/13/2015 Salem Community College CURRENT STUDENTS PROSPECTIVE STUDENTS PROGRAMS FACULTY/STAFF VISITORS & COMMUNITY
Resources & Policies	3	The mission of the Salem Community College Information Technology department is to provide faculty, staff, and students
Resources & Policies	1	The provision of assistance to the end user that instructs them how to critically utilize an information resource.
Structure	2	Acceptable Use Agreement — Student Salem Community College provides broad access to its computing, communications
Structure	1	The mission of the Michael S. Cetti Memorial Library is to provide exceptional service by meeting the distinctive needs
Implementation	3	02.3 Procedures for Implementation of Acceptable Use of Computer Network, Resources and Facilities Policy:

Applied Codes	Applied Weight	Excerpt Sample
Regulation	3	Sussex County Community College Policy No.: 102.3 Area: Administration Adopted: July 23, 2013 102.3...
Resources	1	Web Study Logon Information Sussex County Community College You will not be able to see your course list until the first. Union County College
Implementation	3	Resource and Budget Considerations The implementation of recommendations defined in this plan depends upon the available
Regulation	1	The right to consent to disclosures of personally identifiable information contained in the student's records
Regulation	3	INSTRUCTIONAL USE OF TECHNOLOGY Union County College has historically been a leader serving students with varied needs
Regulation	3	STUDENT ACCESS TO TECHNOLOGY Technology plays a central role in the lives of students at Union County College. Students
Regulation	3	ADMINISTRATIVE USE OF TECHNOLOGY Union County College's administrative information systems refer to computer application
Resources	1	Frequently Asked Questions About the Computer Systems at Union County College What is my User Name? The user name is fir
Resources	3	Network The data communications backbone consists of a fiber-based network with the computer center on the Cranford camp
Resources	2	Technological innovations such as the 3D-Printer will enable New Jersey workers to make products for a global customer.
Resources & Policies	2	Becoming a Student / Distance Education / Network Policy POLICY STATEMENT Union County College expects all members...
Resources & Policies	1	Current Students / Password Information Union County Colleges network passwords expire every 180 days ...
Resources & Policies	2	Policy and Use Guidelines for the World Wide Web I. Introduction Union County College recognizes the value and potent



Applied Codes	Applied Weight	Excerpt Sample
Structure	3	Distance Education @ Union County College provides you with an educational experience ...
Structure	3	UNION COUNTY COLLEGE DRAFT PLAN FOR TECHNOLOGY FY 2012 – 2014
Structure, Implementation, Regulation	2,2	LIBRARY USE OF TECHNOLOGY The library has continued to serve the students' needs for resources and information literacy
Structure, Resources & Policies	3,3	DISTANCE EDUCATION The demand for distance education is growing in colleges and universities. For Union County College
Freemium	0	Warren County Community College WCCC is committed to safeguarding the financial information of students and members of the campus community.
Freemium	2	V. Software Warren County Community College licenses the use of most computer software applications from a variety...
Regulation	1	COPYRIGHT POLICY Warren County Community College shall comply with the 1976 Copyright Act through the following guidelines...
Regulation	3	Warren County Community College's Technology Use Policy Computing resources are valuable
Regulation	3	...decision will be reviewed by the President, whose decision will be final. Technology Use Policy Computing resources ...
Structure	3	Distance Learning Distance Education credit courses are courses that rely on technology to deliver ...