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Service-Learning in Higher Education: Andragogy in Argentina, Mexico, and the United States

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Abstract

This paper examines service-learning case studies in Argentina, Mexico, and the United States. It analyzes whether Andragogy, the study of how to teach adult learners, is equally applicable and effective in different country contexts. First, we argue that service-learning is the most natural and appropriate teaching technique that aligns with the Theory of Andragogy. We then discuss how a clear understanding of Andragogy is the key to helping mature students process knowledge. Two cases of service-learning in an international context provide a research platform for examining differences in learning concepts, constructs, and student competences. We juxtapose Argentina and Mexico governance against U.S. governance, and we differentiate the public policy challenges within the two contexts. Our methodological approach employs grounded theory to identify themes of knowledge transfer through problematic environments. By comparing service-learning strategies in Argentina and Mexico vis-à-vis in the U.S., we find variations in assumptions of public administration practice, teaching methods, and student learning outcomes.

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Abstract in Spanish

Este documento examina casos de estudio del aprendizaje y servicio en Argentina, México y los Estados Unidos. Analiza si la Andragogía, el estudio de cómo enseñar a los estudiantes adultos, es igualmente aceptable y efectivo en contextos de diferentes países. Primero, se planteó que la técnica de la enseñanza del aprendizaje y servicio es lo más natural y apropiado que se alinea con la Teoría de Andragogía. Después se fundamentó que un entendimiento claro de la Andragogía es la clave para ayudar a estudiantes adultos a procesar el conocimiento. Dos casos de estudio del aprendizaje y servicio en un contexto internacional proveen una plataforma para investigar diferencias en el aprendizaje con respecto a conceptos, construcciones, y competencias de los estudiantes. Se yuxtapone la gobernabilidad de Argentina y México con respecto a la gobernabilidad de los Estados Unidos y se diferencian los desafíos de las políticas públicas dentro de estos dos contextos. La metodología emplea la teoría fundamentada para identificar temas de la transferencia de conocimiento en ambientes problemáticos. Al comparar estrategias del aprendizaje y servicio en Argentina y México con respecto a los Estados Unidos, se encontró variación en los supuestos de la práctica de la administración pública, métodos de enseñanza, y resultados del aprendizaje del estudiante.

Keywords:

Service-learning, adult learning, andragogy

Introduction

Service-learning is a relatively new pedagogy that attempts to blend classroom theory and hands-on experience through service with and for a community organization. The logic behind service-learning is to engage students in relevant activities that address human and community needs while promoting self-reflection and development. Service-learning or experiential learning for public administration addresses a need for leadership competence in public service and certainly more so in a fast-globalizing environment. In a world facing a “crisis of modernity,” as critical theorists have argued, more sophisticated lenses and teaching methodologies are needed to retool concepts, constructs, and competences of public administration and public service to solve complex public policy issues. The international service-learning case studies from the Americas, specifically Argentina, Mexico, and the United States presented in this research informs the Theory of Andragogy by refocusing

attention from a subject-centered to a more problem-centered learning environment.

This paper first discusses the concept of service-learning and its definitions and descriptions. It then presents a Theory of Andragogy proposed as the science or profession of how to teach adult learners. The paper discusses how a clear understanding of Andragogy is the key to helping mature students process knowledge. We argue that service-learning is the most natural and appropriate teaching technique that aligns with the Theory of Andragogy. The paper then presents two cases of service-learning from an international context. The first case study examines the joint participation of students from Argentina, Mexico, and the United States in understanding various public policy challenges. The second set of case studies examine U.S. students in understanding only U.S. contextual policy issues. The paper goes on to juxtapose Argentina and Mexico governance against U.S. governance, differentiating the public policy challenges within the three country contexts. Service-learning is one concept, but strategies and methods must differ in the respective Argentina, Mexico, and the United States context because the public policy challenges differ. The paper then presents a modified grounded theory approach identifying themes of adult learning in each case. Findings from both cases provide evidence on three themes: skills acquired, Andragogical tools, and social transformation. The discussion and conclusions present lessons learned for effective service-learning programs relative to Argentina, Mexico, and the United States cultural frameworks, which provides a better understanding of the Theory of Andragogy.

Service-Learning

One component or manifestation of experiential learning is service-learning. Service-learning is an important tool for the adult learner. Due to the professional aspect of Master of Public Administration programs, all graduate classes include adult students. Educating adults brings with it a different set of challenges. Adults bring wisdom and experience into the classroom and look to assimilate their knowledge and understanding (life experiences) with the academic instruction being offered (Jacobs & Hundley, 2010; Knowles et al., 1998). Because Service-learning is so uniquely capable of providing a participant with experience, it serves as a useful method for teaching adults (Keyes & Jang (2021); Mumford et al., 2021). At its most basic level, service-learning is the effort to connect community action towards existing knowledge (Stanton et al., 1999).

This definition clarifies the basic concept of service-learning: the purposeful intermingling of service and education. Jacoby (1996) provides the best conceptualization for service-learning. The author states: “Service-learning is a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development” (p. 5).

There is empirical evidence that suggests strong relationships between service-learning and student benefits both academically and ethically (Melcior & Bailis, 2002). Evidence suggests that effective service-learning programs improve academic grades (Astin et al., 2000; Markus et al., 1993), and increase attendance in school, (Melcior & Bailis, 2002). Service-learning has an effect on personal values and orientations (Einfeld & Collins, 2008; Markus et al., 1993) and research shows that it develops greater awareness of societal problems in participating students (Einfeld & Collins, 2008; Markus et al., 1993). Studies also suggest that participants in service-learning programs plan or express a desire to continue serving the community (Astin et al., 2000; Einfeld & Collins, 2008).

Adult Development Theory

Adult development theory and research is rich with information on learning in adulthood during the various stages of life. The seminal piece was written in 1968 by Malcolm Knowles who put forth a deeper understanding of how adults learn to “distinguish it from preadult schooling” (351). He goes on to explain that the European concept of Andragogy better captures how adults learn. In essence, “pedagogy, the art and science of helping children learn” was contrasted with Andragogy which was defined as “the art and science of helping adults learn” (Knowles 1980, p. 43; see also Benavides et al., 2013). The author based these principles on several assumptions. The first four come from his early work and the last two are from later publications:

1. As a person matures his or her self-concept moves from that of a dependent personality towards one of a self-directing human being.
2. An adult accumulates a growing reservoir of experiences, which is a rich resource for learning.
3. The readiness of an adult to learn is closely related to the developmental tasks of his or her social role.

4. There is a change in time perspective as people mature – from future application of knowledge to immediacy of application. Thus, an adult is more problem centered than subject centered in learning.
5. The most potent motivators are internal rather than external.
6. Adults need to know why they need to learn something.

As with most theories, there are often detractors. Some scholars questioned whether Andragogy was a theory or more a collection of assumptions (Brookfield, 1986; Elias, 1979; Hartree, 1984). Their contentions rested on several issues but principally centered on the “explanatory and predictive functions generally associated with a fully developed theory” (Davenport & Davenport 1985, p. 158). Nevertheless, Andragogy as a theory of adult learning has been classified “as a theory of adult education, theory of adult learning, theory of technology of adult learning, method of adult education, technique of adult education, and a set of assumptions” (Davenport and Davenport 1985, p. 157). Merriam, Caffarella, and Baumgartner (2007) note that Andragogy “became a rallying point for those trying to define the field of adult education as separate from other areas of education” (85). Finally, Knowles (1989) suggested that he “prefers to think of [Andragogy] as a model of assumptions about learning or a conceptual framework that serves as a basis for an emergent theory” (112). In the field of public administration, most students are adult learners. The majority are already working adults in professional positions in government and nonprofit organizations and the higher education acquired confirms their preexisting knowledge and adds essential information for future promotion. An understanding of Andragogy versus pedagogy will strengthen the faculty member’s ability to teach and help the student discover how their own personal experience supports comprehension of the new knowledge presented. Establishing Andragogy suggests adults experience a different learning process.

The Adult Learning Process

Malcolm Knowles (1990) suggested that adult learners can be identified as those who are autonomous, have reached a level of self-direction, are goal oriented, they have accumulated life experiences and knowledge; are practical, focusing on sections of a lesson that are more useful to them, are relevancy-oriented, and need to be shown respect. Individuals derive meaning from successive learning experiences and it is how they make sense of existence. As

adults, this learning process is perfectly natural and is as effortless as breathing (Mezirow, 1981). Scholars have presented statistics in terms of our ability to retain information based on the instructional method used (see Table 1).

Instructional Method	Percentage Retained
Lecture	5 of what they listen to
Reading	10 of what they read
Audio-visual	20 of what they hear and see
Demonstration	30 of what they hear, see, in person
Discussion	50 of what they discuss with others
Practice	80 of what they hear, see, and do
Teaching others	90 of what they teach

TABLE (1): INSTRUCTIONAL METHODS & RETENTION BY CHILDREN AND ADULTS (ADAPTED FROM BAHAUDIN ET AL., 2006)

Mujtaba and Preziosi (2006) argue: “Compared to children, and teens, adults need to be more involved in the learning process for the learning to be effective. Learner participation and interaction are critical to effective facilitation techniques that increase learning and retention with adult learners” (8). Based on these statistics for adult learners it is best to employ teaching techniques that require active involvement in the learning process such as experiential learning. Experiential learning involves a direct encounter with the phenomena being studied rather than merely thinking about the encounter, or only considering the possibility of doing something about it.

Several scholars have written about experiential learning and have noted its benefits to adult learners (Bound & Walker, 1991; Jarvis, 1987; Kolb, 1984; Usher et al., 1997). Merriam, Caffarella, and Baumgartner (2007) conceptualize Kolb’s (1984) work noting that learning from experience requires four different kinds of abilities:

1. An openness and willingness to involve oneself in new experiences (concrete experiences)
2. Observational and reflective skills so the new experiences can be viewed from a variety of perspectives (reflective observation)
3. Analytical abilities so that integrative ideas and concepts can be created from their observations (abstract conceptualization)
4. Decision-making and problem-solving skills so these new ideas and concepts can be used in actual practice (active experimentation) (164).

Kolb (1984) saw these phases as a cyclical process moving from concrete experience to reflective observation to abstract conceptualization to finally active experimentation.

Recent literature has continued to add to our understanding of service-learning in the context of student learning and community partnerships between places of higher education in the community and achieving service outcomes (Bahng, 2015; Bryer, 2014; Stout, 2013). It does not, however, inform the Theory of Andragogy relative to the teaching strategies important to adult learning in these service-learning contexts. Here, international service-learning is used because of its ability to expose students to culturally different experiences expanding our understanding of these teaching strategies. Specifically, the Argentine, Mexican and United States experience builds capacity bringing together students in chemistry, engineering, and administration to evaluate and compare the problems of municipal landfills and propose comprehensive solutions to reduce waste and minimize contamination. The U.S. experience informs on learning outcomes for the strategies important to negotiated and collaborative problem-solving. The contribution of this paper is to inform the Theory of Andragogy on differences in concepts, constructs, and competences through student international service-learning experiences.

Two Cases of Service-Learning from an International Context

Good governance rests with the professional public manager knowing how to both manage the relationships between the government and its society, as well as knowing how and when to administer necessary services. The sharing and replication of best practices allows public managers to learn about innovative policy solutions and examine the best methods and models for effective and efficient public administration (Benavides, 2008). Their ability to improve performance is an important factor for local government management. The case studies used in this paper demonstrate factors that address issues of institutional structure and managing relationships. First, the Argentine and Mexican experience represents a new model of international cooperation in research programs. The project, Bridging the Americas: Promoting Global Solution for Local Landfill Programs through Student Service and Learning represents a triparty student mobility program to evaluate landfill pollution in

three different parts of the Americas. The comprehensive learning and life changing experiences of this project support the development of future professionals with leadership capacity to propose innovative solutions. Second, the United States examples of city planning illustrate the role of the university as a partner in governance solutions to community issues. Students develop skills necessary to solve complex problems with multiple community partners. The student work adds value to policy and community engagement aspects of the local projects while introducing them to the skills needed to navigate and negotiate the vertical and horizontal aspects of U.S. governance.

The ongoing struggle for the training of graduate students in public administration is that the methods and strategies must address the comprehensive aspects of each theoretical lens. We argue that service-learning in a U.S. context is about managing interdisciplinary relationships. Public policy challenges are about teaching students and community partners to balance multiple platforms of governance including public and private configurations. The service-learning experiences help students develop a knowledge framework around government as a structure and function of management internal to the organization, and governance as a concept that expresses the democratic relationship government has with its society.

Our examination of service-learning from the U.S. context – managing relationship – may inform and help our Argentine and Mexican neighbors in their professionalization of their own administration and civil service. Learning through the U.S. service-learning context is integral to the process. Argentina and Mexico are in our hemisphere and the U.S. can benefit from their geographic closeness. Both Argentina and Mexico are experiencing patronage and corruption issues as the United States did at the turn of last century. In response to these issues, the U.S. created the professional manager or the council manager form of government. Because of U.S. history and its transformation to a professional bureaucracy, it serves as a guidepost for others going through the same professionalization process. Our argument suggests that if all the Americas have strong professional bureaucratic systems there is a bigger payoff for everyone through the stability of government and a decrease in corruption.

On the contrary, the reason for examining service-learning in Argentina and Mexico as a teaching method for building a professional bureaucracy is really about the different historical and intellectual traditions between these

countries and the United States. Services for the public have developed in different ways. If we want to provide the best services, we look to the best practices. Therefore, looking at municipal landfills in the three countries we expose students to global environmental concerns and best practices in sustainable policies, problem-solving, teamwork, and intercultural communication.

The experiential learning outcomes achieved through our Argentine and Mexican exchange were realized through a global experience in sustainability. Similarly, the U.S. service-learning outcomes are realized through partnership with the community to solve complex social problems. It is our contention that the service-learning projects help to frame our understanding of student learning in the Argentine, Mexican and U.S. contexts. As we explore specific government processes students may gain knowledge and translate that back into their own country experience. Our contribution illustrates the realized differences in teaching methods to achieve service-learning outcomes in these varying contexts.

Argentine and Mexican Governance

Our interest in student-learning and understanding of Argentine and Mexican public policy challenges relates directly to governance and public policy outcomes in Mexico and Argentina – the locations of our case studies. Some assumptions on the structure of their governance presented below are not necessarily contained within the boundaries of these two countries and may inform on Latin American policy at a larger scale. These countries were selected for our service-learning research based on ongoing relationships between the University of North Texas (UNT) Department of Public Administration, the Universidad Nacional de La Plata, Argentina, and the Universidad Autónoma del Estado de México (UAEM).

The intellectual traditions leading up to the current state of political affairs in Latin America in general are rooted in the Spanish convention. Early colonization efforts focused on enriching the crown and there was a strong military presence to safeguard the ruling class. Historically, many Latin American countries have foundations in military rule transitioning toward liberal democracy, and self-determination only within the last few decades. In Argentina, for instance, the Menem leadership (1989-1999) led to years of anti-

institutional practices creating delay in the formation of the current democratic state and resulting in continued poor public perceptions of government (Dinerstein, 2004).

Support for democratic reforms led to the promotion of public management tenets across Latin America in the 1980s. Attention to financial management in the 1990s, and consideration of freedom of information legislation has developed within the last decade (Santiso, 2008). The platforms of recent presidential candidates in both countries, have endorsed reforms to reduce corruption and crime, and address issues of public sector accountability and transparency. Strengthening opportunities for open access, in 2014, the Mexican legislature passed the Federal Transparency and Governmental Public Information Access Law (Benavides et al., 2013). The institutional challenge relates to the extent transparency and openness transcend organizational culture and the ways of doing government business in these countries (Benavides, 2006).

Barriers to good governance are further intensified by capacity limitations in the professional bureaucracy, high legislative turnover, and a limited checks-and-balances challenge. The extent of changes toward the establishment of a democracy in line with fundamental principles of transparency is relative to both the structure of political institutions and the organizational cultures that comprise them. For instance, Benavides (2006) suggests the passage of reforms in government transparency and open access creates opportunities for building up education. Newer laws like the Federal Transparency and Governmental Public Information Access Law in Mexico create opportunities for building up MPA programs to address changes in governance. Likewise, the Argentinian legislature established Autonomous Audit Agencies as a strategy against the misuse of public finances, but evidence suggests limitations in their performance due a lack of administrative and technical capacity (Santiso, 2008). Both countries show a promise for a growing role for professional bureaucracy. First, the evidence of national actions expressed above demonstrates an expanding role for the citizen in democracy. Second, evidence also shows that attention to the need for ongoing MPA education and training is essential.

Service-learning is the tested strategy based on its ability to introduce students to real issues in the community and it provides an opportunity to

organize training in areas of deficiency. The strategies of service-learning need to focus on the public policy challenges associated with a limited professional bureaucracy, turnover, and limited oversight. Our contribution in using service-learning in Argentina and Mexico is two-fold. First, the activity allows us to engage students and officials on pressing public policy challenges. Training and sustaining a professional bureaucracy are a necessary component of a strong democracy. Second, the service-learning outcomes and post course evaluation for our Argentine and Mexican experience allows us to examine the application of certain teaching methods relative to the context in these two countries.

United States Governance

In contrast, the democratic condition in the United States emerged through a different lens. The colonizers of North America also came with the blessing of a European crown, but these individuals were also seeking religious freedom. The English set up their colonies to function as their own place with the crown overseeing, not necessarily as a funding source for the crown. Following the colonization period until the late 19th century, Keller (2007) describes the early evolution of public affairs from the conflict of factions, no one single group in control, to the rule of factions, where government control was dominated by parties and party control. The spoils and patronage that emerged during this period gave rise to progressive reforms in government.

Progressive reformers focused on gaining control of machine boss politics running the cities and establish an administration based on sound management principles. The idea was one best way for the delivery of public goods and services. Based on Weber's theory of bureaucracy, hierarchy was the idealized apparatus to ensure centralized control of decision making, separation of politics from administration, and expertise to support a rational model for achieving organizational efficiency.

A progressive strategy for the civil service merit system was a method protecting against the effects of political coercion on civil servants (Rosenbloom, 1983). Further, the approach of establishing non-partisan city managers was an important mechanism addressing large-scale corruption in cities brought on by political party coercion and the large political machines. This solution attempted to remove partisan politics from local governmental administration. The Municipal reform movement established the professional management of

community affairs that raised the vision of the community over the demands of special interests. The National Municipal League, developed in 1894, worked to advance the tenets of good city government through the council-manager form of government recommending the official city management profession (Keller, 2007).

Public policy challenges for a professional public administration in the United States tends to relate more directly with the relationships between governments and its partners rather than its institutional infrastructure as discussed in the Latin American condition. By the 1960s and 70s the theoretical underpinnings of the U.S. ideology of a centralized public administration evolved into characteristics of federalism and devolution of policy to subnational governments and nongovernmental providers (Goodsell, 1992; O'Leary, 2015). Hall and O'Toole (2000) provide evidence that the national government has operated under mandated governance or networked arrangements for some time. Similarly, Kettle (2015) argues that the federal government is not downsizing, but rather it just continues to outsource to the private sector and lower levels of government. A theory of collaborative governance suggests government may rely on certain players and stakeholders given the problem or issues (Ansell & Gash, 2008). In this context, the policy issues help identify the necessary actors and stakeholders relevant to the process.

Methods

The purpose of this research was to explore service-learning experiences in different country contexts and inform on concepts, constructs, and strategies for adult learning. The case studies presented in this research, because of their capacity to expose students of public administration to experiential learning environments, provided different practical assumptions for professional public administration. Data from the Argentine and Mexican case study was collected over three academic semesters from Fall 2015-Fall 2016 in partnership with the University of North Texas (UNT) Department of Public Administration, the Universidad Nacional de La Plata, Argentina, and the Universidad Autónoma del Estado de México (UAEM). Data from the U.S. case study was collected through a City Planning Theory and Practice Course held in Spring 2016 at the University of North Texas.

We used a modified grounded theory, which provided a foundation for understanding important themes that emerged throughout all the service-learning experiences compared in this research. Interviews with government professionals in Argentina, Mexico, and the United States, meeting notes from both service-learning contexts, and field observations and field journal entries of the 15 Argentine and Mexican students and faculty members and 35 U.S. students served as first-hand knowledge for the international and U.S. case studies. This information or raw data was then analyzed by the authors independently to assure interrater reliability (Gwet, 2014) and were separated into three categories: skills acquired, pedagogical [Andragogical] tool, and social transformation. The definitions of these three areas, as found below, helped to create Table (2). Additionally, the survey questions collected qualitative student and faculty accounts of their perceptions of the experience visiting another country, achievement of learning outcomes, identification of policy recommendations relative to the project of study, recognition of cross-sectoral professional relationships, and best practices important to municipal land fill development and operations.

The process to identify themes and research documents was through a modified grounded theory approach, which was triangulated against the governance literature. We used a model first presented by Bushouse and Morrison (2001) to examine knowledge transfer as represented by the three characteristics noted above: skills acquired, pedagogical [Andragogical] tool, and social transformation. In essence, Bushouse and Morrison conclude that student-learning is enhanced by active participation in the learning process through gained experience such as competencies, a concrete service-learning project, and student reflections which provide students the opportunities to create linkages. Identified themes provided understanding on whether the service-learning experiences supported adult learning and the extent these experiences lead to key lessons learned and theoretical insights in informing a Theory of Andragogy. Our work below highlights these three areas. Because these case studies were part of college courses, no IRB approval was necessary. Nevertheless, appropriate IRB standard procedures were followed. All students were over 18 and considered adults, no student was forced to participate, no student received any benefit nor was there any foreseeable harm in participation, and no student names or identifiable characteristics were used.

In essence, standard service-learning course evaluation materials were accessed for these case studies.

Skills Acquired

Service-learning has high potential for the acquisition of new skills. Though Butin (2010) finds service-learning unpredictable, service-learning is typically done with the instructor's consent for a specific classroom purpose. Faculty oversight provides a method for taking theory learned in the classroom and turning it into practical skills. Service-learning requires students to learn by participating on a specific project thus limiting the range of skills that a student could acquire from a project. For instance, an intern's job responsibilities might cover a large array of projects, without focusing on any one project. This opportunity creates the possibility for a greater breadth of skill acquisition due to the less focused nature of an internship. However, by comparison, internships are less likely to make big connections from theory to practice due to the scope of position responsibilities (Benavides et. al, 2013). Service-learning projects, on the other hand, provide an opportunity for greater depth and an increased opportunity to connect theory to practice. Through faculty guidance, students are exposed to how theories in books are transformed into practice. Some of these teaching moments are obvious while others a little more indirect.

Pedagogical/Andragogical Tool

As an Andragogical tool, service-learning has an important benefit due to the instructor's ability to guide the project and to pick and choose from different projects to meet the learning needs of adult students and the course objectives. Service-learning creates experiential learning opportunities with proximity of oversight by the instructor relative to the actual work being conducted. Instructors can lead and steer student involvement in the project. Overall, service-learning allows students out of the typical lecture classroom model of learning to a more one-on-one coaching style which is more appropriate to adult learners. In the case studies below, participants worked for cities, the US Environmental Protection Agency, private labs, and engineering firms. Students had a desire to apply the service-learning experience to their current professional positions which motivated them to better understand the course materials. These guided experiential learning experiences modeled the discussion, practice, and teaching others instructional methods exemplified by Mujataba and Preziosi (2006) in Table (1). Therefore, learning retention is much

higher when the self-interest of the student and the experiential experience through service-learning are the combined goal.

Social Transformation

Since its inception, service-learning has been heralded as a means of providing social change in the lives of students and making an impact on the community. The opportunities for social change are prevalent in service-learning projects. For instance, with service-learning, faculty are encouraged to make community connections and fill needed services through projects. Service-learning provides opportunities for students to serve in a guided fashion, to fill community needs, engage students firsthand in the needs of communities, and understand complex interconnected problems and cultural differences.

Therefore, using this framework, we present our findings as we compare and contrast Argentina, Mexico, and United States service-learning student experiences. Additionally, this framework illustrates the knowledge transfer that occurs during this process.

Findings

The findings of this research do not claim causality but rather inform on the importance of different adult learning strategies in service-learning experiences relative to different country contexts. Our findings illustrate how various teaching and learning methodologies can create important connections between course material and real-world experiences. International cases are used to illustrate globally sensitive methodologies exposing students to complex interconnected problems. The cultural differences exemplified through international cases serve as powerful tools for shaping moral and ethical change. Our review of multiple sources of qualitative information provides evidence to support the three aspects of the Bushouse and Morrison (2001) model. The findings are separated in two sections. The first section highlights the Argentina and Mexican experience and divides the findings in skills acquired, Andragogical tools, and social transformation. The findings shed light on the Theory of Andragogy.

Argentina and Mexico: Interdisciplinary Administration and Environmental Policy

The University of North Texas (UNT) Department of Public Administration, the Universidad Nacional de La Plata, Argentina, and the Universidad Autónoma del Estado de México (UAEM) collaborated on an interdisciplinary service-learning initiative, “Bridging the Americas: Promoting Global Solutions for Local Landfill Problems through Student Service and Learning,” funded by Partnerships of the Americas Innovation Fund. The underlying goal of the awarding grant program was to create “a globally aware and culturally competent workforce through unique international study abroad opportunities” (100,000 Strong in the Americas, n.d.).

Skills Acquired

This service-learning initiative introduced students and faculty, representing the Americas, to the interdisciplinary context of municipal landfill development and operations. With regards to skill development as shown in Table (2), service-learning objectives included both the study of the roles and relationships between professional public administration, and technical and scientific expertise, and the examination of public policy surrounding waste reduction and environmental contamination.

Each university independently studied one or more elements of landfill operations in both their respective and partner countries and their effect on the environment, from the perspective of their professional academic area of expertise (Mexico: chemistry/engineering, U.S.: public administration, Argentina: engineering). In the first service-learning exchange, participants from the Argentina and Mexico travelled to Denton, Texas, in the United States. Students and faculty participated in workshops on the basics of U.S. government, the complexities of intergovernmental relations, and the application of geographic information systems in watershed management and pollution tracking. The experience highlighted the relationships between professional public administration and the scientific community in municipal landfill planning and operations. Participants also toured a zero-energy lab, and multiple municipal facilities including the City of Denton and Dallas landfills, recycling facilities, and water and wastewater treatment plants. Students and faculty examined and assessed operations for landfill recycling, composting, methane to energy conversion, and renewable fuels. For the second exchange,

students and faculty visited the City of Toluca, Mexico touring three landfills and participating in scientific workshops. The UAEM conference workshops covered issues of water quality, groundwater pollution, and landfill management. The hosts of UAEM also provided a chemistry lab with lectures on research and chemical processes, toxins, and health outcomes. Participants observed experiments in real time where they tested the properties of the landfill runoff collected during site visits.

Theme	Argentina and Mexico	United States
Skills Acquired	<ul style="list-style-type: none"> • Awareness of need for professional public administration • Connection between public administration and technical/scientific expertise • Consideration for sustainable public policy 	<ul style="list-style-type: none"> • Participation in field observation data collection • Development of interactive and visual public engagement tools • Advancement of policy recommendations
Andragogical	<ul style="list-style-type: none"> • Platform for studying role of professional public administration, collaborative management, and cultural differences 	<ul style="list-style-type: none"> • Platform for learning networked governance with direct interaction with government staff, community leadership, and residential and commercial areas of city
Social Transformation	<ul style="list-style-type: none"> • Report of student findings to local governments in Argentina and Mexico • Presentation of policy recommendations at International Conference on Sustainability (2016) • Agreement for ongoing collaboration between universities 	<ul style="list-style-type: none"> • Representation of students in official city project with community outcomes • Report by students to selected members of government staff in formal setting • Advancement of recommendations to support ongoing city planning efforts

TABLE (2): IDENTIFIED THEMES OF ADULT LEARNING: INTERNATIONAL SERVICE-LEARNING CONTEXTS

The final service-learning exchange to Argentina focused on public policy making relative to landfill location and operations and included presentations on the basics of landfill management from the Mexican representatives, on ground water contamination in landfills from Argentinian representatives, and public administration ethics by a U.S. faculty member to the Universidad Nacional de La Plata graduate engineering students. Finally, participants exchanged ideas and project findings at an international conference on climate change and sustainable development.

Andragogy

With regards to Andragogy (see Table 2), professors guided the collaborative and international service-learning experiences with their subject-matter expertise, and they directed student learning on the connections between theory and practice. The focus on municipal landfills in each participating country as a teaching platform connected students with issues surrounding complex public policy making, regulations, and interdisciplinary networked arrangements of governance. Guidance was integral from each professor to help students understand the different points of view of each discipline. Professors also led discussions on possible policy solutions to the landfill management challenges students identified, introducing accountability, ethics, and economics into group discussions. They also helped students identify and understand social and cultural differences observed between different groups of stakeholders, as well as the different countries. Understanding the larger issues of technical/scientific and public administration proficiency in the nuanced context of local social, cultural, and political practices allowed students to identify service opportunities.

In a post course evaluation survey, most students reported their exposure to the political, social, and cultural practices of the countries they visited, many having never visited any of the participating countries, as the most beneficial aspect of their participation. The survey results also highlighted three important learning outcomes including the importance of cross-sector relationships related to technical and scientific expertise, public administration leadership, and consideration of political implications for complex public policy projects. Relative to building technical expertise, students evaluated the differences in landfill design, management, and subsequent environmental consequences. Moreover, they analyzed the fundamental chemistry of typical polluted landfill water engaging in leachate sampling and testing exercises.

With regards to understanding the relevance of government administration, students learned the complexities of U.S. municipal landfill regulation. They examined the responsibilities for meeting the often-overlapping requirements of local, state, and federal regulators, as well as those of regional planning authorities and local stakeholders. As an example, the City of Denton, Texas landfill has a Regulatory Compliance Manager, solely focused on regulatory compliance and the associated reporting. Student post evaluation

survey responses identified the fields most important to landfill development to be technical/scientific, public administration, and citizen engagement.

Students were also able to engage politicians receiving exposure to the different political, social, and cultural practices of each country. Students communicated directly with stakeholders like politicians, dialoging with a variety of municipal mayors, as well as state and federal government representatives. The primary challenges observed by Argentine and Mexican students through the post course survey highlighted that politician's most often administered the operation of municipal landfills per the agenda of the political party in power with little to no scientific expertise or regulatory oversight. Students described political turnover as frequent and indicated that there was limited emphasis on long-term planning for this important public service, resulting in increased pollution into their ground and surface water from unlined landfills.

The post course evaluation survey responses also identified the most important needs in large scale municipal landfill policy making to be qualified landfill administrators/technicians, long-term planning for landfill operations, education for and engagement of the populace (especially while they are young), and education for politicians from all political parties and current administrators. Survey response themes suggested that UAEM could tie basic scientific information on landfill best practices and the environmental consequences of poor management to current administrators and local politicians. Additional future opportunities include outreach to local industries with low-cost solutions to reduce environmental pollution, identified by UAEM current research and creation of a clean industry certification.

Social Transformation

The outcomes of the service exchanges between the Americas supported overall social transformation (see Table 2). Participants from Argentina, Mexico, and the U.S., were successful in learning the challenges and opportunities of municipal landfills in the Americas. Participants reported findings to public decision makers through three venues. First, the water reporting analysis and findings performed with the students at UAEM was included in a final report to local officials. Second, students and professors presented their research findings of each university's service-learning experience and learning outcomes at the 5th International Conference on Climate Change and Sustainable Development

organized by UNLP in La Plata, Buenos Aires, Argentina. Finally, participants scheduled meetings with both the U.S. Embassy in Argentina and the Ministry of the Interior of Argentina to discuss continued opportunities for ongoing collaboration with the Americas on service-learning and public official training. At the U.S. Embassy, students and professors met with the Consulate of Cultural Affairs to discuss the progress of this educational project and the possibility of providing public administration training to local government administrators, and request support of continued collaboration between the three universities (i.e., approval of travel visas). At the Casa Rosada, the “White House” of Argentina, students and professors met with the Secretary of the Ministry of the Interior and the Sub-secretary of Local Governments to explore the possibility of providing public administration training to local government administrators and receiving the country’s support in future grant opportunities.

Historically local government administrators’ education has been underserved in the Americas. The three-international service-learning exchanges supported an examination and comparison of municipal policy making in both the Latin American and U.S. contexts. Participants from all three schools were eager to continue their collaboration to support best practices at the local government level in professional public administration capacity building, training, and interdisciplinary problem-solving to reduce environmental pollution. Student feedback from the course evaluation also informed future international service-learning course objectives and outcomes.

United States: City Planning

The city planning service-learning opportunity between the Department of Public Administration at the University of North Texas and the City of Denton, Texas provided a platform for students to bridge planning theory with practice through the development of a portion of their Master Plan. The City of Denton provided neighborhood character area plans for two communities, one north Denton and the other in south Denton, near the downtown district. These two neighborhood areas plans were previously identified as recommendations from the City’s officially adopted Comprehensive Plan. The students participating in the service-learning project were enrolled in a Master of Public Administration course, on Planning. The class content covered areas such as regional and local government planning, planning theory and process, managing planning, implementing plans, and citizen participation. Students learned the content of

the course by attending class lectures, reading, and adhering to the usual pedagogical or traditional methods. However, the following case examines the service-learning outcomes in the context of skills acquired, using Andragogical tools, and social transformation informing our assumptions of the Theory of Andragogy.

After the initial visit from city officials to the class and the associated presentation, the class was divided into two distinct groups, Denton North, and Denton South. Each group was subdivided into three issue areas of citizen engagement, infrastructure, and land use. Two student representatives served as the lead contact for the city to receive direction and disseminate objectives to each of the subgroups. Student work objectives included the execution and development of the existing condition area surveys, a needs assessment, issue area literature reviews, visual preference surveys on land use and infrastructure, recommendations based on research, and a final report to the city via an official presentation to the Downtown Development Task Force.

Skills Acquired

Each project objective supported students in new skill attainment (see Table 2). First, student data collection efforts in the execution of the existing conditions site survey work element required students to capture information for each building (residential and commercial) in the neighborhood study area. Students simultaneously made notes about the conditions of the area in terms of accessibility (road condition, sidewalk condition, acceptable access for children or elderly). Second, the literature reviews objective exposed students to the latest literature on historical neighborhoods, walkability, citizen engagement, zoning, and infrastructure. Student findings informed policy and project recommendation development. Third, the task components of the visual preference survey objective allowed for student enrichment through various data collection efforts. The student experience came from walking the neighborhoods informing their slide development. Students created visual power point slides juxtaposing current conditions with potential options for future development. For instance, visual preference slides presented options for sidewalk and lighting preferences to enhance the existing pedestrian environment. Finally, the student recommendations to the city represented the culmination of all student activities including walking, observations, and literature reviews. Student policy and project recommendations provided in

depth consideration of zoning policy revisions, potential funding sources, and new ideas on enhancing the city's approach to the citizenry.

Andragogy

As an andragogical tool (see Table 2) these cities planning service-learning projects allowed for instructor led guidance to ensure the experience with the city projects achieved the course learning outcomes for learning critical aspects of networked governance. The task plan and objectives for the students were orally presented to the faculty and students during one of the regularly scheduled classes and critical input was given to each group. Due to time constraints, the city was not able to provide an opportunity for the students to interact and engage with citizens of Denton, an objective of the original city plan. City of Denton staff, the course instructor, and the two student leaders met to modify the original plan. The city defined their objective to use student research as the preliminary element supporting the city's full character area plan development for both neighborhoods. The students created and analyzed the results of the site surveys and needs assessments. Additionally, students achieved course learning outcomes by understanding networked governance. Using the knowledge gained in class to experience working and problem-solving with city staff, students developed interactive engagement tools for the public, and surveyed residential and commercial areas of the community. Students presented the final report to selected members of Denton city government. The City of Denton accepted the student research as phase 1 of the character area planning process for both locations.

Social Transformation

Relative to the Andrological element of social transformation (see Table 2), an interesting notion about service-learning projects is that they are real work for real organizations and this awareness creates in the students a desire to perform well. The students and faculty member's reputation, and the University that sponsors them all come into play as everyone works together to present a project worthy of presentation. With regards to the student's impact on City of Denton planning initiatives, the students presented a formal final report to city management staff. The final reporting included research, data, financial evaluations, and recommendations to guide future city decision making.

The unique characteristics of service-learning helps provide a learning environment in which the students take on the responsibility of learning and do something with the topic of the course. Their own life experiences, learned through the stages of life, come together to produce a product that is beneficial to the students and the community – a completed project formally presented to the government entity.

Discussion

The purpose of the comparison between the Argentine and Mexican service-learning project and the U.S. service-learning project was to show that teaching methods are different and should be deliberated. As shown in both examples, service-learning as an Andragogical tool can benefit student learning by providing hands-on experience to complex issues and public policy problems. As shown in Table (3) below, our comparison between the Argentina, Mexico, and U.S. public policy contexts and acknowledged themes (Table 2) surfaced five lessons learned with emphasis on practice assumptions, service-learning outcomes, teaching methods, and contributions to the Theory of Andragogy. The lessons learned presented in Table (3) show us the various components in both contexts relative to various points of emphasis.

Examining Table (3), the reader can note under the “Point of Emphasis” assumptions that Argentina and Mexico are relatively young in their establishment of a public-sector system focusing on basic public management sector issues. On the contrary, the U.S. governance structure supports an educational focus on network arrangements and relationship management. It explains at the core that there is a value in the basic training that is still needed in Argentina and Mexico. In the U.S. context, for instance, there are mature public administration professional associations that help take care of the training and basic needs of ongoing administrative education beyond a public professional’s educational credentials.

With regards to service-learning, we found an equalization between students and what service-learning is in both contexts. However, in the U.S. context, the service-learning did not incorporate the scientific and technical aspects of administrative decision making whereas in Argentina and Mexico it was a critical aspect. Further, in these two countries, there was a demonstrated want for the development of continued leadership capacity. Examining students

in both contexts, it appeared that the Argentine and Mexican students gained a greater appreciation for the class than did the U.S. students demonstrated by their interest in the outcome of capacity building and public administration leadership. The unique participation of some U.S. students and faculty in the Argentine and Mexican service-learning experience, helped elevate the understanding among Latin American students of the public administration leadership that exists in the U.S., and its potential applicability in their own country. In other words, students from Argentina and Mexico internalized the differences in professionalization of public administration between U.S. and the Argentine and Mexican contexts. However, for U.S. student's, professionalization beyond the formal university degree appears to have been socialized in their context through seminars, conferences, professional development, and continuing education credits beyond their degree. This does not mean, nor do we imply that U.S. students benefited less from the service-learning projects than did their Argentine and Mexican counterparts. On the contrary, the learning was there but just different.

Points of Emphasis	Argentina and Mexico Context	U.S. Context
Practice Assumptions	Emphasis on: <ul style="list-style-type: none"> • Professional public administration • Public Sector Training • Recruitment and capacity building • Retention of public sector • Accountability 	Emphasis on: <ul style="list-style-type: none"> • Networked governance • Relationship management • Stakeholder identification • Service Facilitation • Policy issue management
Service-learning Findings	Emphasis on: <ul style="list-style-type: none"> • Inclusion of qualified technical and scientific expertise in interdisciplinary policy making • Capacity building in public administration leadership • Consideration of regulations, management, and political implications • Development of future leadership capacity 	Emphasis on: <ul style="list-style-type: none"> • Role of cross-sector policy relationships • Responsibility and function of multiple public officials • Impact of policy on citizens and stakeholders

Service-learning Teaching Methods	Emphasis on: <ul style="list-style-type: none"> • Use of best practices case study learning • Selection of municipal landfills for study in each country • Student and faculty participation in technical and scientific workshops, experiments, and applied learning tours • Student and faculty participation in data collection at landfills • Idea exchange through the community of practice participating in grants • Dissemination of ideas to public dignitaries • Student feedback through post-course evaluations 	Emphasis on: <ul style="list-style-type: none"> • Organization of students into groups based on policy issue areas • Identification relationships between cross sector policy issue areas • Appointment of team leaders • Collection of data • Interpretation of findings • Development of policy and project recommendations • Presentation of results to government officials • Student feedback through post-course evaluations
Theory of Andragogy	Emphasis on: <ul style="list-style-type: none"> • Connecting students across technical and scientific expertise to experience public policy issue arenas through a temporary system filling the gap of a public administration system that did not previously exist 	Emphasis on: <ul style="list-style-type: none"> • Exposing students to the actual function of a policy making, programs, and relationships through networked arrangements

TABLE (3): COMPARISON OF LESSONS LEARNED IN SERVICE-LEARNING BETWEEN ARGENTINA, MEXICO, AND THE U.S. CONTEXTS

Examination of the teaching methods between contexts shows that the U.S. service-learning model is methodical in its approach. The Argentine and Mexican experience integrated learning styles across scientific, technical, and administrative professions. Rather than following a specific step by step approach to problem-solving as shown in the U.S. experience, the Argentine and Mexican exchange gradually evolved as students experienced workshops, scientific experiences, and tours and conversed on the findings. The U.S. can stand to learn from these countries experience through the idea of an open exchange of dialogue versus a rote approach. Service-learning in the U.S. is enhanced by shadowing experiences, internships, and on the job training and other andragogical techniques because the U.S. has a developed system of public administration. The Argentine and Mexican experience functioned as a field course and experiential learning experience. The teaching methods in these countries experience did not necessarily increase the capacity of public service but exposed students to a simulated public policy making space.

The Argentine and Mexican experience connected the students with an opportunity to look at a policy arena—landfill sustainability—and connect operations and development to bureaucracy and the government. In Mexico, students used scientific testing of leachate pollution and then presented their findings with public officials. Similarly, students in Argentina highlighted important ground water pollution issues and presented it at the highest level of government. Lacking a formal public administration system, through service-learning, we simulated a policy making process around a public issue and communicated findings to the highest levels of government. Were it not for the service-learning course it would not have happened. The value of the service-learning is that you can create a temporary platform to simulate administration and engage multiple stakeholders on a policy issue and show the importance of professional public administration.

The U.S. experience exposed students in more detail to the actual function of a public service or program. Students did hands-on work and participated in the functions of government. For instance, they experienced the networked relationships between citizens, businesses, stakeholders, and their government in the city planning process. All students gave presentations to government management of all project findings. Contrary to the Argentine and Mexican experience, U.S. students focused attention on experiencing relationships rather than the nuts and bolts of government structure.

Conclusion

Public policy challenges do differ in the Argentine, Mexican and U.S. contexts. The implications of this research for those that teach public administration in these countries are meaningful. The variations in practice assumptions resulted in different learning outcomes and different teaching methods. Students in the Argentine and Mexican context experienced a new model of international cooperation and problem-solving. Without a formal public administration system to navigate, students and faculty integrated scientific and technical expertise. The international exchange supported the development of future professionals to propose innovative solutions. Here, service-learning, as an Andragogical tool, was the method to ultimately train the human capital necessary to support public service leadership. These findings should be considered When using service-learning in Argentina, Mexico, or the U.S. In the U.S. context, students operated in an established government

structure, but experienced the process of developing and participating in governance solutions to local community issues. The public policy challenges differed, but the U.S. service-learning outcomes may inform and help our Argentine and Mexican neighbors. The findings from our analysis may serve to advise our colleagues on their quest for professional public administration showing the potential to broaden educational focuses to the governance system once the core structure is in place.

Service-learning is when a provider and recipient of service benefit equally by focusing the same amount of energy on either providing an opportunity for service or learning from the service being provided (Kiltz, 2010). Relative to informing Andragogy, we found that the service-learning experience supported knowledge transfer from the instructor and experience to the student and that a connection or impact to the community occurred.

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