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THE EMERGENCE OF PUBLIC ADMINISTRATION AS A TOOL FOR PUBLIC MANAGEMENT

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Abstract: A synoptic overview of public administration as a developed profession, a brief history of the evolution of management thought, coupled with seminal academic contributions that integrate theory with practice, and a discussion and justification for the development of essential technical, human and conceptual skills required for successful management in contemporary society.

Keywords: Public Administration origins, theory and practice conceptual skills, technical skill, human skill, professionalization, and sustainability.

Recommended for Undergraduate and Graduate Courses: Introduction to Public Administration/Management; Case study Analysis; and, Organizations Theory and Behavior

Introduction

The pursuit of knowledge and skill in the field of public administration is a noble endeavor, yet one that should not be undertaken lightly. Public Administrators, as public servants, are entrusted with immeasurable power, and charged with providing the services that lawmakers mandate each local, state, or federal government provide on behalf of the general population. These services, designed for contemporary society, are often rendered through the creation, implementation, or maintenance of public policies that are imposed upon absolutely everyone, and ultimately have enormous impact on most areas of all lives. It is because of the far-reaching effects of the creation and implementation of these policies that it is imperative that the aspirational Public Administrator have a strong foundational knowledge of the field, and be diligent in pursuit of understanding how policy creation or implementation can impact change and alter the course of life for the general public.

The origins of public administration as an educational and professional endeavor are deeply rooted in state, and urban or municipal government. American Public Administration specifically, is grounded in “electoral democracy”, and as a field it is charged with obtaining results, while being accountable and responsible (Ma

& Hou, 2009). Consequently, both education and practice must then encourage and demand that practitioners, while seeking to create impact and affect change, be both accountable and responsible. It is to this end, the development of a strong foundational knowledge and understanding of the field, that the included information and case studies have been designed. Through the use of real-life case studies, future public administrators will be given opportunities to learn, practice, and fine-tune their skills, specifically in areas of technical, human, and conceptual skill development, so as to ensure the most capable wielding of the power entrusted to them.

Management is Like Methuselah--Old

The idea of public administration, as it is known in contemporary terms, has a long history. The origins of public administration in this sense can be traced to Near Eastern Culture such as Hammurabi in Babylon with a code of 282 laws (Harper, 1904, cited in Wren, 1979)). The ancient Chinese established a bureaucracy to administer as early as 1000 B.C. (Wren, 1979). General Sun Tzu in his classic treatise, advocated extensive discussion and sound plans before going into battle: “Thus do many calculations [plans] lead to victory, and few calculation to defeat.” (Wren, 1979). And, in many of the earliest dynasties of Korea, there were national civil service tests administered that were essential to gaining positions in either the military or government. The first national examinations were administered in the Kingdom of Silla in 788. Later on, other dynasties administered competitive examinations in the areas of administration, the military, literacy and miscellaneous areas, such as medicine, geography, translation, and astronomy for advancement positions in society (<https://www.newworldencyclopedia.org/entry/Gwageo>, July 17, 2019)

The Egyptians also understood the principles of management, such as, unity of command, span of management, division of labor, and basic—albeit authoritarian principles of leadership—as shown in extant documents and excavations (Wren, 1979). Egypt too created a bureaucracy to administer public works as irrigation canals and other public structures are known today (Wren, 1979). The Biblical Hebrews and Greece also had governmental structures to manage public affairs. For example, in Hebrew thought the **vizier** was given temporal matters and to the pharaoh the spiritual powers were reserved to himself (Wren, 1979). These are but a few of earliest principles of management recorded in history: Delegation of authority, forecasting, planning, and as Wren notes, the establishment of a professional “...full-time administrator to control and coordinate the state enterprise” (Wren, 1979).

Ali Farazmand has informed us about administration and management principles beginning as early as 6000 B.C. in his discussion of the Elanites and the Achaeminid Empire (more recent, 59-330 B.C); they are both instructive in the areas of state building and administration. To recap his exhaustive inventory of practices, concepts and principles of management that were precursors to modern management goes well beyond the central thesis of this paper. However, a

summation of these practices is shown in the following list: taxation policy (revenue generation), civil service hiring through merit (career) and patronage appointments, long-range strategic planning, emergency management, professionalization of the bureaucracy (rules provided by a “Guild System”), and capital and developmental investment techniques (Farazmand, 2003)

The early Persian cultural orientation built a dominant, middle-class, Persian bureaucracy, whose power was checked to ensure equity and efficiency and truth telling. The telling of a lie was a crime subject to punishment and it was more disgraceful than owing indebtedness—one was prone to tell lies if one owed money. The issues of management and administration that were found in antiquity remain today modern administration: The concepts of centralization vs. decentralization (federalism and intergovernmental relations); tax policy, the role of quasi-governmental institutions, the rise and control of bureaucracies and the abuse of power. In addition, time management, anti-waste and corruption policies, infrastructure development and maintenance issues (roads, irrigation systems, water management, natural resources management, harbors, postal services, waterways), self-government and partnership-based arrangements (collaborative government), contracting-out, bringing women into management, and a host of other concerns were on the Persian agenda 2500 years ago (Farazmand, 2003).

On a broader contextual basis, many of the management concepts in use today evolved from ancient civilizations—Western, Eastern and African. Although they have evolved to new levels today, in a primitive sense, they formed the basis for organization (hierarchy of authority, division of labor (370 B.C.), scalar chain, span of control, assurance quality control (City of Ur in Samaria (modern day Iraq), identified leadership traits and skills (innate vs. learned), controlling (accountability, evaluation, quality control), accounting principles (doubled-entry bookkeeping), etc. Indeed, perhaps the oldest profession is that of management! The roots of administration from these sources can be traced from the Puritans in New England to later developments after the adoption of the Constitution.

The need for administration, even in ancient societies, resulted from complexities of people living together in communities. Institutions such as churches added to the growth of administration as they created hierarchies intended to bring order to the activities they guided. Tribal societies also had forms of administration with roles for members such as chief and lower ranking roles. Ancient Asian and South Asian societies also matured to levels requiring laws, administration of same, and individuals who would administer them. As complexities of societies grew generated in large part by increasing populations, leaders needed “wisdom”, intelligence, and some form of administration skill. Persons filling administrators must be primarily born with these characteristics since there was limited education about administration as it is known today. While some schooling was known in the ancient world, the primary subject matter would have been philosophy as seen in the Greek approach.

A Brief History of Public Administration

The birth and development of the field of public administration in the United States, results largely from the Reform Movement's efforts to create accountability and efficiency. As early as 1885, the expansion of public services led to a call for efficiency (Ma & Hou, 2009). This call resulted in the National Municipal League's campaign, under the leadership of Edward S. Childs, to enact a model Municipal Charter for the purposes of generating greater accountability for municipal governments. The National Municipal League and the Thirteen-Thirteen (1313) Group were predominant leaders in the reform movement overall, and as such, subsequently advanced the field of Public Administration through their leadership. Additionally, throughout this campaign the New York City Bureau of Municipal Research also played a prominent role, specifically in advancing budget reform for greater accountability beginning in the early part of the 20th Century (Ma & Hou, 2009).

Professionalization of public administration, begins with education. It is through education that a body of knowledge and its ideas are, in the words of Sager, et al, transferred (Sager, et al., 2018). Beyond the call for education in public administration by Woodrow Wilson, the delivery of formal course work in the field can be found in work of Leonard D. White who is credited by Wren (Wren, 1979) with delivering the first classroom course in public administration and would later teach public personnel coursework focused on government offices. In his article "Paradigm Lost: Public Administration at Johns Hopkins University, 1884-1896", Curtis M. Hoffman shows how Herbert Baxter Adams, James Bryce, Richard Ely, Albert Shaw, and Woodrow Wilson "participated" in the early attempts at creating an entire curriculum in public administration (Hoffman, 2002). These early attempts to educate public servants owe some credit to the antecedents of the ancient world. Further, the movement to generate education with a body of knowledge to be taught by faculty is the beginning of one stage of the professionalization of public administration.

Other strong initial influences in the field of public administration include Charles Merriam and Louis Brownlow, both committed democrats, who were instrumental in professionalizing public administration through the Thirteen-Thirteen (1313) Group experience. According to Barry D. Karl, both Merriam and Brownlow were "crucial bridge figures in the formation of public policy in the United States transitioning from the chaos of amateur judgments they knew in the 19th century regionalist conglomeration of multiple governments to the highly professionalized, highly nationalized systems we know today." (Barry, 1975). Merriam's book "A More Intimate View of Urban Politics" is a prime example of what both of these reformers strove to create in the newly developing field despite

the fact that the issues faced by the reformers were no less daunting than those faced by contemporary Public Administration and local government today.

Ultimately, all of these individuals or entities were instrumental in creating educational and practical improvements for local, particularly municipal, government, with one of the most influential and lasting changes made to the field (in its entirety) being to associate education and practice. To this day, education remains connected to practice in the field of Public Administration, and this linkage between the two must continue indefinitely, especially given the number of state and local government employees in the United States.

According to the Rockefeller Institute of Government, there were 22 million government jobs in 2009 (Boyd, 2009). Most of those government jobs exist at the state and local level, and the largest majority of them are concentrated in education (McDonnell & [Salisbury](#), 2005). The education sector is followed (in terms of numbers of employees) by the service and health sectors, the criminal justice department, the transportation sector, the parks and recreation department, the housing sector, the community development sector, the electric and gas utilities, and finally by general administration jobs (Boyd, 2009). With the vast number of these jobs impacting governance at the state and local levels, it is imperative that the issues faced by state and local government administrators, many of which will be detailed here, be addressed through the portal of efficient and accountable public management borne of a combination of education and practice, and that this linkage be sustained.

The Professionalization of Public Management

The development of competencies, via both education and practice, in managing complex government organizations, whether they be local, state, or special governments, requires growth through professionalization beginning with education. A profession must have a discrete body of knowledge according to Barker (2010). He also writes that professional education allows a student “to master” a body of knowledge delivered by educators plus provide formal assessment. (Barker, 2010).

Woodrow Wilson had in mind professionalization of the field of Public Administration when he published his seminal article in 1887, however, once education was coupled with practice, public management quickly became an educational endeavor with a practitioner focus, or a dually founded/focused field.

Within this modified (or dually founded/focused) field of study, Frederick Winslow Taylor may be the best known of the early public management advocates, due in part to his time and motions studies emphasizing efficiency economy, and productivity (Holtzer & Zhang, 2009). These studies were early innovations, yet despite modifications, advancements, refinements, and adaptations implemented from other disciplines, it is clear that the field of public management still has not been fully realized in the past 120 years. This sentiment is echoed by Kate Jenkins,

who reports there is still too little management competence in public service (Jenkins, 2008). Jenkins report takes on added significance, when one recognizes that in the United States the majority of the control of policy and policy implementation is through the purview of state and local governments. Jenkins viewpoint is also supported by Caiden and Sundaram, who write that there is a “universal recognition of the decline of public services and the need for reforms” (Caiden & Sundaram, 2004).

Toward this end, according to Tolofari, (Tolofari, 2003) governments around the world became involved and continue to engage in reform, recognizing as a driving force economic stagnation. Tolofari states that during this same time “education was also reformed”, thus requiring that the lessons from this period endure and continue to be updated and continually relearned, with research consistently made available to augment these lessons as the economic circumstances of the present era are equally, if not more pressing. Public administrators must similarly be informed of and skilled in addressing such issues as community sustainability, citizen satisfaction, and the organization and delivery of public services.

Technical, Human and Conceptual Skill Building

In part, to develop as a leader in the field, one must consider all a leader or aspirational public administrator must come to know. Taking into account the established link between education and practice, as illustrated above, skill development could also be divided into three areas of emphasis – that of technical skill, human skill, and conceptual skill. The use of case studies as experiential learning opportunities will allow for the practice portion of skill development in each of these areas.

Technical skill

Technical skill is likely the most readily recognizable and concretely developable skill, as most professions require a level of technical skill in one or more areas as a condition of basic employment. Technical skills typically involve working with “things” or processes, and tend to describe or imply “an understanding of, and proficiency in, a specific kind of activity, particularly one involving methods, processes, procedures, or techniques” (Katz, 1974). The development of technical skill infers that future public administrators will have or develop a specialized knowledge in and a capacity to use their unique knowledge in their specified discipline for the good of the greater public.

The importance of technical skill to the field of public administration is exemplified through several examples of public service sectors that are reliant on technical skill, namely the education or health care sectors. There are also technical skill sets that are imperative to the effective implementation of public

service, however, that do not remain constricted to a specific service sector, and instead seep into all areas of public administration. This is the case with financial management and budgeting, and is the example that will be used to illustrate technical skill development further in the following paragraphs.

As economic success and growth cannot be guaranteed across any locality, state, or nation, and appropriations by law for spending are politically determined, budgeting must be a primary task in the effective governance of public programming. Some would even argue that efficient financial stewardship and budgeting are primary issues that affect the long-term success of cities, towns, counties, and states. Having said that, these two public management areas for those in the public sector, consume a majority of the time they spend at work, and as multi-faceted management tasks, are ones that require technical skill.

With financial stewardship and budgeting being imperative elements in the success of any public endeavor, public administrators must consider all means by which to ensure sustainable financial security. While the ongoing pursuit of revenue streams to offset the expenditures of public programs and the enticement of big business growth to a community can be helpful, they are not always the best solutions. Public administrators then, while simultaneously considering these possibilities, must also concern themselves with the concept of lean management.

Lean management is primarily concerned with the idea of efficiency, and offers the approach most likely to create the various kinds of non-revenue generating solutions required for the effective financial management that states, counties, and localities require. This means that public administrators need to “think lean,” and begin by taking into account value chain analysis within their enterprise. Value chains are established and focused with the “end user” in mind, and seek to eliminate unnecessary processes, correct service process errors, remove “bottlenecks” in the provision of service, and employ technology to ensure the most efficient service experience. An end user, such as a citizen seeking Medicare coverage, a resident seeking a title search on a property or birth record, or an employee of a city, county, or state who needs information from the information technology, payroll, or human resources departments, all expect an efficient service experience and this is largely obtained through the use of lean thinking.

Lean thinking, financial stewardship, and budgeting, as mentioned before, are technical skills, however, the good news is that these skills (as with most technical skills) can be learned. Public administrators can become accustomed to using these skills strategically; using lean thinking to transform their organizational structures from 19th Century bureaucratic organizations to value chain based entities, to develop a lean culture as part of their enterprise, and to empower employees to create new time savings, and, subsequently spending savings for their organizations. Public administrators of all types can use these technical skills to remove observable barriers to the provision of service as a

management solution, they can emphasize the use of lean management techniques as expense reduction strategies, and they can ultimately maintain or even improve the quality of results for the “end user”. Ultimately, the effective use of financial management, lean thinking, and budgeting technical skills result in greater accountability and responsibility for Public administrators while simultaneously improving the efficiency of service, and lead to a culture of effective financial stewardship and budgeting for programs through value chains organization and away from using the budget as a revenue forecast.

Human Skill

In contrast to the development or implementation of technical skill, human skills require the development of skills that public administrators need to work most effectively with people: as a leader, a team member, with their colleagues, direct reports, and supervisors. These skills can be difficult to illustrate, and even more difficult to develop as human skill requires proficiency in many different areas, i.e. communication, cooperation or collaboration with others, negotiation, etc., however, human skill is “primarily concerned with working with people” (Katz, 1974). It is demonstrated in “the way individuals perceive (and recognize the perceptions of) superiors, equals, and subordinates” (Katz, 1974), and in how individuals subsequently behave or respond to those perceptions.

The development of human skill is founded on a level of self-awareness and understanding of an individual’s own “attitudes, assumptions, and beliefs about other individuals and groups” (Katz, 1974), and on their ability to recognize the usefulness and limitations of these perceptions while simultaneously accepting and willingly exploring the “viewpoints, perceptions, and beliefs (of others) which are different from their own” (Katz, 1974). This understanding of their own and other’s perceptions helps to guide communication, and direct behavior, and allows for the minimization of conflict or misunderstanding. Individuals with strong human skills can “create an atmosphere of approval and security” (Katz, 1974), and can encourage participation in the “planning and carrying out of those things which directly affect them (or the team)” (Katz, 1974). They are “sensitive to the needs and motivations of others” (Katz, 1974), and are skilled in the anticipation of potential reactions to various courses of action thus allowing for them to better guide organizational growth through their shrewd understanding of the people (and their needs) who will be impacted by their decisions.

As mentioned previously, human skill can be difficult to develop, but is an imperative skill for public administrators to master. Human skill should be implemented with consistency and fidelity, and it should be recognized that “everything that is said or done (or is left unsaid or undone) has an affect” (Katz, 1974) on those around them. It is this idea that makes it imperative that future public administrators demonstrate, as “an integral part of their whole being” (Katz, 1974), human skill in their interactions with those around them to be of utmost

effect. One area in particular, that of leadership, is a vital human skill used in conducting the public's business.

The development of public administrators as leaders is key to highly effective public management. Public administrators who acknowledge and utilize their knowledge of self and their understanding of the perceptions of others, set the tone, establish the culture, and provide a clear vision of where the organization is going and what must be done to achieve the desired result. Aspirational leaders in a state or local government strive to overcome the "we have always done it this way" attitude, and seek to establish and adhere to the pursued agenda to attain the strategic organizational purpose while maintaining a strong knowledge of how to work well with others. Public administrators who strive toward leadership seek to build the adaptability of the city, county or state government administration, they seek to improve human resources, incorporate communication, and they build trust between government entities and between government entities and their constituents. All of these tasks require the development of strong human skills—an essential and protracted endeavor.

A strong foundation of leadership must be established and take precedent before leaders can move on to take any additional steps, which will be required, to make the local or state government effective and ultimately sustainable. Following the establishment of a firm foundation, leaders can then begin a close analytical examination of how the government operates, not only in times of economic stress, but also long-term. This analysis is important for a multitude of reasons, and required if success and sustainability are to be realized and sustained.

As a leader, moving the change agenda forward should include laying out a clear vision that others can follow, collaborating with colleagues and empowering those within the enterprise to take the actions necessary to ensure the success of the vision, and then measuring the impact the intended public service had on those who were served. When pursuing the proposed vision and/or sustainability agenda for an organization, community, or governmental entity, it is important to consider the resources currently available (perhaps utilizing the technical skills discussed previously). The evaluation of need and the allocation of existing resources, as well as consideration for how these allocations affects the proposed vision and/or sustainability agenda must also be taken into account, and this is largely done through measurement.

Measurement is a critical element of "program capacity" and serves as a tool to evaluate impact. Measurement evaluates performance, and requires an instrument, i.e. a scale or "yardstick", in order to evaluate the intended programmatic influence. It is important to note that measurement is not merely counting, as this will not tell us anything about the influence of the performance on a community or initiative. For example, counting the number of citizens served, or the number of sidewalks repaired within a community does nothing to tell us about the satisfaction level of the communities' citizens, or about the appearance

or citizen perception of the sidewalks repaired. In attempting to ascertain impact in these areas, a measurement scale or tool must be utilized and the performance of the community leader or governmental entity or service must be evaluated specifically for the intended impact. Having said that, despite the use of “tools” to measure impact, the reliance of accurate data regarding the impact of any program is still reliant on a public administrator’s use of human skill as the measurement of impact is often evaluated through collaboration with others, and through the collection of opinions and impact statements from those being served. A community cannot change what does not work without first measuring impact, and this, in the end, is accomplished through human skill and interaction.

Ultimately, a leader must model the change he or she wishes to see enacted. They must be grounded in the full understanding of their own beliefs and biases, and they must be able to understand and recognize the beliefs, needs, and perceptions of those around them. They must pursue the development of a strong foundation built upon capacity development, communication and trust, and they must actively establish vision, and lead and empower those around them to support the proposed change agenda even in the face of challenge. They must understand and effectively evaluate, through measurement, their progress and impact in the community, and use this information to create change initiatives when the desired impact is not being observed. These skills can be readily developed through careful case study and problem centered learning exercises.

Conceptual Skill

Finally, by contrast to both technical skill and human skill described above, conceptual skill is more concerned with being able to see the “big picture”. This means that future public administrators must develop the capacity to comprehend how all functions and processes depend on one another, and how changes to those functions or processes impact or alter the functioning of any and/or all other parts of an enterprise, whether that be an organization, a community collaborative, or a local, state or national government. The individual who is skilled conceptually should be capable of extending this “big picture” visualization to their entire industry, and can take into account the “political, social, and economic forces of the nation on the whole” (Katz, 1974) thus allowing them to guide decision making in such a way to ensure the welfare of their entire constituency.

Some say that the development of conceptual skill is the “unifying, coordinating ingredient of the administrative process, and of undeniable over-all importance” (Katz, 1974). Consider that it is through conceptual skill that an individual or enterprise is able to see the bigger picture, understand how every part influences all other parts, and subsequently make decisions that ensure success. It is through conceptual skill that individuals can envision a future course of action for their organization, community or government and take action that will move

their enterprise forward. In addition, as it is (again) through conceptual skill that leaders are able to set the tone as they are making decisions and leading the charge toward progress; the development of conceptual skill is imperative for every aspirational public administrator. Ultimately, it is through an individual's exercise of conceptual skill that the apparent success of any organizational endeavor is assured.

While most areas of public administration will require some level or combination of all three types of skill (technical, human, and conceptual), one example of an area where conceptual skill is needed in state and local government is when considering a community's capacity for sustainability. Some would say that this is perhaps the most significant issue facing contemporary society, and state and local governments today. While sustainability initiatives can be quite complicated and encompass many facets including diversified revenue sources, green technology, green residential development, and green infrastructure to name just a few, conceptually, sustainability is merely a set of formulaic steps. Peter York of TCC calls these steps the sustainability formula. The sustainability formula York writes about is comprised of the following elements:

LEADERSHIP + ADAPTABILITY + PROGRAM CAPACITY = SUSTAINABILITY

In the equation described by York, of particular note is the fact that sustainability is not a "stand alone" result of a single effort but rather a combination of multiple elements. In this formula, people must come first (human skill), followed by program work requiring resources (technical skill) to achieve the desired conceptual projection or outcome i.e. in this case sustainability. In this example, technical and human skill combine to ensure an organization's ability to implement their conceptual skills for the good of the enterprise. It is important to note however, that no singular skill set is any less important than any other is; rather the public administrator's leadership capacity and the technically skillful use of resources such as revenue are supplementary or foundational to the developed capacity of the organization to absorb change.

Conclusion

Ultimately, a public administrator must have a strong foundation in the history of the field, they must be educated in and pursuing opportunity for professionalization in their field, and they must actively seek to develop and continually refine their technical, human, and conceptual skills in order to most effectively wield the power granted to them as Public Administrators. Having said that, all of the work, effort and skill development needs to remain secondary to one of the most foundational reasons for which to pursue a position in the field, that of service to constituents. It is this service that must continue to be a public administrator's utmost priority, and toward this end, we conclude with a brief story

about a special group of Olympians who uniquely illustrate the ideal of service, and the pursuit of success for all.

“There was a story going around about the Special Olympics. For the hundred-yard dash, there were nine contestants, all of them so called physically or mentally disabled. All nine of them assembled at the starting line and, at the sound of the gun, they took off. But one little boy didn’t get very far. He stumbled and fell and hurt his knee, and began to cry. The other eight children heard the boy crying. They slowed down, turned around, and ran back to him – every one of them ran back to him. The little boy got up and he and the rest of the runners linked their arms together and joyfully walked to the finish line. They all finished the race at the same time. And when they did, everyone in the stadium stood up and clapped and whistled and cheered for a long, long time. And you know why? Because deep down we know that what matters in this life is more than winning for ourselves. What really matters is helping others win, too, even if it means showing down, and changing our course now and then (Rodgers, 2005).”

This story serves as an inspiration to aspirational public administrators: service to the public is a noble endeavor, one that should not be undertaken lightly, and one that should be pursued with singular purpose, augmented by the overarching challenge to serve others with humility and a caring concern for their human dignity and spirit. It is unthinkable that public service would ever become anything but a profession of the highest calling; yet, in antiquity, as Brunk, Meyer, and Wilson-Gentry observed “... the ethical situation in public affairs became so bad during the late Roman Empire where politics was viewed as being so costly that it was impossible to get enough people to fill the empire’s local offices, the Emperor Maxentius finally had to make public service a punishment for certain crimes (Brunk, et.al., , 1999). The United States has a tradition of public service as a noble and honorable profession, not a punishment; hopefully, the past is not prologue!

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COLLATERAL LEARNING: THE ADVANTAGEOUS SIDE EFFECTS OF PURPOSEFUL LEARNING IN PURSUIT OF MEANINGFUL GOALS

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ABSTRACT

The purpose of this paper is to introduce the term “collateral learning” and elaborate on it as a concept for improving our teaching of college students. Meaningful learning involves connecting new ideas and knowledge to existing knowledge structures. When a student (or any person) has meaningful interests and goals, he or she will, by definition, readily and enthusiastically strive towards the attainment of those goals. A meaningful goal indicates that the goal is of importance to the person, is personally relevant, and accepted by the person. The goal plays an influential role in the individual’s allocation of attentional and related resources. The person really wants to “work” towards a meaningful goal. Because of that interest and desire, a person is willing to work hard to find out all sorts of related ideas and knowledge that are peripheral, but that pertain to the attainment of the original meaningful goal. The peripheral but pertinent learning that a person enthusiastically embarks on and realizes because of the desire to attain a meaningful goal is the essence of collateral learning. In the pursuit of a meaningful, important to the person, goal, such as a goal of becoming exceptional at something, the person will readily embark on learning many related topics. And, precisely because the extra learning is both connected to ideas and knowledge of interest to the person and connected to purposeful striving, collateral learning is an effective and a particularly meaningful way of learning.

Key Words: learning, goal-seeking, motivation, peripheral-learning

INTRODUCTION

Although there is some tendency to think we know something much better than we actually do (Sloman & Fernbach, 2017), over time, people tend to know a lot about several different content areas. How and why did they come to learn these things? Some of it was learned in formal educational settings, but most of it was not. How is it that people come to learn new things? Recent research has

advanced many important ideas about learning and about teaching that leads to better learning. Several prominent research streams have investigated a few key broad questions about why and how people learn, what motivates more effective or deeper levels of learning, and what can teachers do to facilitate such learning. The general overriding questions may be broad, but the research has become very detailed and sophisticated, identifying and exploring a vast stream of importantly nuanced aspects of individual learning.

Not surprisingly, in biology and neuroscience researchers have addressed the combined roles of genes, hormones, neurons, as well as the context of behaviors concerning why and how we decide to learn something (Sapolsky, 2017). Similarly, cognitive scientists have also provided insights into learning delving into exploration of cognitive science and the learning of specific subject matters (e.g., mathematics, reading, languages, etc.) as well as more general principles for teaching, taking into account such things as how people think, remember, and how they think about thinking (Metcalfe & Kornell, 2007). For example, there is an interesting persistent illusion that blocking together of the material enhances inductive learning compared with interleaving of related by different material. This is not the case but changing this belief and a preference for blocking over interleaving is not easy (Yan, Bjork, & Bjork, 2016).

Perhaps more prominently (or voluminously) featured in research output in the area of learning are the findings from the behavioral and psychological based research approaches. A primary focus of much of that research deals with motivation as a key component to better understanding of learning. We will briefly address a couple of these as they pertain to the concept of collateral learning. We will define collateral learning, demonstrate why it is of value to students and educators, provide examples for illustrative purposes, distinguish it from other related educational concepts, and develop actionable recommendations for working towards realizing the opportunities associated with collateral learning.

COLLATERAL LEARNING

People are interested in, and have, personally meaningful goals related to all sorts of activities. Yet, there may be important individual differences in the extent to which people have strong interests and associated personally meaningful goals. Still, any given individual may want to become truly excellent as a skateboarder, mountain biker, novelist, material scientist, guitarist, restaurateur, cake decorator, painter, or a near infinite number of other possible pursuits. In the strong pursuit of those goals, they will enthusiastically seek to know more about many other topics. The learning is particularly meaningful because the new ideas and knowledge being learned are both connected to existing knowledge structures and are being sought for the purpose of solving problems in an existing area of interest. Also, these primary target goals of, say of being a better skateboarder or any of these other collateral learning contexts, tend to have characteristics related

to the state of flow (Csikszentmihalyi, 1990). Meaningful learning is meaningful to some important, relevant, and real objective.

Extensive and well-developed research addresses why and when and how people learn. Self-determination Theory (SDT) (Deci & Ryan, 2000; Ryan & Deci, 2000; Ryan & Deci, 2017; Ryan, Kuhl, & Deci, 1997) generally posits that when people are learning out of their own interest in personally meaningful goals, they will develop deeper learning while persisting through challenges they encounter in the pursuit of their learning. It is an approach to motivation that is interested in a person's inherent growth tendencies and the three empirically validated psychological needs (competence, relatedness, and autonomy) that facilitate the inherent growth tendencies (Ryan & Deci, 2000). This has direct relevance for the concept of collateral learning.

In 2007, Angela Duckworth and her colleagues defined and elaborated on a psychological construct that they named as "grit." Grit is defined as "perseverance and passion for long-term goals." (Duckworth, Peterson, Matthews, & Kelly, 2007). They carefully examined the concept of grit in relation to talent and achievement, personality and achievement, and in the development of a discriminately valid measure of the concept. Their findings were impressive in that grit showed incremental predictive validity of success measures above and beyond what was explained/predicted by general intelligence and conscientiousness. We suggest (propose) here that grit will be predictive of who is more likely to experience and benefit from collateral learning. Duckworth, et. al. (2007) explain that grit involves a person working strenuously toward challenges and maintaining his or her interest over long periods of time even though one may experience plateaus, adversity, and intermediate failures. This sounds very similar to what we heard from people who were relaying their own experiences with collateral learning. They had to learn other things to get even better at their primary pursuit. Grit seems to be a trait that contributes to becoming really good at something, beyond the required ability and initial motivation. Collateral learning may represent one manifestation of a person with high grit who has committed to, and sticks with, long-term, personally meaningful goals.

Similarly, Vansteenkiste, et. al. (2018) demonstrate that higher personal significance and higher self-relevance of one's learning goals facilitates the process of internalization and broader growth tendencies. They find that teachers can foster such effective processes in their students. These ideas mostly relate to human tendencies towards wanting to learn something about a given, or particular, specific learning goal, what might be called a "target goal." These ideas directly relate to the processes in collateral learning. Collateral learning is the additional learning that occurs in these self-determined individuals who are in the general pursuit of their more primary "target goal." Collateral learning may address the tension between intrinsic and extrinsic motivation, especially with regards to internationalization processes. Is collateral learning an extrinsically motivated

learning experience? Extrinsic motivation tends to instrumentalize the learning when it is done as a means to reaching another outcome other than the activity at hand (Vansteenkiste, et. al., 2018). However, with collateral learning, we propose that the individual exhibits something referred to as “autonomous regulation” by Ryan and Deci (2017), such that the engagement and striving for developing towards one’s primary target goal leads one to engage in instrumental, yet intrinsically valuable, learning goals. Thus, collateral learning is not extrinsically motivated learning even though it comes about because of some inherent instrumentality towards one’s primary target goal.

For collateral learning, the pursuit of a meaningful goal, especially the seeking of competence and the sense of satisfaction of functioning at a particular skill level, and desiring that skill level and the pursuit of that goal for its own sake, for the fun or joy of it, and the feeling of being good at it, incorporates the very advantageous side effect of also wanting to learn all the related things that inform or add to the experience of seeking that meaningful goal.

LEVERAGING COLLATERAL LEARNING IN OUR CLASSROOMS

Can we use pedagogical structure, process, and content to engineer teaching to enable and encourage more collateral learning? How do people learn? An initial step in answering that is to recognize/acknowledge that people do learn in a variety of ways. What can we do in the classroom to try to leverage the concept of collateral learning to help our students learn more? How do we help students to learn more and make the learning more meaningful? As a start, it is helpful if we can connect what it is that we are teaching to the meaningful goals of our students. This may be very difficult, especially at first glance. How do we help students to learn? Do we actually teach? Do students learn and teachers teach? These are not new questions. Socrates often claimed “I have never been the teacher of anyone whatsoever” even though he is considered one of history’s most influential teachers (Boorstin, 1998). Can collateral learning concepts help us to make teaching more likely to result in learning?

Are there structural, process, and content-related tactics to engineer teaching to enable and encourage more collateral learning? The answer appears to be, yes. When we consider that the collateral learning is associated with meaningful, internalized goals dealing with the pursuit of excellence related to a skill or activity or goal/objective, we can work to increase the likelihood of collateral learning greatly affecting our students. A key element is the development of some activity that will enhance the likelihood of a student internalizing and “owning” a goal. Students who really want to do well and want to engage in the pursuit of the activity will more likely want to allocate attentional resources and time and other resources towards getting the goal accomplished successfully. In so doing, the student will learn much peripheral knowledge and skills required to enhance the progress towards the primary goal.

The first suggestion is that we should develop some type of experiential learning activity for our class to go along with the “knowledge transmission” we expect to result from our lectures and discussions. If the experiential learning activity provides for a clear and important goal, it sets a foundation for some collateral learning to occur. People seeking to do an activity well will learn contextually important knowledge and skills in addition to the direct acquisition of skills and knowledge of that specific activity.

The second suggestion is to try to allow an activity wherein the student has a choice of the “context” within which the activity occurs. For example, an experiential learning activity might be to conduct a process improvement effort via modeling and simulating a business process for a real business. That creates some conditions that can lead to some collateral learning. But now let’s say you also allow students to choose the business – such that the student who has a target goal of excellence as a skateboarder now can choose to do a process improvement simulation modeling consultancy project with a manufacturer of skateboards. This student is almost certain to get a lot of collateral learning from the internalization of the primary task or goal leading to a sense of fun and excitement and relevance in learning all that needs to be learned to do the primary target goal well. A more general form of the second suggestion is to make the things we are trying to teach related to something the student already knows and in which the student has a high level of interest.

Relatedly, a third suggestion is to provide choice in context within which the learning is developed through other assignments. Papers or projects often take a lot of time and are a lot of work for students. When the student is allowed to choose a topic, they can relate to an activity they enjoy. The entire process of the paper or project work can be more rewarding, more personally meaningful. Grades tend to be extrinsic and much less personally meaningful than engaging in something that has relevance to something important to the student. If an avid rock climber is given the choice of a topic and the geology of an area fits with the learning criteria, then allowing the student to choose this creates not only choice and autonomy (Assor, Kaplan, & Roth, 2002) but also meaningfulness and relevance to personally meaningful goals. Clearly, this can lead to getting more learning from what otherwise could have been a boring assignment.

Another, fourth suggestion, is to establish relevance at the beginning of each class period, using a brief three question format of an orientation to the class session. These were summarized by Fox (2011) to be 1) what are we doing in class today? (what questions will be addressed?), 2) why are we doing this? (how is today’s material tied to important outcomes?), and 3) how are we going to address the content?

A fifth suggestion for how we might foster collateral learning in our teaching is provided as an implication of grit being as important as talent to

high achievement. Specifically, Duckworth, et. al. (2007) suggest that students who show exceptional commitment to a meaningful goal ought to be given as much support and attention as is given to students who show exceptional intelligence (such as the gifted and talented programs). Basically, the idea that is quite relevant here is that we should recognize, support, and encourage students' interests and commitments they have concerning striving towards meaningful goals that take a long time. The long term goals probably are associated with a lot of collateral learning in order for the students to achieve their sought-after levels of performance or expertise. Similarly, we should encourage students to work on their goals that interest them deeply, goals that will take a long time and a persistence and commitment to reach; that is, we should encourage stamina in addition to the oft encouraged intensity.

Finally, a sixth suggestion is that the elaboration of the idea and concept of collateral learning may function to begin to create a cognitive script in students. Cognitive scripts have been shown to greatly influence how people go about deciding what to do (c.f., Lord & Kernan, 1987). The more our students have developed cognitive scripts about pursuit of a meaningful goal, the more they expect to be seeking additional information in support of pursuing some important goal. Students will exert more attention and effort to do learning of peripheral supportive skills and knowledge to enhance their pursuit of meaningful goals when they have scripts that indicate that it is appropriate as a course of action.

EXAMPLES TO ILLUSTRATE THE CONCEPT OF COLLATERAL LEARNING

One characteristic of the concept of collateral learning is that people seem to easily grasp the ideas and they seem to very readily, almost spontaneously, generate instances or examples from their own experience where this has occurred. As a method to further illustrate the concept, we will include a few brief examples of what we have heard.

The first is a teaching example. A professor, upon hearing the brief idea of collateral learning thought about it for a couple of minutes and commented on his immediate thoughts. That sounds like what happens with my experiential learning activity. I have students do a process modeling and simulation activity for real organizations each semester. Their primary goals are to learn how to use the software and model a business process of a real-world client. The simulation is used to identify possible process improvements. Using the language of this paper, the main target goals of these students who are going to be interacting with people from real businesses is to learn their business process and, also, to learn and execute a simulation of that business process in order to look for possible improvements. What they end up learning is a lot of extra stuff, we can call "collateral learning." They learn things about how to interview and question managers in an investigation of the business process under review, how to

communicate and interact with managers, that it is important to manage expectations, and how to position the final delivery of a service recommendation or end solution in appropriate terms for a given context. They also learn some practical small piece of a particular process at that organization and sometimes they learn that the managers don't have an adequate grasp of the process even while understanding fully the desired results. Also, students learn the value of face-to-face communication (meetings) when defining and clarifying and scope of work, how to deal with criticism, and much more. When the students internalize the assignment as a goal of actually helping to improve the process in a real business, they end up with a lot of collateral but pertinent learning that is related to the target goal of using the simulation to model and suggest improvements to a business process.

The second example is from someone who surfed. He relayed that he started surfing and loved it. Of course, he wanted to get better at it. As he pursued surfing, he felt the "flow" of optimal experience and wanted to get even better. He started learning about waves and what causes waves. He learned some about the physics behind wave formation. He learned about ocean topography, the tides, and how weather plays a role in wave formation. He eagerly read surfer magazines and in so doing learned about places (geography) around the world where waves were being surfed. The point, again here, is the pursuit of surfing resulted in a lot of collateral learning.

Similarly, a rock climber and mountaineer thought back and realized he had learned about geology of rocks and rock formations, the science of erosion and rock fall, physics - mostly associated with some of the equipment and process of placing and using it, the actual location of climbing areas (geography), weather and reading weather, and all sorts of knots and related information. Also, he had learned how ropes are made and different types of strengths associated with them, a little about human anatomy and physiology, training techniques, health effects associated with aluminum, decision making, some of the effects of fatigue and coldness and hunger on judgment and decision making, corrosive properties of various chemicals, importance of systematic safety protocols to help manage risk exposures, and some history of some interesting people and places.

Again, these are simply examples, used to illustrate that when someone is fully engaged in the pursuit of meaningful goals, purposeful learning of relevant peripheral topics and skills will likely ensue, and this learning is what we are calling collateral learning.

THE VALUE OF COLLATERAL LEARNING

This set of pursuits that results in learning collateral knowledge and skills because of the desire to do well with another meaningful pursuit exhibits the situation in which people internalize learning goals across broad content areas. Thus, there is meaningful learning that expands to broad topic areas. In so doing, the person learns more and has a richer repertoire of knowledge, skill, experience, and even as just a direct benefit of the desire to learn more about these collateral domains. Perhaps more impactful is that the pursuit of the meaningful goals goes much better because of the collateral learning that has taken place. So, the value entails not only the significant value of knowing more things more broadly, but also of pursuing some meaningful goal more deeply, fully, and thoroughly.

Next, collateral learning builds on one's self-efficacy beliefs as the person experiences some successes and gets better at the primary meaningful goal being pursued. Mastery, or even successful experiences, contributes to a person's confidence and can be an important contribution to one's psychological capital efficacy (Luthans, Youssef, & Avolio, 2007). Collateral learning facilitates accomplishing things and that will lead to enhanced self-efficacy beliefs.

It embodies identification regulation, in which learners come to own their behaviors and take more responsibility for their learning of the meaningful, personally relevant content (Vansteenkiste, et. al., 2018). This effect becomes even stronger (integrated regulation) when the learning activity is aligned with the person's deep interests and commitments. Thus, collateral learning contributes to one's sense of owning a meaningful goal, improving responsibility for moving towards meaningful goals.

Collateral learning likely encourages persistence. This is very beneficial to moving forward in domains of meaningful objectives. As Duckworth, et. al. (2007) found that grit is a trait that explains additional variation in personal success beyond what intelligence and conscientiousness tells us, we are suggesting there may similarly be an increase in such persistence resulting from collateral learning. At the most basic level, there is more invested in the goal after more collateral learning and that alone may contribute to more persistence. Through learning more about something peripheral to a primary pursuit, and, having that help one in doing better with the primary pursuit, people learn that to get better at something requires steps and repeated work. Thus, collateral learning may help facilitate the very helpful disposition of having a growth mindset (Dweck, 2006), coming to believe that getting good at doing something takes time, effort, and persistence.

Collateral learning contributes simply to the joy of learning.

Collateral learning helps through broadened knowledge that can be useful in new unexpected/unrelated situations/problems. When we observe collateral

learning that has occurred with ourselves or others, we begin to see how the pursuit of excellence in some activity is facilitated by the process of incrementally getting better. Often this requires learning and connections from broad and apparently unrelated domains. Things we learn in one domain can be useful to help solve problems in other domains. Taken together, a lot of people with ideas about learning, purging errors, seeking answers in scientific ways, can result in the addressing of some very large societal issues such that we can see great improvements in very important markers of well-being over time, as elaborated on by Steven Pinker (2018) in his book, *Enlightenment Now*.

The total experience of the purposeful learning in the pursuit of meaningful goals might be considered as “core projects” of the terminology used by Brian Little (2007) and others who research personal project pursuit. Accordingly, Little (2007), states that “Human flourishing is contingent on the sustainable pursuit of individual’s core projects.” And continues, “core projects are those that are most resistant to change, most extensively connected with other projects, and intrinsically valued by the person as pursuits without which the meaning of one’s life would become compromised” (p. 43). This is basically saying that the pursuit of these meaningful goals that are also connected to many other related pursuits (sounds a lot like the concept of collateral learning being expressed here) may be a central element to experiencing meaning in one’s life.

A final characteristic of collateral learning, as a concept, that makes it valuable is that it seems to be easy to grasp and it seems to resonate well. This accessibility and apparent attractiveness of the concept can help set it up to be more easily used in efforts to improve learning.

CONCLUSION

There is much value in collateral learning. The peripheral but pertinent learning that a person enthusiastically embarks on and realizes because of the desire to attain a meaningful goal is the essence of collateral learning. In the pursuit of a meaningful, important to the person, goal, such as a goal of becoming exceptional at something, the person will readily embark on learning many related topics. And, precisely because the extra learning is both connected to ideas and knowledge of interest to the person and connected to purposeful striving, collateral learning is an effective and a particularly meaningful way of learning. Collateral learning expands the knowledge and skills of the individual in ways that are very useful for the primary target goal but also in many ways throughout their lives.

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DECREASING INPATIENT ADVANCED IMAGING UTILIZATION AND IMPROVING TURNAROUND TIMES

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ABSTRACT

Advanced radiology imaging procedures are a great tool that can be used to help diagnose a patient's illness; conversely they have a reputation of being overutilized by referring physicians. With improvements in technology there has been a considerable increase in the ordering of advanced imaging procedures. Many feel that these increases are driving up the cost of healthcare in America. Recently, leaders at Academic Medical Center (AMC) addressed both the utilization and turnaround times of inpatient advanced imaging procedures such as computerized tomography (CT) and magnetic resonance imaging (MRI). They initiated an implementation work plan (IWP) to help drive down these metrics to help cut costs and possibly lower inpatient length of stay.

INTRODUCTION

Advanced medical imaging, such as computed tomography and magnetic resonance imaging, has transformed the healthcare industry over the years, and is considered one of the top medical developments of the past 1,000 years (Anonymous, 2000). The computed tomography scan, also known as CAT scan or CT scan, uses ionizing radiation to create 2D and 3D (volumetric) images of the body, greatly surpassing in terms of spatial and contrast resolution the abilities of plain film radiographic imaging. CT scanners originated from an idea that Allan Cormack envisioned in the 1960's, which was later patented by Godfrey Hounsfield of England in 1972 and then installed in United States hospitals by late 1973 (Hsieh, 2015). Magnetic resonance (MR) imaging (MRI) uses strong magnetic fields and radio waves instead of ionizing radiation to create 2D and 3D images, resulting in images where the contrast between different tissues is based on factors that are different from those that produce images on CT. The two imaging processes, therefore, are complementary. MR imaging was introduced commercially later than CT, and arrived in United States hospitals in the early 1980's. Since the development of these advanced imaging procedures, their utilization rate has increased far more than that of other imaging modalities. The

U.S. has one of the largest number of advanced imaging scanners, per capita, compared to other nations, and ranks very high in the number of exams performed. The U.S. is fourth in the world in the number of CT units (43 per 1,000,000 population (14,000 units), but second in the number of CT scans performed at 227 per 1,000 population (73,800,000 exams in 2017) (OECD, 2018a, 2018b). With 37.56 MRI scanners per million population (12,212 scanners) in 2017, the U.S. is second only to Japan, and fourth in the number of MRI exams performed with 111 per 1,000 population (36,100,000 exams in 2017) (OECD, 2018c, 2018d). Advanced medical imaging has driven up healthcare costs in our country, in part due to high utilization (Papanicolas, 2018).

PROBLEM STATEMENT

Inpatient medical imaging does not offer any financial incentives to the hospital since reimbursement is linked to diagnosis-related groups (DRGs); consequently, increases in inpatient imaging utilization do not increase the hospital's revenue (Agarwal et al., 2010), and the costs associated with unreimbursed expenses are absorbed by the hospital. Therefore, the senior healthcare leaders and other stakeholders at Academic Medical Center (AMC) have begun to focus on controlling the cost of advanced medical imaging. At the same time, they focused on a second goal of reducing the turnaround time (TAT) for advanced imaging studies. Since AMC had not been tracking inpatient advanced imaging utilization or turnaround times the leaders had to determine an effective system by which our current measures could yield as much data as possible. Utilization was measured by dividing the number of exams (MRI or CT) by the number of hospital discharges. At the start of this project CT unitization was at 0.2635 and MRI was 0.1880. At the start of this project in FY17 the CT section's turnaround time averaged 8.8 hours from the time the referring physician placed the order to the time the radiology report was available to the physician. The MRI section had an even higher turnaround time (27.8 hours) in FY17. With such lengthy turnaround times for both imaging modalities, senior healthcare leaders felt that CT and MRI needed to be the central focus since it was believed that prolonged turnaround times for advanced imaging studies caused potential delays in treatments and surgeries, decreased patient and physician satisfaction, increased the length of stay (LOS), and ultimately increased hospital costs. Once the senior healthcare leaders determined the utilization and turnaround time data from FY17, our facility began to look for other hospitals' benchmark data on inpatient medical imaging utilization and turnaround times so that we could establish reliable comparison figures. We quickly discovered that there was not enough benchmark data on the metrics for advanced inpatient imaging. Without having comparison data, we decided to track AMC's average length of stay and hospital expenses as we worked through this utilization/turnaround time project. As of FY17, LOS was 6.04 days and monthly expenses were valued at \$20.9 million.

RECENT ACTIONS

Since there was no comparison data for AMC to establish either a realistic goal for inpatient advanced imaging utilization or turnaround times, senior healthcare leaders arbitrarily set targets for both metrics. The established utilization was set at 0.1963 for CT and 0.1620 for MRI. The turnaround time goal was set at 4.0 hours for CT and 12.0 hours for MRI. Once these goals were set, the project was handed over to leaders of the advanced imaging sections and work began with imaging technologists and other key stakeholders who might affect the turnaround time of these advanced imaging procedures. Our first action was to educate the imaging technologists and supervisors of the imaging areas on the principles of lean management. Lean management (or lean thinking) simply means “using less to do more”; it started in a Japanese manufacturing company, Toyota Production System (Womack, Byrne, Fiume, Kaplan, and Toussaint, 2005). Lean management has been gaining popularity in recent years within the health care industry to help streamline processes and eliminate waste. Lean management’s core idea is to determine if steps in the current process add real value, while eliminating non-value added steps that waste resources (Womack et al., 2005).

Once the imaging teams learned the core concepts of lean management, they began to evaluate their current processes and identify every step in the process once a physician places an order for an inpatient advanced imaging procedure. They quickly recognized areas that were necessary but not needed to be performed by the technologists. Historically, once the physician ordered a procedure that required any type of preparation before the exam could be performed (nothing by mouth/NPO status, MRI safety screening form, iodine contrast allergy questionnaire, etc.), the technologists had to notify the nurse about the required preparation and the need for the patient to complete the necessary MRI safety forms and/or contrast allergy questionnaire. The first change that was made during this process was to use our current technology to help eliminate the technologists’ involvement in this process. Since AMC uses computerized physician order entry (CPOE), we were able to activate a function within the system to eliminate the technologist’s phone call to the nurse. Once a physician orders an exam that requires a patient to be NPO, an order also populates for the NPO status and alerts the nurse and food services. We also enabled the CPOE system to prompt the nurses to complete the MRI safety screening form and/or contrast media questionnaire when an MRI or other study that requires contrast media is ordered. This helped eliminate unnecessary phone calls made by the advanced imaging technologists, thus freeing more time to scan patients. Another issue that was discovered during the review of our current process concerned outpatient imaging. Since outpatients are imaged on the same scanners as inpatients there was competition on whether inpatients or outpatients took precedence. We changed the hours of operations for outpatient imaging in both modalities and no longer allowed outpatients to be scheduled during the normal workday 7am-5pm. That allowed the imaging teams to be more productive in scanning inpatients instead of holding scanner time open because the technologists were waiting for an outpatient

to arrive for their appointment. Another major change that was made was to the hours of operation. The MRI section adjusted staffing to enable the section to image 24 hours a day. The CT imaging section was already open 24 hours a day but only scanned emergency room patients after 9pm. Therefore we simply altered the CT technologists' shifts to provide more coverage at night so inpatients could be imaged throughout the night as well. During this change, we found it challenging to find dedicated staff members to cover the overnight shifts and adequately train them. We even lost an integral team member due to the changes in hours but these changes to our operations proved to be beneficial to our turnaround times.

While all of these changes took place, both sections were using the continuous improvement cycle of plan-do-check-act (PDCA) to see how the turnaround times were affected. As a result of these changes, 12 months into the PDCA and lean management process the turnaround times were greatly reduced. By the end of FY18 the average was 5.5 hours for CT and 18 hours for MRI, that is a 37.5% and 35.3% reduction respectively. Even though the new averages did not meet the set goal, senior healthcare leaders believed that it helped reduce the average LOS and operating expenses to 5.71 days and \$18.9 million monthly. While utilization was not a central focus during FY18 and no specific actions were taken towards reducing it, utilization somehow was reduced during the year as well; 0.2615 for CT and 0.1610 for MRI.

RESEARCH REVIEW

During the early part of this century spending on medical imaging rose much faster than on any other medical service line, and although that trend has recently taken a downturn, the costs are still very high and payers are targeting unnecessary medical imaging to control their costs and lower their reimbursements (Duszak and Berlin, 2012).

To start managing advanced imaging utilization, a hospital must first analyze what their current utilization rate is. According to research performed by Agarwal et al. (2010), the proper method for this analysis is to adjust the CT and MRI volumes using the case mix index (CMI). Since more ill patients typically need and use more advanced imaging procedures hospitals must adjust the data as it relates to the average DRG of the patients they are caring for. Using the CMI-adjusted data gives a more realistic evaluation of utilization than just dividing the number of exams by the number of discharges and it also adjusts when the hospital has more critically ill patients.

Once a hospital has established their utilization rate they can begin focusing on how and why overutilization happens with advanced imaging exams. Many physicians order advanced medical imaging procedures even though the results are unlikely to improve or change the patient's outcome. As a result, these decisions can cause unnecessary costs to the patient, hospital, and insurance

companies. There are many factors that influence overutilization of imaging including financial incentives for physicians, entrenched practice behaviors of referring physicians, self-referral, defensive medicine, patient expectations, duplicate imaging studies when reports are not available, and lack of education of physicians on the appropriate exams to order for the patient's condition (Hendee et al., 2010). Advanced imaging procedures aid the physician by helping them diagnose or treat diseases faster and they benefit the patient by shortening the length of stay in the hospital. However, the benefits that advanced imaging provides come with some negatives as well because of overutilization. The hospital is providing a service that is not being compensated and has to absorb the costs, fewer time slots are available for imaging patients who may actually benefit from the procedure, time is lost, resources are used unnecessarily, and patients who receive duplicate or unnecessary studies that use ionizing radiation are increasing their radiation exposure (Bernardy et al., 2009).

To help combat unnecessary utilization, hospital systems should install a clinical decision support (CDS) system within their electronic health record. A CDS system is a computer based application that analyzes patient data to help physicians make clinical decisions by providing evidence-based medical approaches to patient care and support clinical decisions. CDS systems have been around for many years and can provide some great benefits to all the stakeholders involved in a patient's care; the physicians, patients, hospitals, and the insurance providers by decreasing cost, increasing the quality of care, and helping cut down on errors and adverse events (HealthIT, 2013). But can CDS systems truly help with overutilization? According to Blackmore, Mecklenburg & Kaplan (2011), the answer is yes. The research that was performed at Virginia Mason Medical Center showed that if physicians were reminded at the time of ordering that certain situations do not always warrant advanced imaging, the physician's ordering behavior changed. For example, the hospital's CDS system would suggest physical therapy when a patient's diagnosis is lumbar pain instead of allowing the physician to order a MRI of the lumbar spine, or it would prompt the ordering physician that a neurologist or allergist consult is an appropriate step before ordering a CT of the head or sinuses. These suggestions within the CDS system helped reduce utilization rates substantially for lumbar and head MRIs and sinus CTs. According to two other studies (Raja et al., 2012; Hoo, Wu, Vazirani, Li, and Barack, 2011), clinical decision support systems reduced the frequency of CTs ordered for suspected pulmonary embolism (PE) by simply asking if the patient's biomarker, known as d-dimer, was normal at the time of ordering. Since it is extremely unlikely to diagnose a PE in a patient with a normal dimer (Raja et al., 2012), a CT of the chest with PE protocol was not suggested within the CDS system if the patient's d-dimer was normal. If there was no d-dimer report in the patient's record, the CDS system would suggest that it be ordered. In order for a CDS to reduce overutilization most effectively, input from the radiologists is important when it comes to evaluating a CDS system for purchase by the hospital. The CDS system should have within its applications seamless access to the American College of

Radiology Appropriateness Criteria. The Protecting Access to Medicare Act (PAMA) of 2014, section 218, mandates the use of appropriateness criteria when ordering advanced imaging for Medicare patients in certain clinical settings (Jensen and Durand, 2017). With the cost of healthcare continuing to rise, the use of CDS systems can be a powerful tool that can greatly reduce unnecessary utilization of advanced imaging procedures and cut costs for our healthcare systems. One important item to note, according to Shortliffe and Cimino (2014), a CDS system does not and should not make the decisions for the physician. A physician's clinical knowledge and education should always come first while making patient care decisions.

PROPOSED PLAN AND SOLUTIONS

After exploring the topics of advanced imaging overutilization and turnaround time, a few potential solutions were discovered that will be proposed to the senior healthcare leaders of Academic Medical Center. The first idea is to reevaluate the current unitization metric. AMC is currently using a simple formula of dividing the total number of imaging exams by the total number of discharges and there is no similar benchmark data from other hospitals to compare. This method provides no understanding of why utilization increased or decreased. Using the case mixed index (CMI) method suggested by Agarwal et al. (2010) to calculate utilization data will allow AMC to account for sicker patients that typically use more imaging services and it also offers them benchmark data for comparison with other hospitals.

Another solution that will be proposed is to purchase a commercialized, Medicare approved clinical decision support CDS system incorporating the American College of Radiology Appropriateness Criteria. Starting January 1, 2020, a CDS system will be required for physicians to use for all Medicare outpatients that need advanced imaging according to the Protecting Access to Medicare Act (PAMA). This will help guide the ordering process for advanced imaging procedures. While this mandate is geared towards Medicare patients receiving outpatient imaging and not emergent or inpatient imaging, using the CDS system for all patients will be a useful mechanism to reduce overall overutilization of advanced imaging.

One other proposal is to engage and educate referring physicians on advanced imaging procedures. According to Hendee et.al (2010), many physicians who order imaging exams have very little knowledge about radiation, technique, or even possible alternative procedures that could provide the same or better information at a reduced cost. If the referring physicians were educated on the merits and limitations of imaging studies it could substantially reduce overutilization (Hendee et. al, 2010). Therefore, combining physician education with the previously mentioned CDS system would be an excellent solution that could help drive down utilization.

During the department's PDCA and lean process, it was discovered that the radiologist report turnaround time (RTAT) severely impacted the delivery of healthcare in a negative fashion. Since the department measures turnaround time from the time a physician orders the exam to the final dictation, the RTAT is included in the results. It was discovered that it was taking the radiologists an average of 2 hours (CT) and 7 hours (MRI) to complete their dictation from the time the technologists completed the patient's exam. With a total goal of 4 and 12 hours, that did not leave much time for the imaging technologist to process orders, screen patients, and perform the exam. Once this was discovered, there was a review of the radiologists' service contract and it revealed that the radiologists were allotted 12 hours to perform the dictation after the completion of the advanced imaging exams. Allowing the radiologists to have up to 12 hours to dictate an exam is well beyond the set goals for the complete TAT. Senior healthcare leaders should look to review and possibly reevaluate the service contract and assign a lower target than 12 hours for the RTAT. If reevaluation is not possible, AMC should consider a pay-for-performance (PFP) program to incentivize radiologists to expedite the RTAT. According to research performed by Boland, Halpern, and Gazelle (2010), a "radiologist PFP program appears to have a marked effect on expediting final report turnaround times".

CONCLUSION

Eighteen months into the utilization and turnaround time project, the advanced imaging TAT continues to decrease. Currently, CT imaging TAT is averaging 5.2 hours and MRI is 11.9 hours. After the initial decrease in utilization in FY18 utilization has recently increased in both areas, to 0.2923 and 0.1846 respectively. Whether this is due to a changing case mix is unknown. It is anticipated, however, that with the implementation of the proposed solutions, the utilization goals will be met.

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INCORPORATING SUSTAINABILITY AND THE PRINCIPLES FOR RESPONSIBLE MANAGEMENT EDUCATION INTO AN UNDERGRADUATE RESEARCH PROGRAM

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ABSTRACT

This paper analyzes a framework for undergraduate research that focuses on the Triple Bottom Line (TBL) concept, which allows for a broad business understanding of the interconnectedness and impact of economic forces, social influences, and the environment. The authors present an example of a guided interdisciplinary student research project that assesses, from a social cost-benefit perspective, the efficacy of a micro hydro power project on a midsize public college campus aimed at reducing energy costs as well as external costs from flooding of the watershed. Based on the research project, the paper incorporates the Principles for Responsible Management Education (PRME) with the goal of assisting sustainability programming in business schools.

Key Words: Triple Bottom Line (TBL), Sustainability, Principles for Responsible Management Education (PRME), Problem-Based Learning (PBL), Corporate Social Responsibility (CSR)

INTRODUCTION

This paper analyzes how sustainability and responsible management principles can be incorporated into an undergraduate research program. Sustainable development is defined in the Brundtland Report (United Nations, 1987) as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” There are 17 sustainable development goals set in the United Nations (U.N.) 2030 Agenda for Sustainable Development, including no poverty; zero hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation, and infrastructure; sustainable cities and communities; responsible consumption and production; climate action; life below water; life on land; peace, justice, and strong institutions; and partnerships for the goals. (Sustainable Development Goals, n.d.). Sustainability topics such as these are becoming increasingly prevalent in business education programs. More than 700 institutions of higher

education have signed on to the Principles for Responsible Management Education (PRME). Under this commitment, schools agree to infuse sustainability into their programs, and submit an assessment report on their progress every two years. Schools join the PRME because it provides a framework for embedding sustainability in business programs, and to gain access to learning communities and be recognized for such efforts (Principles for Responsible Management Education, n.d.). A partner of the PRME is the Association to Advance Collegiate Schools of Business (AACSB), the premier business school accreditation agency. The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, encompass much more than *environmental* sustainability. Many of today's business schools are covering topics in various courses and subject areas that relate to these goals, even if they do not actually sign on and submit reports that link their activities to the SDGs. Schools also advertise these efforts to local communities, prospective students and their parents, as well as to alumni.

In line with Problem-Based Learning (PBL), we outline a hands-on approach for a one-semester undergraduate research program that assesses the feasibility of a real-world (not a textbook) project using the Triple Bottom Line (People, Planet, and Profits) framework, or TBL. Although our example uses concepts drawn primarily from the accounting and economics curriculum (along with data from the natural sciences), the framework is applicable and can easily be adopted for student research in other subject areas. Any subject area can be adapted to PBL with a little creativity and planning. While the core problems will vary among disciplines, there are some characteristics of good PBL problems that transcend fields (Duch, Groh, and Allen 2001).

The SDGs to which our project directly links are: Affordable and Clean Energy; Industry, Innovation, and Infrastructure; Sustainable Cities and Communities; and Climate Action. For schools aiming to fulfill their obligations under commitments such as PRME, or to increase their sustainability profile more generally through the promotion of service learning and community engagement, the project described herein provides guidance.

UTILIZATION OF THE PROBLEM-BASED LEARNING APPROACH

Problem-Based Learning (PBL) is based on the teaching methodology that utilizes simulations and case studies, but with more emphasis on the connection between academics and that application to real world problems and scenarios. The aim is to provide each student with ample opportunities to develop critical thinking skills, problem solving techniques, and communication skills. The classroom can be used to provide the framework and fact-based content, which will set the foundation for a successful PBL undertaking. Even the CPA examination has moved toward more of a problem-solving approach.

The venue for the project is the Senior Seminar in Economics. Many schools and departments have similar capstone courses in which such a project could be undertaken. In our course, students are guided through the research

process by an individual faculty member or team of faculty, and must adhere to a detailed and firm timeline. Students begin by selecting an advisor and settling on an original research question that is manageable for a single semester course. Generally, our students' projects employ a range of methodological approaches: some students conduct simple t-tests while others use advanced econometric methods; others, including the project described here, employ methods more commonly used in accounting and finance, such as cost-benefit analysis.

Once the topic is selected, students are guided through a series of ordered steps. There are several graded checkpoints over the course of the semester which include written work and oral presentations. First, students submit a one-page research proposal which outlines their proposed topic, what question the paper is intending to answer, and why the question is important. Once the proposal is accepted by the faculty team, it is followed shortly thereafter by a detailed summary of the journal articles that are closely related to the project. Students fill out a table in which they identify the authors of the articles, their research question, the method and data used, as well as the main conclusions of each paper. For the next step, students use their populated table as a guide for writing the literature review, followed by the creation of a "skeleton" of the rest of the paper (including section headings) with the understanding that much of it will be left blank at this point. By the first presentation given by the student, (s)he is expected to be able to succinctly summarize the existing literature, discuss their methodology (cost-benefit analysis, for instance), and present summary statistics of the data that will be used in their analysis. Prior to this presentation, students provide their advisor and other faculty members with a copy of the paper with these details added to the appropriate sections. As previously noted, this is a work in progress, so sections (such as Results) remain blank until the student completes the appropriate steps to be able to fill in the section. The project culminates with a completed paper and final presentation to the faculty.

Each student completing a seminar project is responsible for the paper submission protocols and presentation dates; however, an interdisciplinary project like this requires a multifaceted approach with an above-average level of collaboration and investigation. Aspects of this particular project include coordination with field experts in meteorology, renewable energy, water meter placement and infrastructure damage assessment, as well as expenditure projections and analysis. The approach that we took with our advisee can be likened to the PBL pedagogy as it employs problem identification, critical thinking, problem solving, evaluation, as well as oral and written communication of results. The Senior Seminar in Economics aligns with the style of PBL as it begins with identifying a real-world problem, and the student is then guided toward a potential solution that considers the interests of the stakeholders. Under this approach, students must also discuss how they would evaluate the success of their proposed solution to the problem *ex post*.

CSR AND PRME FOUNDATIONAL PRINCIPLES

Student engagement is a key element of sustainability as it develops into social responsibility, which further develops into Corporate Social Responsibility (CSR). CSR is when corporations fully understand and take responsibility for their actions with respect to their impact on social welfare and the environment. CSR is an instillation of thoughts and actions to minimize the negative impact on people and the environment while simultaneously enhancing profits. CSR is unregulated and multifaceted. For example, companies may participate through community focused events, community partnerships, donating money, or creating an environmentally-friendly workplace. CSR does not restrict impact to the present: in addition to current observations and liabilities, we need to ensure our analytical approach includes the past as well as the future. These initiatives are not free of cost, and without a clear and global methodology to evaluate and fund social benefits, worthwhile projects continue to be passed over. The introduction of and support for Principles for Responsible Management Education (PRME) in business schools reinforces the concepts of TBL.

The primary focus of PRME is to assist in the education and preparation of tomorrow's business leaders by inclusivity and development of academic programs that supports ethical decision making. The six basic principles of the PRME are Purpose, Values, Method, Research, Partnership and Dialogue (Principles for Responsible Management Education, n.d.).

A SAMPLE PRME RESEARCH PROJECT

A mid-size state university in the upstate New York was chosen as the research site for this case study because the campus landscape has dramatically changed through the construction of parking lots and buildings. This has resulted in unforeseen flooding problems due to run off in a small creek that runs along the western edge of the campus. Additionally, two of the main streets in our case study location have been adversely impacted by this flooding. This project is a feasibility study that uses cost-benefit analysis to determine whether installing a micro hydropower site and/or the use of retention ponds could help limit or possibly eliminate the threat of major floods and the associated damages downstream, while simultaneously providing carbon-free energy to a portion of the campus. Of course, there are other alternative solutions to this type of problem. For instance, rooftop gardens, the installation of permeable pavement, or the planting of trees in strategic areas could mitigate flooding as well. However, after consultation with the "client" for the study (the facilities management team at the College), the presupposition was that the retention ponds in particular would provide the greatest flooding mitigation at the lowest cost.

"Micro" hydro systems (defined as a system capable of producing a maximum of 100-kilowatt hours of electricity) can serve as an alternative renewable energy source and are especially suited for areas with small rivers. We evaluate the potential to use water from the creek (which flows along a heavily traveled road leading to the main entrance to campus) to power a micro hydropower facility that would feed into the campus' power grid. In addition, the

construction of retention ponds (which costs \$2,000 per acre foot) will help store excess water during periods of high creek volume – these will be dry-fill ponds that fill when large amounts of precipitation occur and slowly seep back into the ground. By controlling excess runoff, flood damage can be managed and possibly eliminated. Water could also be piped from the ponds to the hydro plant, a turbine house where the flow of water turns mechanical energy into electrical energy. This electricity could feed into the campus’ electrical grid and offset some of the costs of the college’s purchased electricity. After passing through the turbine house, the water would be returned to the creek further downstream.

The cost-benefit model utilized here includes annual costs, maintenance costs, replacement costs, service lifetime, preventative maintenance costs, and the depreciated value over time. (The depreciable basis includes equipment cost, penstock cost, valves and fittings, installation costs, general design and permitting. We use MACRS 15-year depreciation (Internal Revenue Service, 2018).) This allows us to assess, under various scenarios, whether the installation of a micro hydropower plant and the use of retention ponds would be financially beneficial, thus constituting a worthwhile investment. As a social benefit, we assume that the city and town will avoid the road repair costs that are attributable to flooding events along the creek. Our metric for assessing feasibility is the benefit-to-cost ratio, which we calculate with and without the inclusion of social benefits. The Appendix provides further information on the data used in the analysis.

The social benefits accruing to the town and city come mainly from the retention ponds, not the turbine itself. The use of retention ponds would not only serve to collect water, but also cause the water to flow into the ground at slower rates, which reduces the risk of water overflowing the creek banks. Without major flood damage occurring, the town and city would save approximately \$93,000 annually. This is based on the average annual road repair costs (since 2006) that can be attributed to flooding of the creek basin.

An additional social benefit, outside the scope of this project, includes the potential insurance savings/discounts garnered by downstream homeowners due to the substantially decreased prospect of flood damage.

RESULTS

Our analysis shows that it is not feasible to install a micro hydropower plant at the designated site due to the topographical characteristics of the creek basin. This site is what is often described as a “flashy” site: it experiences periods of very high flow as well as periods with extremely low water flow. This type of site is very difficult to retrofit with a hydropower system because it has to be capable of handling both extremes, and these very high periods can cause damage to the micro hydropower turbine. With the existing infrastructure, there is also not enough vertical “head”; typically, there needs to be a 2:1 ratio (one vertical foot drop for every two horizontal feet); at the proposed site, there is a 50 foot drop over 2,000 feet (40:1). The analysis suggests that a

micro hydropower facility would not be cost effective with respect to electricity savings, especially once we consider that the university in our case study already pays a very low price for electricity (around 6¢/kWhr). Thus, from the perspective of the college, there is no incentive to shift away from conventional electricity because the infrastructure costs are very high and far outweigh the potential electricity savings.

However, the use of retention ponds to control flooding would be very beneficial to homeowners and businesses downstream. Once we include these external benefits, the “social” cost-benefit ratio is over 20. This is driven by the money saved by taxpayers, as the road repair costs (around \$93,000 per year on average) would be avoided. Table IV of the Appendix shows the social benefit and cost estimates used in this calculation. In this table, we assume that operating benefits are calculated up until Year 50, the estimated life span of the turbine. To save space, only the first five years are displayed.

It is easy to list other intangible benefits associated with the project, but in practice they are difficult, if not impossible, to measure. For example, the school could use the micro hydropower site to enhance the learning environment of students studying hydrology. The school could also use it in admissions tours as an example of how the school is reducing its carbon footprint, perhaps attracting some prospective students.

Of course, the question of who will pay for the retention ponds remains. In a Coasian-type solution (Coase 1960), it may be worthwhile for the town and city of our case study to finance some or all of the costs of constructing retention ponds since this cost would be much less than the they would spend on repairing roads and other damaged public infrastructure. Since many of the benefits of flood control do impact the town and city and would not provide direct benefits to the university itself, this may be something the separate entities would consider negotiating if the aim is economic efficiency. Of course, if the college provides funding, they will build the asset of goodwill with the town, the city and downstream residents.

APPLICATION OF THE TRIPLE BOTTOM LINE

TBL has been in place for over 25 years and is a system of reviews and evaluations of the social, environmental and financial performance of an organization. TBL is also referred to as the 3P’s, which stand for People, Planet and Profits. This approach aims to provide a clearer picture of the overall health and stability of an organization. We apply the TBL framework to analyze the hydro power project on campus. A key challenge, as stated by Slaper and Hall (2011): “The trick isn’t defining TBL. The trick is measuring it.”

People: The ordering of the 3P’s is intentional. Once the student has identified the problem, moving toward a solution first requires that the stakeholders are identified. Here, the key stakeholders are: the downstream residents and businesses that incur damages from runoff and flooding; the town and city taxpayers of our case study, who are ultimately responsible for covering the costs of the road repairs and other clean-up costs due to flood damage; the

institution, which will incur the construction and maintenance cost of the dry ponds and hydro facility, but will benefit from lower energy costs. The student identified these as the measurable costs/benefits to be acquired for the analysis, but as noted above, the project will have intangible value, as the facility could be utilized in certain courses or as a showpiece on campus tours. Since these values are not easily measured, they are not included in the analysis. Additionally, as noted above, the analysis does not include costs to homeowners from flood damage.

Planet: The process of installing a micro hydropower plant involves re-routing water from the creek through a series of retention ponds and into a turbine house where the flow of water would turn mechanical energy into electrical energy. Once converted into electrical energy it is back-fed into the electricity grid for the campus, thus supplying the college with carbon-free energy. Furthermore, resources are conserved by the city and town if road repairs do not need to be done as frequently.

Profits: In applying TBL, corporations shift their focus of value to the stakeholder, not just the stockholder. This is an important shift as it suggests profits be earned but not at the expense of People or Planet. Accountants can assist their clients in preparing sustainability reports, disclosure documents, and designations on the Dow Jones and Global Reporting Initiative. Measures of success and assessments are challenging because there are tangible as well as intangible assets. Furthermore, there are social benefits to consider. In the scenario described here, we determined that it was not cost effective from the college's perspective to install and operate the hydro plant. However, from a social perspective, the installation of retention ponds would be cost effective as they would be able to manage the flow of the water during the high and damaging flow periods, thus reducing damages downstream. As stated by Bremser (2014), professional accountants need to be aware of the entire picture of their client to audit effectively. Historically, an audit is designed to have effective financial measurement procedures. Under the TBL umbrella, the audit and the auditor must be prepared to address the needs of society and the impact on the environment as well as disclose shortcomings and reinforce transparency.

CONCLUSION

This project is an example of a manageable interdisciplinary undergraduate project based on an actual localized problem (not a textbook case) that can be completed in one semester. The project crosses many academic disciplines, including accounting, atmospheric sciences, environmental economics, and business management. Although this was primarily an academic exercise that was neither commissioned nor undertaken by the College, the results of the project were provided to the facilities management team for consideration.

The results show that when only private costs/benefits are taken into account, the micro hydro project does not seem worth undertaking. However, once the TBL approach is applied and social costs/benefits are used in the analysis, the project has a much greater value. We approached this as two-phase

project: the creation of retention ponds, followed by the installation of a micro hydro plant downstream. As discussed above, the installation of the micro hydro plant will not be implemented based on the cost-benefit analysis, as the projected costs far outweigh the projected benefits. However, the projected benefits of building retention ponds to reclaim water far outweighs the projected costs. Thus, the TBL analysis suggests that serious consideration be given to the construction of retention ponds.

In conclusion, we feel PBL promotes a quality education avenue which supports and encourages strategic and critical thinking, problem solving skills, as well as demonstrated enhancements to the students' communication and research abilities. Additionally, TBL fits well within the PRME framework: the SDGs to which our project links include Affordable and Clean Energy; Industry, Innovation, and Infrastructure; Sustainable Cities and Communities; and Climate Action. For schools aiming to fulfill their obligations under commitments such as PRME, or to increase their sustainability profile more generally through the promotion of service learning and community engagement, the project described here provides guidance. We advocate for more projects of this type, and their presentation at student research conferences or showcases. We believe that this will not only lead to improved analytical and communication skills, but also to more ethical decision-making by our graduates as they embark on their careers.

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APPENDIX 1: PROJECT STATISTICS

Note: Complete project statistics are available upon request charlene.foley-deno@oneonta.edu

TABLE I. Input Data

Equipment cost	\$ 8,000.00
Penstock Costs/foot	\$ 8,000.00
Valves and Fittings	\$ 1,500.00
Installation Costs	\$ 8,400.00
General Design and Permitting	\$ 2,000.00
Maintenance Cost/Year	\$ 837.00
Retention Pond Costs	\$ 88,456.84
Retention Pond Maintenance Cost	\$ 950.00
Economic Life	\$ 15.00
Salvage Value	\$ -
Tax Rate	20%
Cost of Capital	10%
kWh Produced	100
Cost per kWh	\$ 0.06
Flooding Damage Costs Prevented	\$ 93,080.34
Inflation rate	2%

TABLE II. Retention Pond Costs

Size (acre-ft)	Cost (\$2000/acre-ft)
23.224	46,448.00
9.239	18,478.00
11.766	23,532.00
Total	\$88,458.00

TABLE III. Annual Depreciation Expense

Year	%	Basis	Depreciation	Book Value
1	0.05	\$27,900 .00	\$1,395. 00	\$26,505 .00
2	0.095	\$27,900 .00	\$2,650. 50	\$23,854 .50
3	0.085 5	\$27,900 .00	\$2,385. 45	\$21,469 .05
4	0.077	\$27,900 .00	\$2,148. 30	\$19,320 .75
5	0.069 3	\$27,900 .00	\$1,933. 47	\$17,387 .28
6	0.062 3	\$27,900 .00	\$1,738. 17	\$15,649 .11
7	0.059	\$27,900 .00	\$1,646. 10	\$14,003 .01
8	0.059	\$27,900 .00	\$1,646. 10	\$12,356 .91
9	0.059 1	\$27,900 .00	\$1,648. 89	\$10,708 .02
10	0.059	\$27,900 .00	\$1,646. 10	\$9,061. 92
11	0.059 1	\$27,900 .00	\$1,648. 89	\$7,413. 03
12	0.059	\$27,900 .00	\$1,646. 10	\$5,766. 93
13	0.059 1	\$27,900 .00	\$1,648. 89	\$4,118. 04
14	0.059	\$27,900 .00	\$1,646. 10	\$2,471. 94
15	0.059 1	\$27,900 .00	\$1,648. 89	\$823.05
16	0.029 5	\$27,900 .00	\$823.0 5	\$0.00

EXPATRIATE MANAGEMENT: THE CASE OF EXPATRIATE SPOUSE ADJUSTMENT IN SHANGHAI

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ABSTRACT

Expatriate spouse adjustment is a crucial contributing factor to the success of expatriate management. Shanghai was chosen to be the site of study as it is one of the most popular locations multinational corporations choose to locate their business. The purpose of this study is twofold. First, it is to present the qualitative findings of expatriate spouses adjusting their lives in Shanghai. Second, based on these findings, propositions are proposed for a future empirical study. A total of 30 expatriate spouses and one housing agent were chosen to be the sample by a snowballing method. Interview and observation were primarily used. The findings are classified into stages starting from moving decision, pre-moving preparation, upon arrival, getting irritated, adjustment, and returning home. Seven propositions regarding the antecedents of spouse adjustment, being classified into three general categories, i.e., individual, contextual, and process were proposed.

Key Words: Expatriate management, spouse adjustment, qualitative, Shanghai

INTRODUCTION

As China economy has been growing rapidly over the past few decades, many multinational companies (MNCs) from all over the world have spotted China as one of their most significant markets. Their operations in China vary from having only sales agents or representative offices, sales subsidiaries, to having manufacturing or full operations, either in the form of joint ventures or wholly-owned subsidiaries. Expatriate managers, which will be called as “expats” throughout this paper, are thus indispensable for those multinationals who want to carry their policies from headquarters and control by their own management team. However, many international assignments are found not successful (Black, Gregersen, & Mendenhall, 1992; Tung, 1981). 16-40% of the international assignments end in failure and the cost of failure is tremendous (Lin, Lu, & Lin, 2012). In China, Shanghai is one of the most popular locations MNCs choose to locate their business. Shanghai is thus chosen to be the site of study in this paper for expatriate management. And it is widely known that not only western people but also Asian people generally find that acculturating in China is not easy. Using China, and Shanghai in particular, as a scope of study would be very meaningful in studying an expatriation process.

An effective expatriation process must include expat spouses and family members into consideration. Managing expats themselves is not a difficult task for MNCs as expats are normally busy with their new jobs. Rather, more problems arise among spouses. This is due to the fact that expats spend most of their time at work which is confined in a similar organization structure at home. Children also spend most of their time in school and have a lot of school activities. On the contrary, the spouses have to spend most of their time by themselves and are immersed in genuine local culture than others in the family. A bigger problem of expat management is thus mainly from the spouse. It was found that many expats prematurely return home due to spouses being unhappy with the host environment (Punnett, 1997). Black and Stephens (1989) discovered that the adjustment of the spouse is highly correlated to the adjustment of the expat. They also found that the adjustment of the spouse and the expat are positively related to the expat's intention to stay in the international assignment. Punnett (1997) stated that there are many studies indicating that spouses are of particular importance to the success of the expatriation process, but, unfortunately, there is not much research looking at the expatriation process from the spouse angle. Family-spouse adjustment was considered as only one non-work factor in a comprehensive model of international adjustment by Black, Mendenhall, and Oddou (1991). Spouse adjustment will be examined thoroughly in this study.

The purpose of this paper is twofold. First, it is to present the qualitative findings of expat spouses adjusting their life in Shanghai through different stages of expatriation. Second, it is to suggest propositions, based on these qualitative findings, for a future empirical study.

LITERATURE REVIEW

Spouse adjustment is very important for the adjustment of the expats. It is one major contributing factor in the success or the failure of an expat. Even in the Indian case which is known to be as a male-dominant culture, Gupta, Banerjee, and Gaur (2012) in their study of Indian expats found that in the seven cases when the expats returned to home country without finishing their assignment, it was the spouse with inability to cope with a foreign culture which provoked such decisions.

Black and Gregersen (1991a) claimed that their study was the first to systematically examine the antecedents of spouse cross-cultural interaction adjustment with host country nationals and those of spouse general adjustment. Antecedents of spouse interaction adjustment were firms' seeking the spouse' opinion about the international assignment, the spouse' self-initiated pre-departure training, and social support from family and host country's nationals during the assignment. For spouse general adjustment, firms' seeking the spouse' opinion about the assignment and standard of living have a positive relationship with spouse general adjustment. Firm-provided training and cultural novelty, on the other hand, have negative relationships with spouse general adjustment.

Spouses can have lots of influence over expats through various stages of expatriation process. Since before accepting an international assignment, Konopaske, Robie, and Ivancevich (2005) found that spouse attitudes often influence expat willingness to relocate internationally. Brett and Stroh (1995)

investigated a sample of 405 American expats and their spouses. They found an interesting result that although there is correlation between expats' and spouses' intentions to relocate internationally, spouses' intentions about international relocation affected expats' intentions but not vice versa. This indicates the dependence of expats' on spouse' views. Spouses should then be an unforgotten factor in expat's selection process.

And as spouses progress through the stages of expatriation, their needs change accordingly (Punnett, 1997). Starting from pre-assignment period, spouse interviews, on-site visit, and language and cultural training are spouse major needs. While in early assignment, spouses normally need assistance with their daily activities, administrative support and networking assistance for their employment, and other advices for culture shock. Trailing spouses who have to leave jobs at home need to be handled with more care as they are less willing to relocate initially. During late assignment, while expats and spouses already adjusted to their new environment, maintaining contacts with the home country becomes important for both of them. In the post-assignment stage, assistance reestablishing home and family life and support in dealing with culture shock in their reentry are needed (Punnett, 1997).

Spouse and family cross-cultural adjustment can positively impact the expat's overall cross-cultural adjustment and vice versa (Caligiuri, Hyland, Joshi, & Bross, 1998). This phenomenon is called a crossover effect. Caligiuri, et al. (1998) found the relationship between family characteristics (family support, family communication, and family adaptability) and expats' work adjustment. Family cross-cultural adjustment was also found to mediate the effect of family characteristics and expats' work adjustment.

This crossover effect can be explained by a family systems theory which suggests that an equilibrium exists among the family members and that each family member can affect the psychological state of other family members. If there is a pressure or a shock either outside or inside the family, the equilibrium of the family will be disturbed (Brett & Stroh, 1995). Spillover theory (Crouter, 1984; Kelly & Voydanoff, 1985) also indicates that people carry their emotions and attitudes from their work life into their home life and vice versa. Therefore, if spouses are happy, expats will be happy and will carry over the positive emotions and attitudes to work.

Social identity theory and identity disruption theory are among theories explaining the spouse adjustment (Shaffer & Harrison, 2001). An identity disruption theory by Burke (1991) proposes that disruptions in the identity process occur when an individual enters a new culture or assume a significant new role. The degree of these disruptions varies. Spouse adjustment is considered as a process of reformulating one's identity in a new environment. Shaffer and Harrison (2001) classified spouse identity into three types, i.e., personal identity, social identity, and situational identity. These identities act as antecedents of spouse adjustment, which can result in either negative or positive outcome. For personal identity as individual antecedents, host-country language fluency and self-efficacy were found of significance in spouse adjustment. For social identity

as interpersonal relationship antecedents, Shaffer and Harrison (2001) found that having preschool-age children would help spouses retain their social identities and help them adjust to a new environment more easily. Takeuchi, Lepak, Marinova, and Yun (2007) examined the effect of parental demands in a more complicated manner with Japanese expats and spouses. It was found that parental demands exhibit a nonlinear U-shaped curvilinear effect on only spouse general adjustment. No significant effect was found for expat general adjustment. This is probably due to a high masculine culture of Japanese in which gender roles are highly differentiated. And lastly, for situational identity, lower levels of cultural novelty and more favorable living conditions were positively related with spouse adjustment (Shaffer & Harrison, 2001). A nonlinear, S-shaped curvilinear effect of spouse-perceived culture novelty on both spouse and expat general adjustment was found in Takeuchi et al.'s (2007) study of Japanese expats and spouses.

During post-assignment period, repatriation stage is often neglected by many companies as it is assumed that expats and their families can easily acculturate to their home culture. In fact, this stage is critical and must be managed with care since there is evidence that many returnees, about 25%, leave their companies upon returning home. This is such a big loss of an investment. Black and Gregersen (1991b) found that age, total time overseas, social status, and housing conditions compared between those in home and host country were related to repatriation adjustment for both expats and spouses. The older the expats and spouses, the more likely they can readjust to their home cultures. The longer time spent overseas, the more difficult it is for repatriation adjustment. A downward shift in social status and poorer housing conditions in home country also lead to negative repatriation adjustment.

RESEARCH METHODOLOGY

When talking about expats, most people tend to stereotype them as white males. In fact, there are not only white or Caucasian people on the global stage. Many Asian and other nationalities are increasingly joining the crew as well. In addition, there are more and more women who have turned to be global managers. However, in this study, when the term 'expats' is used, it covers only males meaning that expat spouses who are the focus of this study are the wives of those expats.

This study applied the grounded theory method in investigating the relocation process adjustment of the expat spouses. Following the guideline by Corbin and Strauss (1990) helps understand the phenomenon without bias or being influenced by previous studies. An interview manual with basic questions, such as involvement in moving decision, pre-moving preparation, company support upon arrival and during assignment, and repatriation process, was developed. These basic questions help structure the responses in a meaningful manner. Observation methods are also used to shed more light on the findings.

The sampling started from locating the individuals accompanying their partners to Shanghai in one yoga and Pilates studio that orients to expat clients. The snowball sampling method was then applied. A total of 30 expat spouses, all female, from 13 nationalities (2 from the U.S., 5 from Germany, 1 from the

Netherlands, 1 from Austria, 5 from France, 1 from Finland, 2 from Spain, 1 from Sweden, 1 from Italy, 3 from Japan, 2 from Malaysia, 3 from Hong Kong, 1 from Singapore, 1 from Taiwan, and 1 from Thailand) and one housing agent in Shanghai were our sample.

RESULTS AND DISCUSSION

The findings are classified into stages starting from moving decision, pre-moving preparation, upon arrival, getting irritated, adjustment, and returning home. Some quotes are presented in order to clarify some issues.

Moving Decision

All spouses in the sample identified that the companies do respect spouse decisions whether to move or not to move. The companies generally give around 1-3 weeks for expats to make decision with their spouses. And there is a case that the boss of an expat invited an expat spouse for dinner. This is simply to give a brief information about a new role of an expat and his experience living abroad.

Three major concerns from the spouse point of view were identified from the interview. *First*, it's about a spouse herself. Working spouses generally have concerns more than housewife spouses. This is the biggest issue but all companies in the sample do not take this into account and just leave it for the spouses to handle with their current jobs and/or finding jobs abroad. There are two German spouses taking one year leave without pay from their companies to follow their husbands to Shanghai. *Second*, the concern is about their children. Spouses who are expected soon are those who concern most. And families with the kids in the young age (0-17 years) are the second most worried of moving. Those with kids who are already in the university or already work are the luckiest ones as the kids' issue is less of their concerns. These families tend to leave their kids at their home country as the kids are mature enough to take care of themselves and it's also not easy to change university or find a new work overseas. *Third*, it's the concern about aging or ailing parents. An Austrian spouse said that "Both of my parents are very ill, my father has a hip bone transplant and my mother was just found a cancer. Though I have one brother living in the same town as my parents but he never gave them a visit or even a phone call. These years, I have to go back to visit them about three to four times a year. Luckily, I don't have kids. Last month, I went home for two weeks. Both of my parents had to go to the hospital. I sent the mother first and after I came back my father was hospitalized. I feel so bad but I can't stay longer than two weeks 'coz I have to take care of my husband and can't leave my (Pilates) students too long". As many countries especially European countries and Japan are entering aging society, the third concern seems to increasingly intensify.

Pre-Moving Preparation

There are two most important preparations before moving abroad, i.e., house searching and school selection. Since Shanghai is very big and has lots of housing choices for rent with wide price range and various styles and quality, all companies in the sample have used agents in assisting expats' families in house searching. The way of doing business in China is also complicated and different from that in many countries. Thus, most MNCs do not bother doing this task by

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themselves. It's much easier to have an agent negotiating with a landlord. Most agents also provide information about international schools. All spouses who have kids mentioned that they chose schools first before choosing houses. The main criteria of choosing schools are quality, curriculum, and most importantly the location which is not far from expats' office. Then, houses would be chosen later. Location which is not far from school and office is a main qualification.

All cases had chance to visit Shanghai for house and school searching before moving took place. Both husband and wife came together for this pre-moving preparation. The companies paid only one trip. There are only few cases that the companies paid for more than one trip since the expats were nearby in other Asian countries.

This step was found to be the most important one for expatriate management. There were many families in the interview who were not satisfied with their houses and schools. Although they can move out or change schools, it's quite troublesome and takes lots of energy both physically and mentally. Many families thus ended up at the same place and were not that happy.

There is one special case that an American expat works in Chongqing but his family lives in Shanghai. His wife said that "because international schools in Chongqing are not as well developed as ones in Shanghai, we asked the company whether they will support us in living in two locations or not. Luckily, my husband is a key engineer. The company planned to build a manufacturing site in China. And they really need him. So finally the company agreed on what we had asked for. But now my daughter is grown up, almost 17. We are thinking of moving back to the U.S. and leave my husband alone. We haven't decided yet though".

Upon Arrival

All spouses interviewed except one from Japan and one from Thailand mentioned that their families had to stay in the hotel for the first few weeks until their shipments arrived. After their shipments arrived, they thus moved to the chosen houses/apartments. A couple from Japan decided to live in a fully-furnished apartment, so they didn't have to wait for the shipments. Everything was loaded by the airplane. A couple from Thailand has a dog with them and they didn't want to leave it alone. They thus directly checked in to the house once arrived with the dog. And they had to live in an empty house for a few weeks until the shipment arrived Shanghai.

It can be claimed that this stage is the most exciting and the most hectic one for expat families. This is the first stage in culture shock which is called "Euphoria". Either staying in the hotel or moving directly to the house has the same impact on excitement. A Thai couple, who chose to live in a house, faced more difficulty than a Japanese couple, who chose to live in an apartment. A Thai spouse mentioned in an interview that "we flew from Bangkok to Shanghai with one dog and we directly checked in the house we chose a month before. But when we moved in, it was one of the coldest days of that year. The heating system in the house is not that good 'coz it's an old house. The next day we hurried to buy a few portable heaters which helped us a lot. The agent forgot to give us a key card and we had to use the garage door in the basement to go in and out for a few

days. The exterior lights did not work. The hot water didn't work in the master bathroom. But after having a repair man over, he just told us that instead of turning the tab to the left, we had to turn to the right to get hot water. Oh! How could we know?"

Language is a big problem in this stage except two spouses from Malaysia, one from Singapore, and one from Taiwan who can speak Mandarin. All spouses except these four ladies stated that they had a problem communicating with the repair men. Even though they contacted the agent to bring in the repair guys but the agent sometimes didn't come along with them. One German spouse said that "I explained in English and he spoke to me in Chinese. But we could communicate at the end after using so many hand gestures. Thanks to the company that provides us a car with the driver although he could understand English only 'yes', 'no', and 'ok'. Our Ayi (maid) who works part-time is really nice but she knows no English. I had to draw her lots of pictures to let her know what I wanted her to do in our house. After our first week moving in to the house, we realized that we need to start learning Mandarin soon. Otherwise we couldn't survive. Luckily, Shanghai is very cosmopolitan. And the area we live is a popular living area for expats. About 90% of restaurants in our neighborhood have English menus".

Getting Irritated

Other than language problem they faced since moving in, a change in living environments also caused a lot of stress to the spouses interviewed. Because China has a bad reputation of food contamination, all spouses interviewed have this issue as their primary concern. Expat families that have kids younger than 4 years old found this very irritating because of melamine milk powder issue happening a few years ago.

Another big issue is about physical environments. China now encounters a big problem of air pollution. In the past, only Beijing had this problem. But now Shanghai is no exception. The housing agent told in the interview that 'the housing business has dropped a lot because now not many expats especially those who have kids do not want to move to Shanghai. And if they have to come, they will not move families with them. So, the landlord of big houses have hard time to find the tenants. Many Japanese expats had sent their families home and then moved to smaller apartments".

Loneliness is a problem of all spouses interviewed. Although ones who have kids are busier, they still have loneliness problem. However, they can make more friends than those who do not have kids as they have more chance to meet other expat families at school. At this stage, those who have kids tend to get more irritated than no-child spouses since they have to encounter many kids' issues. Every spouse has tried to find out what they could do to lessen this loneliness, which will be explained in the next section.

A major cause of being lonely for spouses who used to work before is that they are jobless here. Holding spouse visa means that they can't work unless they can find a job by themselves. And that means the spouses have to apply their own visa.

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Adjustment

After getting irritated for some period of time, which is ranged from 3-6 months, spouses can adjust to their new living environments though some concerns remain. All spouses interviewed are already in the adjustment period. One German spouse, who was a lawyer trained, turned herself to be a German teacher. One Austrian spouse, who was also a lawyer trained, turned herself to be a Pilates teacher. One Japanese spouse, who used to work in a company in Japan before, told me that “I started practicing yoga in Hong Kong ten years ago when my husband was stationed there. I just wanted to find something to do and I walked in a Yoga studio one day by chance. But after ten years of practicing and being trained as a teacher, I’m now a full-time yoga teacher”. And three more spouses, one from Spain, one from Sweden, and one from Italy, also joined the Yoga teacher training course in Shanghai. All three of them now have students coming over to their houses to practice Yoga. One Hong Kong spouse makes some small jewelry to sell online. One German lady who is fond of making artwork just kills her time by making various handicrafts such as aprons, photo frames and sells them in art markets and through friends’ network. In conclusion, even though most of them are still full-time housewives, they have found their favorite hobbies or activities to fill up their lives.

Among all spouses interviewed, there are five French that have full-time jobs. Four of them work in French companies and one of them is a freelance. One Taiwanese spouse who is married with a Singaporean expat also has a part-time job in her friend’s company.

Shanghai is considered as an expat-friendly city. There is abundance of activities for expat families. Shanghai Community Center is one example. They hold many activities for expats to join, such as short trips to places nearby Shanghai, cooking classes, and charity project. Expats can easily find out what’s going on in Shanghai from sources such as Timeout Shanghai, and City Weekend which are published in free copy magazines, websites, and can be used via apps as well.

Returning Home

This study does not cover the sample of expat spouses who already returned home. However, there were three cases in the sample that their husbands’ contracts were due and had to return home or move to other countries. They in fact denied the company’s offers and decided to stay in China. All three are German nationality. Two cases did not want to return home and found the opportunity to run their own businesses in Shanghai. Another case reasoned that their kid is enjoying an international school in Shanghai in which she has only another two more years to go to school. Fortunately, an expat in the third case got another job offer from a German company.

PROPOSITIONS

Based on the interview and observation findings, antecedents of spouse adjustment can be classified into three general categories, i.e., individual, contextual, and process.

Individual

Proposition 1: Spouse' change in career has a negative relationship with spouse cross-cultural adjustment.

Proposition 2: Spouse responsibility in taking care of parents has a negative relationship with spouse cross-cultural adjustment.

Proposition 3: Spouse host country language fluency has a positive relationship with spouse cross-cultural adjustment.

Contextual

Proposition 4: Spouse satisfaction with housing quality in a host country has a positive relationship with spouse cross-cultural adjustment.

Proposition 5: Spouse favorability of living conditions has a positive relationship with spouse cross-cultural adjustment.

Process

Proposition 6: Spouse involvement in decision making on an international assignment has a positive relationship with spouse cross-cultural adjustment.

Proposition 7: Spouse pre-moving visit has a positive relationship with spouse cross-cultural adjustment.

CONCLUSIONS

This qualitative study is more advantageous than normal quantitative studies in understanding the expat spouse adjustment to a host country environment. It provides a more complete picture in viewing the whole process of cross-cultural adjustment. Independent variables are classified neatly into three types: individual, contextual, and process.

The propositions are given at the end for a future research. A survey method with quantitative measures is suggested to confirm these propositions. For the dependent variable, spouse cross-cultural adjustment, two complementary measures are recommended. *First*, expat spouses are asked to identify the number of months that has taken them to get used to living in a new environment. In other words, the amount of time that they start feeling settled. *Second*, a measurement by Black & Stephens (1989: 542) in which spouses are asked to indicate on a 7 point Likert scale how unadjusted or adjusted they were to living conditions in general, housing conditions, food, shopping, cost of living, entertainment/recreation facilities and opportunities, health care facilities, socializing with host nationals, and interacting with host nationals on a day-to-day basis

For practical implication, an MNC may consider the individual characteristics of a spouse in an expat initial selection process. Having a spouse involve in relocation decision and process (e.g., house and school selection) is proved to be essential for spouse cross-cultural adjustment. If a company has no choice to avoid a spouse who is likely to have a cross-cultural adjustment problem, a company must provide policies to facilitate spouse cross-cultural adjustment. As shown that individual level characteristics of spouses do matter, companies may consider tailor-made policies for spouses with different attributes. For example, family-friendly policies for a dual-career family, generous home leave policies for

the whole expat family so they can visit the parents at home more often, and pre-departure and in-country language training not only for an expat but also for a spouse (Andreason, 2008). Happy spouses not only have crossover effect to the expats but they can also help other expat families settle down more easily.

Limitations of this study are twofold. *First*, the trailing spouses in the sample are female only. In fact, nowadays women expats are becoming more common. It is increasingly the case that men accompany their wives on international assignments. Male spouses may need different and/or substantial support in adjusting to the expat spouse life. It is thus recommended that the cross-cultural adjustment process of male spouses be investigated in a future study. *Second*, the study was carried only in Shanghai. The variety of host locations may yield other stories of spouse adjustment. These limitations should thus be taken into consideration in future studies.

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ASSURING SCHOOL SAFETY FROM VIOLENCE FOR EVERYONE

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Abstract

This study focuses on school safety as a priority from all parts of the American society that includes the Federal/State /Local governments, school personnel, students/teachers, and the school community. Specifically, we analyze information from various sources to find ways by which different groups of individuals can help provide more secure and safe learning environments for school personnel, including school district leaders, teachers, administrators, students, staff members, parents, and, state and national agencies, and the community at large. Our analysis reveals three sources of support for safety in our schools: government recommended guidelines and ideas; sources, such as articles, books, webinars; and teaching that is inclusive of problem solving strategies, teaching tolerance for all, and school /school district precautions.

Keywords: safety, responsibility, tolerance, prevention

Introduction

Violence in schools has become a national concern due to the number of shootings that have taken place and children's lives lost by individuals who have shown no mercy and no regret for their actions. Violence comes in different forms at school settings and includes fights, bullying, verbal abuse, cyberbullying, emotional-psychological, harassment, and sexual violence, gang violence, and bringing weapons to school. The focus of this paper is on school shootings because these are the types of incidents that cause significantly more anxiety about safety in schools; and the type of happenings reported in newspapers, television, and other media. It is a phenomenon that terrorizes all people because there is often little or no protection when someone starts shooting.

Purpose and Methodology

Based on available literature, a survey is designed to elicit pertinent information from a section of policy makers who have a vested interest in finding ways to prevent violence. Two pertinent questions were asked in the survey:

1. Do you feel teachers should be armed in order to protect students from an active shooter?
2. How well do you feel the schools you are familiar with are prepared to deal with violent situations?

In order to engage in an in-depth discussion about the above two pertinent issues, the authors limited the number of respondents to 10. Because of the sensitive nature of the questions, the identity of the respondents is protected. However, their opinions and recommendations are very important in order to obtain a variety of ideas and be able to select, organize, and plan courses of action. Additionally, the responses provide the opinion of those individuals as to what is

desired and needed in our schools for prevention of prevention. The results of the opinion survey along with recommendations for dealing with violence in provided in the section following the Review of Literature.

REVIEW OF THE LITERATURE

According to the Washington Post, since the “Columbine in 1999, more than 187,000 students attending at least 193 primary or secondary schools have experienced a shooting” at their schools. This is a significant and overwhelming number of students who go to school as a safe haven from violence. The Washington Post headline reports that “More than 220,000 students have experienced gun violence at school since Columbine” (Cox, Rich, Chiu, Muyskens, & Ulmanu, 2018).

Further reporting from the Washington Post shows that 62.6 percent of the students exposed to gun violence at school since 1999 were children of color.” Altogether, the Washington Post “found an average of 10 school shootings per year since Columbine, with a low of five in 2002 and a high of 15 in 2014. Less than three months into 2018, there have been 11 shootings, already making this year among the worst on record.”

Statistics, however, show that gun violence is not the most prevalent mode of violence. Out of 1.1 million violence related situations reported by schools to the U.S. Education Department for the 2015-2016 school year, about 94percent were related to fights and other physical incidents that did not involve the use of guns (Keierleber, 2018). In incidents that involved guns, there were 235 such incidents that made up only “one-fifth of one percent of schools.”

In 2018, out of thirteen school gun incidents, nine of them involved a student who attended the school where the incident happened. This may suggest that school shooters are students who have issues with other students at the facility and they turn to guns to settle their differences. In this same source, Nadine Connell from the University of Texas says that “Schools are not very often attacked by strangers ...” but by their own students (<https://www.the74million.org/guns-at-school-after-41-deaths-74-injuries-in-2018-what-weve-learned-from-tracking-six-months-of-school-shootings/>).

According to Katy McWhirter (2019), public schools in the 2013-2014 school year reported 757,000 incidents of violence. As stated in the McWhirter report, violence prone students include those who have mental health issues, have a lack of coping skills, and feel a strong disconnect from other students and adults at the school. Brian Moore, an expert on school climate in the department of Education in Delaware suggests that schools pay attention to a student’s withdrawal from normal school activities as one significant factor for concern and intervention. A second important factor is for school personnel or parents to be aware of a student’s postings on the internet supporting violence and shootings.

There has been an outcry from the public for gun control legislation with 94 percent of respondents to a poll from Quinnipiac University supporting required background checks for all, and yet Congress has not produced any new legislation since the Sandy Hook Elementary School shootings five years ago (Delkic, 2017). In the same report, it points out that “more than 200 state-level laws have passed” during this same period.

As shootings have continued in schools and other places, Congress has failed to pass any new legislation. Proposed legislations by different senators and representatives since 2013 have not passed due to the influence of the NRA (National Rifle Association) (<https://www.newsweek.com/sandy-hook-anniversary-gun-control-laws-failed-747415>).

In an article in the New York Times (Fe, 23, 2018), the question is asked about the effect of all gun laws passed in the past by state and national legislators. The question asks, “But to what effect?” Since it’s difficult to link declines in crime or gun violence to any specific law, given the limited scope and loopholes in each one, the NRA has successfully lobbied any legislation that limits the sales of guns or restricts the right of individuals to buy guns of their choice (<https://www.nytimes.com/2018/02/23/us/politics/fact-check-mass-shootings-gun-laws.html>).

In a white paper by Motorola Solutions (2015), it is stated that “Ninety-nine percent of educators say creating a safe, secure environment for students and staff is their top priority.” In order for schools to get the funding for a more secure and safe environment, there is money available from local and state sources for which schools can submit safety plans and be able to purchase the equipment that they need.

The white paper further highlights that school safety should go beyond the classrooms and their hallways and extend to protection from weather events and other disasters. The public and parents in particular would welcome safety features that protect their children from any type of danger.

The recommendations from Motorola Solutions include two way radios for instant communications by administrators and other personnel. Radios can be used to connect all people involved with safety in schools and should include instant communications with first responders, other community organizations, and neighboring school districts. The importance of these devices lie in the fact that they can be installed anywhere and be able to connect with smartphones, digital tablets, and other tech equipment for instant communications which can prevent or minimize any type of violence or crisis situation. The bottom line is that “Diverse staff and different locations are connected with integrated radio communications” to make school safety a sweeping priority.

As stated by Judy Riffle (March 13, 2018), there is one program that is available to help schools get grants to provide for the safety of schools. These funds are available through the Comprehensive School Safety Initiative (2018) grant which was available as of May 2, 2018. There is a list of areas of interest for which funding can be provided. The list includes areas such as school shootings, money for school Resource Officers, Bullying and Cyberbullying Intervention and Prevention. There are five main categories under which funding grants can be acquired by schools.

Peterson and Skiba (2014) recommend the use of “school climate” as a way of preventing violence and other misbehaviors at the school environment. School climate is described as the “feelings that students and others at a school site have about the school’s environment over a

period of time (p. 1). These two authors emphasize the findings of other researchers who use such ideas as creating “caring schools”, “caring environments”, and “building a sense of community” (Noddings, 1992; Sergiovanni, 1994; Whelage, Rutter, Smith, Lesko, & Fernandez, 1989). Additional recommendations by these two authors, include the implementation of character education for youth in order to train them in such skills as collaboration and cooperation with others; learning moral values that include responsibility, self-worth for self and others, trusting relationships, tolerance for differing points of view, treating others with respect, using good manners, and valuing their school and education opportunities. For character education, it is recommended that the seven virtues expounded by Ernest L. Boyer, president of the Carnegie Foundation (1995). The seven virtues include honesty, respect, compassion, responsibility self-discipline, perseverance, and giving. These ideas have been around for some time and there is no evidence that they are effectively used with our youth to make a real difference.

Peer mediation is another approach recommended by Peterson and Skiba (2014) as a way of having peers do the mediation through conflict resolution steps. This approach has been in practice in many schools and has shown some level of success in helping students to avoid violence and learn how to use conflict resolution steps to resolve issues that can lead to violence. In a study using mainly African-American students in the Baltimore school district, the researchers (Johnson, Burke, & Gielen) found that the school’s environment influenced students’ behaviors and attitudes in reference to using violence as a means for settling conflicts. “The review of the literature found evidence that both the school and physical environment influence the amount of violence that happens at school” (Johnson, Burke, & Gielen). The recommendation from this study is for the school’s climate to be changed in order to effectively affect students’ attitudes and reduce violence. The first step in affecting change is to get input from students because students are in a better place to recommend changes that will satisfy them and provide officials with ideas and strategies that are workable for all concerned. The study’s resulting finding was the students “actions and expectations for behavior were the characteristics most responsible for the initiation of school violence.” A second finding was “emphasized the importance of having school security that cared about them and had their best interests at heart.”

Survey Results

1. Do you feel teachers should be armed in order to protect students from an active shooter?

Yes 0. No 10

2. How well do you feel the schools you are familiar with are prepared to deal with violent situations?

Somewhat well-prepared: 4. Well-prepared: 6

The authors’ discussions with the respondents resulted in a set of recommendations for school personnel, parents and students which are summarized below.

1. Parents should talk to their children about school violence, drugs, drinking and other topics of interest to them. Parents should listen to their children and provide information and support.
2. Children need to have clear rules to follow and know the limits of what they can and can’t do. It is important for parents to make sure that they explain the purpose behind

the rules that they set for their children and must follow through consistently in enforcing the rules.

3. Parents should be alert for any changes in their children's behavior, attitudes, and school work. If children fall behind on their work or stop doing activities that they normally enjoyed, parents should take action to find out what is happening.
4. Parents have a responsibility to their children and need to step in and intervene when issues arise by providing support and working with school officials/teachers to help their children.
5. Parents should be visible in the school environment whether participating in school activities, being members of the school's PTA, attending social events with their children, and checking in with the teachers to make sure their children were doing fine.
6. Parents can be partners in any violence prevention program that the school has and help the school's teachers, administrators, and staff to come up with good ideas to help students stay away from behaviors that lead to violence.
7. Parents can help to form a bridge between school officials and the community by supporting efforts to have violence prevention forums for open discussions and sharing of ideas.
8. Parents through PTA or specific violence prevention committees can be instrumental in putting together or designing a plan of action to deal with flare ups of violence or crisis situations.
9. Parents should familiarize themselves with building good relations with media and how the media can help with press releases that inform everyone in the community about a variety of situations.
10. Parents should become active in the school district's actions by attending school board meetings and speaking out about what concerns them about school safety. Additionally, parents should be willing to contact legislators at the local, state, and national governments in order to support good efforts to provide prevention measures that will help children stay out of trouble.

The authors also discussed recommendations by NASP (2015) (National Association of School Psychologists) with the respondents who were in agreement with the following list of recommendations.

1. School -community safety partnerships that will allow for accumulation/collection of information from all sources and be able to analyze the information for more effective application to the needs of the school.
2. The members of the safety partnership should conduct a needs assessment to figure out what the needs of the school are. That will allow the members to plan and select intervention programs that are appropriate to the specific school. It is also recommended that connections be made with other schools in different school districts to get any feedback about the programs and interventions selected so that an analysis of the success rate can be evaluated with the idea in mind of finding out how the feedback can allow for strengthening this school's application.
3. The school should organize school crisis response plans to deal with a number of different situations as they arise. It is important for different members participating to know what their roles are in relation to their participation. The plans should be specific to each crisis situation and specific procedures should be spelled out clearly so that everyone understands their roles and responsibilities.
4. A balance in the types of actions to follow in certain situations is important. "Schools cannot be barricaded against all possible harm, especially when it involves gun violence. Whatever plans are instituted must be realistic and include reasonable

- physical security, such as doors being locked, windows shuttered, monitored hallways, some kind of check-in and check-out procedure, availability of telephones in the classroom, and any other technological gadgets that will help to alert authorities at school and the police.
5. There should be a process for evaluating student threats so that appropriate actions can take place for future preventions. Note that all threats do not result in violence but being prepared to deal with the threats will help to alleviate the possibility of violence.
 6. It is important that schools use prevention programs to help students better understand how to resolve their issues without resulting to violence. Prevention programs should require students to participate on ongoing discussions and participation for better inclusion and feeling of belonging.
 7. There should be adequate counseling and mental health services and support for students who need them. School counselors, school psychologists, social workers, police officers, and other mental health personnel should be available to help students with problems work through them. Students need to feel comfortable in seeking out help without being labeled.
 8. It is extremely important for school personnel to help and assist those students who exhibit school behavioral adjustment problems and interventions should be available to help these students early on. Some students go through their early years in school without any assistance and support. It is important for the very young to be helped so that they learn how to cope with their issues as they go up the grade levels.
 9. The above information may be useful for schools but should be reinforced with discussions and drills that will allow students, teachers, administrators and other school personnel to practice what actions to take for any violence related and gun shooting situation so that the damage is minimized and/or prevented.
 10. The NASP includes a table: Essential Considerations When Developing/Conducting Full-Scale Drill in their website: <https://www.nasponline.org/resources-and-publications/resources/school-safety-and-crisis/conducting-crisis-exercises-and-drills>
 11. For additional guidance on what to do in crisis situations, the NASP recommends the Brock et al. website: www.nasponline.org/prepare for the PREPaRE School Crisis Prevention and Intervention Training Curriculum.
 12. The NASP further recommends FEMA's Homeland security Exercise and Evaluation Program (HSEEP) at this website: https://hseep.dhs.gov/1001_HSEEP7.aspx
 13. A Guide for Developing High-Quality School Emergency Plans can be found at FEMA's media library that may be used by schools to set up their own crisis response plans to deal with a variety of situations: https://www.fema.gov/media-library-data/20130726-1922-25045-3850/remsk12_guide.pdf
 14. According to FEMA's Guide, there are three basic options of what students or adults can do when an active shooter event takes place. "You can RUN AWAY from the shooter, seek a place to hide and/or deny the shooter access, or incapacitate the shooter to survive and protect others from harm..." These three options are available to students and staff but they have to decide which option or combination will best protect lives.

The Guide for developing High Quality Emergency Plans (FEMA, 2013) stipulates that when there is an active shooter at the school, students, teachers and others have three options: Run,

Hide, or Fight. No single response is the best course of action because of the situation people find themselves. Because of the dire circumstances, the Guide recommends barricading the room by locking the door, having furniture piled behind the door, or having a barricade device. An added advantage in this age of technology include button apps that allow administrators, teachers and other personnel to alert police, paramedics, firefighters, and school administrators to take quick action to safeguard students' and other individuals' lives in the school environments. Lee Foster, Newberry County Sheriff in South Carolina (Sacramento Bee, September 2018) made available a panic button app that is installed on every teacher's cellphone in order for county personnel to get the message and move to action. Motorola has come up with a number of technology gadgets similarly capable of alerting everyone to a crisis situation at schools.

Conclusion

Our analysis shows there is no one plan that will work for every violence situation at all schools. However, some conclusions can be drawn from the variety of sources of information that include the Federal Government agencies, police guidelines, and school district safety policies. First, schools must make plans for a variety of situations which require a lot of training for students, teachers, administrators, and other staff. To put plans together, schools need to invite all concerned, including students for input and participation in training and during crisis situations.

Second, schools need to adopt prevention curricula that help students understand the different violence situations and how to best respond under difficult situations to help save lives.

Third, schools need to find more effective ways to help students, especially those with behavioral problems, to learn how to cope with their issues and how to reduce their volatility and tendency to argue, fight, or cause harm to others. Schools need to train teachers, aides, counselors, and other adults to learn how to use positive and constructive ways to respond to students' behaviors, both positive and negative ones. Students need to feel wanted, to be safe, and to be respected regardless of their backgrounds, adjustment issues, levels of achievement, language issues, disabilities, learning problems, etc.

Fourth, schools should find more constructive ways to invite and inform parents about the school's programs and how teachers work to help each and every student to be successful in learning. Parents should be partners with schools and have opportunities to interact with teachers, administrators, students, counselors, and school district personnel on an on-going basis in order for better communication and better understanding to take place between the home and the school. If parents are involved, they will be in a good position to support schools and their children for more effective learning outcomes.

Fifth, students should be taught tolerance, understanding, and respect for other students who may come from diverse backgrounds that include differences in languages, cultures, religion, customs, and traditions. When students can find ways to respect/tolerate other students' ways of living, the need for conflict and violence will subside and will not take place.

It should be understood that full participation in support of what happens in and out of school by everyone in the school community is a must if safety concerns can take place without fear and anger which are the precursors to violence. As the African proverb so well states, "It takes a village to educate a child."

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JOURNEY INTO DNV HOSPITAL ACCREDITATION AND THE IMPLEMENTATION OF AN ELECTRONIC CONTRACT MANAGEMENT SYSTEM (ECMS)

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ABSTRACT

In 2013, University Medical Center (UMC) Health System made the decision to transition from The Joint Commission (TJC) accreditation to DNV GL – Healthcare. This decision was made in order to focus more on Continuous Process Improvement (CPI) strategic imperatives while aligning best with Lean Six Sigma and Quality Management frameworks. This was the catalyst to implementing the hospital’s first electronic Contract Management System (eCMS). This paper will give a background into the decisions for the change in accrediting agencies, selecting an eCMS system, and the benefits the system has provided the organization since its inception. Effective contract management is a necessity for any organization. Technology innovations have allowed for more efficient contract management through the use of automated workflow and process integration. Through the implementation of the eCMS, UMC was able to streamline and standardize processes, increase productivity through workflow design and increase efficiency to achieve higher levels of quality.

Key Words: Hospital accreditation, six sigma, quality management, electronic contract management system

INTRODUCTION

An organization must evolve in order to be both adaptive and responsive to changes in an every-changing environment. UMC aims to provide the highest quality of care while fully considering patient safety. Efforts must be made to improve organizational efficiency and effectiveness at every opportunity while creating a system-based collaborative for which each member is completely situationally aware and focused on the patient. The Lubbock County Hospital District (“the District”) is a political subdivision of the State of Texas. The District’s purpose is “providing medical and hospital care” (The Special District Local Laws Code, 2009). The District owns and operates University Medical

Center (UMC), a general hospital licensed under Texas Health & Safety Code Chapter 241. UMC is a public hospital, and it is a tax-exempt charitable organization under Section 501(c)(3) of the Internal Revenue Code. The District operates the hospital and its affiliated entities under the assumed name “UMC Health System.” At UMC Health System, the vision, “To Serve Our Patients in the Best Teaching Hospital in the Country” creates a culture of constant change with the intent of improving our processes and maximizing efficiency (University Medical Center, 2017). In 2013, the hospital began exploring options in accreditation and made the change from The Joint Commission (TJC) accreditation to DNV GL – Healthcare USA, Inc. (DNV GL) accreditation. This was the first step in the journey to the eCMS implementation.

MEETING ACCREDITATION STANDARDS

Hospitals participating in the Medicare program must meet the requirements of the Conditions of Participation to assure quality of care for Medicare and Medicaid beneficiaries receiving care in hospitals. The federal government monitors hospitals’ compliance with the Conditions of Participation through periodic on-site surveys (Institute of Medicine, 1990). U.S. Centers for Medicare & Medicaid Services (2016), states “Section 1865 (a)(1) of the Social Security Act (the Act) permits providers and suppliers ‘accredited’ by an approved national accreditation organization to be exempt from routine surveys by State survey agencies to determine compliance with Medicare conditions.” The Joint Commission and DNV GL are national accrediting organizations approved by the Centers for Medicare & Medicaid Services (CMS) as having standards that meet Medicare’s survey requirements. Prior to 2013, UMC was accredited through Joint Commission.

The Joint Commission (TJC) also previously known as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Joint Commission on Accreditation of Hospitals (JCAH) was founded in 1951 “to act as an independent accrediting body for hospitals nationwide” (The Joint Commission, 2011). The Joint Commission has a patient-centered accreditation process and has developed the Tracer Methodology. The “Tracer Methodology utilizes the patient care experience to assess standards compliance” (The Joint Commission, 2011). This happens by selecting a patient from the organization’s file and tracing that patient’s experience at every point of care. TJC has a priority focus process that focuses on an organization’s “challenge areas” during their on-site visit.

DNV GL – Healthcare (DNV) became an option for accreditation in 2008 when the company received deeming authority from CMS (DNV GL – Healthcare, 2018). DNV provides a new approach to examining quality and patient safety. DNV has an emphasis on National Integrated Accreditation for Healthcare (NIAHO) and International Organization for Standardization (ISO) 9001 standards, which focus on quality management through continuous process improvement. ISO 9001 standards, first introduced in the automobile industry, is

described as a quality management system that “provides for work performance consistency, enables the discovery of poor performance, and stresses the process approach” (Levett, 2005, p. 46). If any given process is consistent, you eliminate variations and improve productivity. “Hospitals that establish quality-management systems are better equipped to reduce costs, manage workflow and improve health outcomes, according to DNV” (DeGuarhian, 2008).

While DNV and TJC both focus on patient safety and encourage innovation through best practices, DNV understands that there are different avenues for achieving patient safety outcomes and trust that hospitals know their patients and available resources best (Meldi, Rhoades & Gippe, 2009). Jen Fondon, UMC Vice President of Quality, poignantly stated that DNV “allows organizations to excel at quality” by providing them the flexibility to examine their internal processes and allowing them the freedom to decide what works best for their patients and their culture. DNV’s integration of the ISO 9001 Quality Management Program aligns with UMC’s Lean Six Sigma initiative to become more efficient through process improvement. Lean Six Sigma has established links between quality, speed, and low cost. Eliminating time delays and process variations, which are also referred to as “waste”, help generate process speed which can lead to higher quality and lower costs (George, Rowland, & Kastle, 2004). Providing the highest levels of quality is important to any organization and this can be done by examining internal processes and identifying variation, duplication, and inconsistency in those processes.

ECMS IMPLEMENTATION

It was during the first audit with DNV that UMC was challenged to meet new survey requirements under Contracted Services that specified, “a documented list of contracted companies and individuals, including their scope/nature of services shall be maintained,” and “the governing body or legally responsible individual(s) shall require annual management reviews of selected indicators to ensure that all contracted services (including all joint ventures or shared services) provide services that are safe and effective and comply with the requirements of this document” (DNV, 2014, p. 21). At the time, UMC did not have a centralized area or a designated system for contracts or a formal process for contract review. Contracts were held in different areas throughout the hospital in paper form. In the interest of meeting DNV accreditation requirements and improving efficiency through improved technology and process management, the consideration of an eCMS became essential. By implementing an eCMS and automating a contract process, an organization eliminates variation and creates process speed to help achieve the highest level of quality according to the principles of Lean Six Sigma (George, Rowlands, & Kastle, 2004).

Best practices in contract management involves standardizing contractual tasks by streamlining the processes and implementing workflow automation. Best practices can be defined as “process-oriented concepts” that achieve improvements

over time, essentially leading to increased performance and enhanced quality (Perleth, Jakubowki & Busse, 2000). Effectively streamlining the contract management process can lead to increased visibility of terms and conditions through seamless contract retrieval, efficiency through automated processes, and cost savings through workflow provided alerts, notifications, and contract reviews.

Organizations can increase their efficiencies/effectiveness by adaptively integrating cost-effective changes that catalyze technological innovations. Digital advances play a prominent role in standardization efforts which increase employee productivity by eliminating variations and waste. The creation of an online database eliminated the use of paper while increasing space and decreasing the time previously required for document retrieval. Workflow automation decreases time wasted in performing manual tasks. At UMC, the implementation of an eCMS was an essential component in the goal of centralizing contracts, enhancing supply chain management processes through waste reduction and automation and integrating technology.

Extensive research determined the financial impact and the cost/benefit analysis towards business process integration. Existing contract processes in the areas of supply chain management and legal/compliance required evaluation prior to moving forward. The selection of an appropriate system, the challenges involved with integration and time constraints regarding personnel were all considered prior to implantation. An interdepartmental committee formed to evaluate and select UMC's first eCMS. Members from the departments of Information Technology Analytics, Supply Chain Management, and the Office of General Counsel (Legal) were chosen due to the integrated processes involved, to assess reporting and data retrieval and to assist in identifying and evaluating contracting functionality and capability.

Kellogg, Fairbanks, & Ratwani (2017), state that to achieve excellence in Electronic Health Record (EHR) design, you must put the cognitive needs of the clinician at the forefront of development. The system must be developed to meet the workflows of the individual users and be considerate of the environment in which they will function. This holds true for all technological advances. Always consider end user needs, necessary workflow for essential contract management processes and departmental functionality when selecting a system design for an eCMS. Reasons for system selection revolved around the ability for customization to meet the hospital's individual needs, workflow capability and reporting functionality. Reporting capability is essential as the information captured serves a purpose. Data analytics provides cost saving information, forecasts spending trends and assists with meeting financial objectives. Not all health care organizations have the same structure or operate in the same way. The data that needs to be captured varies depending on the needs of the organization.

Additional components of system selection focused on system management and system location. UMC determined the new work flow and system required appropriate, qualified oversight. Thus, UMC hired the first Contracts Manager in the Office of General Counsel at the end of 2013; I joined the existing committee. Why would the position of Contracts Manager be housed in the Office of General Counsel and not in the Supply Chain Management department? For UMC, it was an organizational decision that worked best when evaluating our business processes. UMC wanted a complete organizational view of all contracts in the system, *including and not limited to*, professional services, office and space leases, business associate agreements, clinical research, education reimbursements, equipment service, supplies purchases and construction agreements. The system would need to be structured to integrate with the processes in the areas of Legal and Supply Chain while considering individual, departmental needs. UMC wanted full process capability from contract template creation and redlining to contract execution. While considering these elements, UMC selected Cobblestone Systems and signed the contract in March 2014.

Cobblestone Systems is a web-based system which provides contract tracking, drafting and administration. Cobblestone allows for customization of individual contract types, contract fields and reports. It has a built in work flow designer which allows for customization of tasks, alerts and important notifications. The system contains contract level approvals and electronic signature capability. Cobblestone Systems prides itself in offering Contract Lifecycle Management that streamlines and automates the entire contract process from the initial contract request and negotiation to the electronic signature upon contract completion while identifying next steps for contract compliance and renewal (Cobblestone Systems, 2018).



Figure 1. The Contract Lifecycle (Cobblestone Systems, 2018).

BENEFITS & INCREASED EFFICIENCY

Since implementation, the eCMS has proven beneficial. It identifies cost saving through contract reviews. UMC requires an annual review for any contract above a one-year term. “An effective contract review can reduce costs by lessening

contractual misunderstandings that cause wasted effort, dollars, and materials,” says Lois Wischkaemper, Senior Vice-President and General Counsel. Contract review measurements are defined and are required on every contract on an annual basis. The measurements can vary depending on the type of contract, but can consist of “quality and performance of equipment” for equipment service agreements “satisfactory maintenance” for lease agreements, “quality and timeliness of work” for general service agreements, or “acceptable downtime” for software agreements (University Medical Center, 2015). Caudle (2009), describes how the basics of achieving supply chain savings is achieved by reviewing contracts regularly for competitiveness. The contract annual review process is an effective way to identify and capture cost savings through quality measurement. During the review, UMC also requires a vendor rating from the contract stakeholder. The vendor rating is based on the vendor’s quality and delivery of performance. This rating helps the hospital identify which vendors are reputable and in good standing for future contract negotiations or which need to be monitored closely for quality assurance. Moreover, workflow design makes the task of the annual review an automated process for every contract in the eCMS. Once the contract is entered and the appropriate dates are set, the system sends automated e-mails to the stakeholder for review. It is imperative that an organization’s contracting policy reflects the requirements for the contract management process. UMC has implemented policies with information regarding contract negotiation, lists appropriate contracting guidelines and contains measurements for an effective contract performance evaluation. Implementing policy to create a culture of change within the organization is essential to success.

EHRs provide instant access for patient records anytime and anywhere, the electronic Contract Management System has become a useful tool for quick contract retrieval. It provides hospital wide accessibility and can be used to reference a number of pieces of important contract information such as vendor contact information, contract termination notification dates, renewal clauses, etc... Similar to the EHR, users can quickly access information from any computer terminal or phone with web capability. Once contracts are stored in the system, they are easily accessible at any stage from inception to full execution. This has significantly decreased wait time for copies of important contracts, as all members of the leadership staff have access to inquire on any contract in the system. It has allowed department stakeholders to be proactive in contract renegotiation and forecast spending and cost. For instance, UMC’s Accounting Department utilizes the system to identify upcoming payments for existing contracts and to discontinue payments for contract terminations.

One of the most beneficial features of the Cobblestone eCMS has been the ability to customize and configure the system to meet the organization’s individual needs. Through this capability, UMC has defined contract types, created and customized fields for important dates and content, and decided how the information is displayed to suit the needs of the hospital. “A configurable system

allows you to manage the detailed workings of your system without the constant need of external modification and assistance requests from the vendor” (Cobblestone Systems, 2018). UMC can customize any report and make it quickly available to the end user by using the custom and ad/hoc reporting functionality along with the user dashboard. Reporting numbers on contractual obligations and compliance is effortless. Data reporting is an essential part of the contract management process and can quickly identify contract spend or lost revenue.

Critical alerts and notifications e-mailed from the eCMS help our company become more aware of contracts that require attention. Alerts are sent to stakeholders regarding upcoming dates of contract expirations or approaching renewal termination options. Notifications are also sent out for the necessary annual review of the contract. The workflow designer, built into the system, allows for the design of a number of alerts customized to meet the individual needs of the organization. For example, the Nurse Recruitment Department at UMC is utilizing alerts as payment reminders for sign-on bonuses and relocation assistance to improve recruitment practices. This has eliminated the use of multiple spreadsheets to track payments dates and has increased employee efficiency. The Contracting Office receives copies of all notifications and alerts to help ensure contract compliance.

Prior to the implementation of the electronic Contract Management System, securing a fully executed copy of a contract was not always an easy process. Issues could vary from signatures in the wrong place to never receiving a copy back from the vendor after counter-signature. Through the eCMS, contracts are routed electronically for signature, ensuring that all parties sign and date the necessary documents in the appropriate places. Vendors are sent a link to the company gateway that allows for secure execution. Contracts are no longer lost in route or signed by the wrong individual. E-mails are sent directly to the designated signing party only to ensure contract compliance. Indicators are given indicating appropriate places to sign and date. The contracting office has full visibility of the contract at all stages of process. Once the document has been signed, the system automatically sends copies to all identified parties. This process has greatly reduced wait times for contract signatures leading to more efficient business practices and lowered risk for contractual obligations.

Technology advancements allow for the availability of additional functionality and improvements to the eCMS. Minahan (2007) states, “Driving the visibility, control and efficiency required to capitalize on the supply management opportunity is difficult, if not impossible, without the use of technology”. Every year, UMC examines its existing processes and attempts to apply any technological changes necessary to continue to facilitate the elimination of waste and increase productivity. UMC prides itself in being one of Texas’ “most wired” hospitals. “Most wired” hospitals achieve a higher level of technology adoption which leads to improved efficiency and better quality patient care

(H&HN, 2017). As technology advances, successful companies must examine every opportunity available to take advantage of process integrations and best practice suggestions while keeping the organization's best interests at the forefront. The ultimate goal of Contract Management at UMC is to create a system where a contract is tracked from beginning to end, to have a centralized and effective process within the complete contract lifecycle.

CONCLUSION

Although the journey to eCMS implementation is complete, to become a high performance organization and achieve maximum efficiency, continuous improvement is necessary. "Supply management transformation requires standardizing processes, overcoming internal resistance to change and adopting new technologies" (Caudle, 2009). Since its inception, the eCMS has contributed to higher efficiency through workflow integration and increased productivity through process automation. It has improved communication between the departments of Supply Chain Management and the Office of General Counsel as they coordinate and collaborate on contract negotiations and routing. The eCMS has saved hospital dollars through the contract annual review process and automated notifications. The ease of contract retrieval and the electronic signature process has contributed to increased efficiency and contract compliance.

The implementation of the eCMS has been instrumental in process standardization and improvement, has helped us meet our DNV accreditation standards and made significant strides in maximizing efficiency in our contract management process. Mark Twain once said, "Continuous improvement is better than delayed perfection". In any organization, you will never reach perfection, but the beauty of it is that you never give up trying to attain it. The eCMS will continue to grow and improve as technological advances and functionality within the system expands. Now that accreditation standards have been met, UMC will continue to strive for greater efficiency/effectiveness within the DNV and eCMS continuous improvement strategic pathway.

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DELIVERY OF HIGHER EDUCATION IN NONTRADITIONAL ENVIRONMENT: A CASE STUDY

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ABSTRACT

A nontraditional institution usually has mature students, offers flexible schedule of classes and part-time studies, and provides education in different formats such as distance education, online, and onsite classes. The current economic conditions, technological advancements, and globalization require our workforce to continuously update their knowledge and skills. Current knowledge and skills also provide more opportunities for growth and advancement. Our institutions are becoming less traditional and more mature students are going back to school. According to a USA Today report, nearly 74 percent of American undergraduate students are nontraditional.

This paper reviews adult learning theories, effective teaching strategies, and students' learning styles that might be helpful in providing a good quality of education to our growing number of mature students. I start with a review of literature about adult learners and teaching strategies, and how they have been applied in different settings. Then, I share my experience and discuss how I have been helping our students to be successful in their lives and careers. The study should be helpful to educators teaching in nontraditional environment and potential educators considering careers in nontraditional institutions. It should also be helpful to potential students who are contemplating coming back to school for more education.

Key Words: Nontraditional Teaching Environment, Nontraditional Institution, Adult Learners, Effective Teaching Strategies.

INTRODUCTION

According to The Center for Law and Social Policy (CLASP) Center for Postsecondary and Economic Success, enrollment of nontraditional students is expected to increase more than twice as fast as traditional students from 2012 to 2022. A review of the literature shows that the nontraditional students bring different learning styles and life experiences than the traditional students. The differences between nontraditional and traditional students present opportunities and challenges for educators and for institutions. The opportunities include students with some experience in real world, disciplined students with a mindset to learn and develop or strengthen their skills, motivated students with clear goals, etc. The challenges are mostly related to mature students who need to be educated to critically think and think outside of doing things the usual way. We

can make significant contributions in making sure that the nontraditional students are successful by studying these opportunities and challenges.

In our National University, we try very hard to provide a high quality of education to our students and support them so that they learn, earn their degrees, and are successful in their lives and careers. We offer programs that are current and relevant in today's environment and open new doors of opportunities for our graduates. Each of our programs have program learning outcomes (PLOs) which are helpful in preparing our students for skills and knowledge required to be successful in real world. The PLOs are continuously monitored and updated to make sure that we provide current and relevant education to our students. We have two tiers of faculty which include full-time and adjunct faculty but a majority of the courses are taught by our adjunct faculty. Our full-time faculty members regularly engage in scholarship activities so they can continuously provide current and relevant education to our students. Our adjunct faculty are practitioners and experts in their respective areas and, in addition to the theoretical aspects from textbooks and literature, share their experiences and expertise with our students. We provide adequate resources such as library resources, writing centers, hardware, software, etc. to our students so that they can successfully complete their programs.

REVIEW OF THE LITERATURE

Knowels identified four characteristics of adult learners: they are self-directed and take responsibility for their actions, they have extensive depth of experience, they are ready to learn, and they are task motivated. According to Andres and Carpenter, one of the components for higher attrition rate in nontraditional environment is a lack of successful integration of the nontraditional student into the collegiate environment. This integration can be achieved by: understanding the background and needs of students, developing suitable programs, creating appropriate environment, and developing effective teaching strategies. Kenner and Weinerman indicated that by having an awareness of the different learning styles of adult learners, framing learning strategies in immediately useful ways, and using competition and repetition, the developmental educator can enhance the integration of the adult learner into the collegiate environment. Usually, adult learners join a college or university after some gap and have some work experience. Educators should be aware that the adult learners have gained some practical knowledge and it can be used and applied in academic environment. So, the educators should present the academic knowledge in a manner that complements the students' practical knowledge and encourages students to develop more interest in learning. Framing learning strategies is helpful in keeping students interested in class and activating their curiosity to know more about the topics. A detailed syllabus that creates a step-by-step description of how the class will proceed should be helpful in linking topics and showing a bigger picture to the students. An application of academic theory to the real world situation should also be helpful in demonstrating the benefits of knowledge provided to the students. Competition and repetition might be necessary if adult learners reading skills are more oriented to non-academic reading than reading a

textbook or study materials in classes. The adult learners might also have developed some cognitive strategies that have been effective in their lives but might be resistant to new strategies.

According to Merriam, by the mid-decades of the twentieth century, attention shifted to studying adult learning as a way of differentiating the field of adult education from childhood education. Three major streams of adult learning theory emerged in this period—*andragogy*, *self-directed learning* and *transformative learning*. *Andragogy* is a European concept imported to the United States by Malcolm Knowles in the late 1960s. He introduced a “new label and a new technology” distinguishing adult learning from children’s learning pedagogy. The impetus for *self-directed learning* (SDL) becoming a major theory came from Tough’s research into the self-planned learning projects of Canadian adult learners. He found that 90% of his participants had engaged in an average of 100 hours of self-planned learning projects the previous year, and that this learning was deeply embedded in their everyday lives. The key to understanding SDL is to recognize that SDL does not mean sitting in a classroom alone and learning something but SDL is all about the learner taking control of her or his own learning. Mezirow is considered the main architect of the *transformative learning* theory. Learning in adulthood is often more than just adding information. It is also making sense of our experience and can result in a change in belief, attitude, or perspective. A perspective transformation is central to this type of learning. Merriam concludes by saying that the more we know about how adults learn, the better we can design learning activities that facilitate learning and the better we can prepare adult to live full and engaging lives in today’s world.

Rasmussen has discussed effective teaching strategies for adult learners. She starts by describing the characteristics of adult learners as explained by Knowles: need to know why they are learning something, learn through doing, are problem solvers, learn best when the subject is of immediate use, prefer social interaction, want to use their life experiences in the classroom, and want to integrate new ideas with existing knowledge. Rasmussen advocates four principles of teaching adults: motivate, inform, monitor, and engage. Adult learners are motivated to learn when they have a need to know. Participants should be told how the training and individual activities will be useful to them on the job. The general learning styles for providing information include *visuals* which rely on pictures, *auditory* telling stories, examples, etc., and *Kinesthetic or Tactile* by physically doing something which include activities, role playing, etc. One way an instructor can monitor the classroom climate and encourage learning is through the use of good questions and reflection. Engaging the learners by using *experiential learning* which means honoring their life experiences and knowledge an individual brings, and active participation in activities during the session.

Karge, Phillips, Jessee, and McCabe discussed effective strategies for engaging adult learners. *Think-Pair-Share* strategy developed by Lyman entails an instructor asking questions related to, describing, and interpreting something immediately following a lecture or a reading. The students think for a few minutes and then turn to a partner and share (i.e. pair and share) their response.

Then some of the volunteers can share answers or descriptions with the entire class. Tell-Help-Check strategy developed by Archer and Gleason provides adult students opportunities to review and confirm their understanding of critical information. The instructor numbers students 1s and 2s, ask question of 1s, and they respond orally or in writing. Then, 2s add or edit the existing information and all of the students check the text to make sure that the question has been accurately answered and the instructor finally provides feedback to individual students. Problem-Based-Learning developed by Barrows and Tamblyn presents an avenue for students to actively engage in learning communities by solving complex, challenging problems/scenarios. Students are provided with an “ill-structured” real life situation or problem. They are given guidelines as to how to solve the problem while working collaboratively with peers. The Immediate Feedback Assessment Test (IFAT) developed by Epstein, Lazarus, Calvano, Matthews, Hendel, Epstein, and Brosvic allows students to immediately view the accuracy of their responses and participate in a collective dialogue about the content. First, the instructor creates multiple choice questions relating to the content knowledge the students should have acquired. Each student individually takes the multiple choice test and then they are placed in a group. The group discusses the answers until correct answers are found on the IFAT answer sheet.

Bryson has written extensively about engaging adult learners and his four core beliefs about teaching adult learners are notable. According to him, teaching is dialogue and dialogue between students and teachers and between students and other students are absolutely fundamental to the process and outcome of learning and teaching. Learning is engagement and students learn much better when engaged with content and with the process of instruction. Some of the best teaching methods incorporate active participation and one of our primary goal is engaging such participation. Growth is discovery and the desire for knowledge begins with wonder, carries through with pursuing curiosity, and is driven by a need for the discovery and synthesis of knowledge. Good teaching enables students to satisfy wonder, exercise curiosity, and associate what is new with what is already known. Knowledge is application and we demonstrate knowledge when we apply it appropriately and effectively. It becomes evident and relevant when it is used. It is also the application of knowledge that serves to reinforce learning. It is how we test out and demonstrate its benefit.

TEACHING IN NATIONAL UNIVERSITY

Teaching Contents: In our National University, we develop our programs to provide current and relevant education to our students so that they will be successful in the real world. We begin by providing a clear description of the program and developing corresponding program learning outcomes (PLOs). For example, our Bachelor of Science in Financial Management program is “designed to prepare students for positions in the field of corporate financial management and related areas. The program provides both practical and theoretical training in financial decision-making and the creation of wealth through the art and science of managing financial resources. Students also develop a broad perspective of the global economic and financial environment.” The program description is followed

by specific PLOs which should be achieved when our students successfully complete the program. The program PLOs are: upon program completion, students will be able to explain the financial objectives of an organization and apply quantitative, qualitative and problem-solving skills in order to achieve those objectives; describe ethical, legal, and global issues that impact an organization's financial position; discuss the theoretical and practical aspects of corporate finance; explain the structure and operation of financial markets domestically and internationally; demonstrate oral and written communication skills needed by financial managers; and examine the financial position of an organization and make financial decisions.

The purpose of PLOs is to make sure that our students are provided with knowledge and skills required in domestic and international markets. According to Robert Half, named first in the industry on Fortune magazine's list of "World's Most Admired Companies" (January 19, 2018), 10 skills in a Finance career that really count are as follows:

1. A formal accounting qualification
2. Interpersonal skills
3. Ability to communicate
4. Financial reporting
5. Analytical ability
6. Problem-solving skills
7. Knowledge of IT software
8. Management experience
9. Commercial acumen
10. Capacity for innovation

Our program provides many of the skills including ability to communicate, financial reporting, analytical ability, problem-solving skills, commercial acumen, and capacity for innovation. Specifically, PLO #1 (Explain the financial objectives of an organization and apply quantitative, qualitative and *problem-solving skills* in order to achieve those objectives), PLO #2 (Describe ethical, legal, and global issues that impact an organization's *financial position*), PLO# 5 (Demonstrate oral and written *communication skills* needed by financial managers), and PLO #6 (Examine the financial position of an organization and *make financial decisions*) provide the skills described above. The Robert Half report concludes that "Indeed, if you can tick most of these boxes, you just might be one of finance's most sought-after professionals." And, our graduates can indeed tick most of the boxes and are prepared with skills and knowledge required in the real world. The PLOs are regularly updated to make sure that they are aligned with the current environment.

Faculty Qualifications: We make sure that we hire qualified faculty to teach in our programs so that our students benefit from our faculty's knowledge, experience, and expertise. In general, a minimum of a Masters' degree is required

to teach in our Bachelor of Science in Financial Management program. In addition, professional experience such as international finance, banking, etc. is considered for teaching specific courses. There are full-time faculty with Doctoral degrees, some of our adjunct faculty have Doctoral degrees, and some of our adjunct faculty have Masters' degrees with professional experience. Faculty receive training through various means at our University. All faculty are required to go through training prior to teaching their first course (whether on-ground or online). Online training on how to use the tools in Blackboard (our online course delivery system) also exists through our online technical support group. Faculty also meet periodically to share best practices and establish standards for teaching courses in their respective disciplines. We also have regular meetings with faculty to keep them informed of what is happening. Faculty are required to submit their course outlines two weeks prior to the start of each class for review. The course outlines are reviewed and suggestions are made for improvement of the course outline prior to the start of the classes.

Teaching Strategies: The course outlines include the course description, course learning objectives which are related to the PLOs, required study materials such as textbooks, and policies including confidentiality, academic honesty, late work, and grading policies. The grading policies clearly explain the required activities and corresponding points that can be earned by performing the activities. Following is an example of a grading policy:

Table 1: Grading Rubric

Assignment	Points	Percentage %
Homework Assignments Weeks I, 2 and 3	150	15%
Quiz I	100	10%
Quiz II	100	10%
Mid-term	150	15%
Final Exam	200	20%
Discussion Assignments	160	16%
Weekly Summary- Ten points each	40	4%
Case Study due last Saturday of the class	100	10%
TOTAL	1000	100%

Our students are required to complete homework assignments from the topics covered in the class. The class interaction includes lectures by our professors based upon their knowledge and experience, using power point slides and/or whiteboards, providing examples to explain theory, analyzing problems and situations in the class, discussing topics with and among students, etc. For example, in my classes, I explain the Time Value of Money (TVM) concept by lecturing and providing examples such as computing retirement income after

regular savings, computing payments for home mortgages, car loans, students loans, etc. Then, we review and solve some problems in the class such as how long it will take to double money if you invest today with an interest rate of 4%, how much you should invest today so that you will have \$50,000 after 4 years if your investment grows at 5% per annum, etc. The homework is assigned after making sure that the students have a good understanding of the financial concepts covered in the class. The students’ understanding is tested by weekly quizzes, a mid-term exam, and a comprehensive (everything covered in the class) final exam.

The discussion assignments can be used in a classroom but might be more relevant in an online environment. I usually ask some questions from the topics covered in the class and ask the students to answer the questions in their own words. So, the answers from the textbook, study materials, and other students might be similar but a student has to make serious efforts to explain a topic in his/her own words. It also calls for some critical thinking and creativity from the students because they have to construct their own answers. For example, one of the questions I asked in one of my online classes was “Explain how the use of leverage can increase shareholders’ wealth.” The answers ranged from “Leverage is the strategy of using others money to make money for you. Leverage magnifies your profits but it magnifies your losses too. So, it is a double edged sword and you should get it right, you really need to use it carefully” to “At an ideal level of financial leverage, a company’s return on equity increases because of the use of leverage...” The two perspectives appear to be different but indicate the same logic that leverage can be beneficial but also increases the riskiness of a company. The grades are assigned according to the JWMI grading scale as follows:

Table 2: Grade Assignment

<i>0% of the total points</i>	<i>40% of the total points</i>	<i>60% of the total points</i>	<i>80% of the total points</i>	<i>100% of the total points</i>
Did not participate or minimally met the primary discussion questions criteria.	Met two of the four primary discussion questions criteria.	Met three of the four primary discussion questions criteria	Met the four primary discussion questions criteria but did not demonstrate exemplary thought leadership.	Demonstrated exemplary thought leadership and met all of the discussion questions criteria.

At the end of each week, I require my students to write a one-page weekly summary to describe the concepts and theories learned during the week. Once again, the weekly summary should be in their own words which invites critical thinking and creativity. I have seen a number of summaries ranging from just the description of the topics learned, to the application of learning, to the benefits of learning. Here is an example: “This week has been a great start to this course of Financial Management. In my course of employment, I have been working with some of the aspects of financial management but studying in detail about the different methods and their importance of it to the business. I also understood how to compare Financial Statements of a company with its last year’s results as well as the other companies in the industry. And about how this is the backbone of any business...”

The case studies are designed to be not only thought provoking but also requiring students to go beyond the study materials used in the class and learn the application of knowledge they have gained to some real world situations. An example of a case study would be for the students to select a company of their choice, study its annual reports, and review its financial statements. The students are required to analyze the financial statements using the techniques such as financial ratios analysis, company reports, industry comparisons, market comparisons, etc. they have learned and write a report about the financial position of the company and whether it is a good investment opportunity for investors. The report can begin with a basic description of the company, the analysis conducted such as financial ratios, any trends observed over the years, cash flows analysis, earnings estimates, etc. The report should conclude with the final comments about the company’s performance and future prospects based upon the observations. Another example of a case study would be requiring the students to analyze whether a proposed investment project should be accepted. Students are asked to use the capital budgeting techniques such as payback period, net present value (NPV), internal rate of return (IRR), modified internal rate of return (MIRR), etc. and make recommendations.

Finally, we want to make sure that we are achieving our PLOs and our students are gaining the knowledge and skills they expect from our program. We do so by preparing Program Annual Report (PAR) every year. We use two direct measures and one indirect measure to assess the achievement of PLOs. In our BS in Financial Management program, the two direct measures include a signature assignment in one course and a project assignment in another course. For the indirect measure, a focus group of students in our program is conducted. A signature assignment is a case study and is similar to the one I have described in the previous paragraph. The idea is that the students critically think about the topics, get creative, and demonstrate a clear understanding of the topics. A project assignment is required in the capstone course which, according to the course description, “exposes students to a wide range of finance related topics, including issues affecting the current financial environment of business firms. The course integrates material from previous courses and covers topics such as corporate finance, short and long term investment risk management, financial domestics and

international markets and institutions and other related subjects.” The focus group is usually conducted in one of our finance classes towards the end of the program so that the students have taken a number of classes and are able to provide valuable feedback to us. In addition to PAR, we also conduct a five year review (FYR) of our program which includes a self-study of relevancy, currency, and quality of program, faculty qualifications, students’ preparedness, achievement, and academic success, adequacy of resources, etc. The self-study is examined by an external reviewer who prepares and submits a report based upon his/her observations and makes recommendations. All of this information from PAR, FYR, and external reviewer’s report is used to ensure that we continuously update and improve our program.

CONCLUSIONS

After reviewing the literature pertaining to the characteristics of adult learners and effective teaching strategies, and discussing teaching strategies in our National University, I summarize the effective teaching strategies as outlined in the literature and relate them to teaching approaches in our National University.

Knowels identified four characteristics of adult learners and they include self-directed and responsible, depth of experience, ready to learn and task motivated. Andres and Carpenter stated that one of the reasons for higher attrition rate in nontraditional environment is a lack of successful integration of the nontraditional student into the collegiate environment. According to them, this integration can be achieved by understanding the background and needs of the students, developing suitable programs, creating appropriate environment, and developing effective teaching strategies. Kenner and Weinerman have stated that a detailed syllabus that creates a step-by-step description of how the class will proceed should be helpful in linking topics and showing a bigger picture to students. Merriam has described three adult learn theories which include andragogy, self-directed learning, and transformative learning. Ramussen has advocated four principles of teaching adults which comprise motivate, inform, monitor, and engage. Karge, Phillips, Jesse, and McCabe have focused on Think-Pair-Share, Tell-Help-Check, Problem-Based-Learning, and the Immediate Feedback Assessment Test (IFAT) strategies to engage adult learners. According to Bryson, dialogue between students and teachers and between students and other students are fundamental to the process and outcome of learning and teaching.

In our National University, we seem to be using effective teaching strategies based upon the explanations and examples I have discussed in this paper. We know that our students are adult learners and there is no doubt that they are self-directed and responsible, bring a wealth of experience to the classrooms, are ready to learn, and are highly motivated. We try to understand our students’ backgrounds, their needs, and develop programs accordingly. We have discussed the contents of our BS in Financial Management program and how it provides

current and relevant knowledge and skills to our students. We have discussed that our students are provided with a detailed syllabus/course outline before the beginning of a class. Several of the effective teaching strategies discussed in the literature have been used in our National University. For example, class discussions and case analysis promote transformative learning discussed by Merriam. For another example, class discussions, class work, and regular quizzes support problem-based-learning and IFAT discussed by Karge, Phillips, Jesse, and McCabe. And, of course, there is continuous dialogue between students and teachers and between students and other students in our National University as delineated by Bryson. Overall, our teaching strategies appear to be effective and helping our students to gain knowledge and skills to be successful in their lives.

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