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Introduction to the Special Issue on Sustainability and Leadership of Creighton Journal of Interdisciplinary Leadership

I am pleased to introduce the special issue of Creighton Journal of Interdisciplinary Leadership, focusing on sustainability and leadership. The success of this open-access peer-reviewed journal is dependent upon a host of individuals and support from Creighton University. Creighton Journal of Interdisciplinary Leadership is made possible by the continued guidance and vision of the editor-in-chief Dr. Isabelle Cherney, managing editor Dr. William Leggio, and the entire editorial board. I take this opportunity to express my sincere gratitude to many reviewers who represent multiple disciplines and various academic institutes.

This special edition introduces various concepts of sustainability and leadership and their interconnectedness in six distinct articles. The underlining theme of the prominence of sustainability in all sectors is evident in all articles presented in this special issue. The articles represent research into leadership and sustainability practices and characteristics in the public and private sectors and higher education.

The first original research article entitled “Corporate leadership in sustainability: A green ranking performance-based approach to understanding corporate social responsibility (CSR) and positive marketing impact” is from Dr. Davis, Dr. Alibašić, and Mr. Norris. In this paper, the authors analyze several foundational concepts and questions regarding corporate social responsibility (CSR). Its primary contribution is a statistical examination of relationships between CSR and Newsweek’s Green Rankings using forensic-based financial and accounting measures. We also replicate a previous study and introduce new variables for looking at CSR from an economic perspective. The paper is interdisciplinary in that it synthesizes preceding studies’ conceptions of CSR through finance, consumer behavior, branding, and ethics — a mix which has received minimal attention — in an attempt to better characterize and measure CSR.

In the research article “Leadership strategies for embedding sustainability and resilience in organizations with an emphasis on sustainable energy,” Dr. Alibašić explores strategies for embedding sustainability in an organization that are frequently linked to effective leadership. By design, changes in direction within an organization may lead to alterations in commitment or perceived significance of sustainability in organizations. The goal of the research is an examination of the role both elected and appointed officials have in embedding sustainability within cities, and whether a change in leadership may have an impact on continuity of sustainability implementation and long-term viability of such policies. The qualitative research findings point out that an active partnership between city managers, administrators, and elected officials must be in place to support integrating sustainability from within and that sustainability thrives where exhaustive leadership support such initiatives and efforts.

In their article “Developing and continuing sustainability-related academic programming: Observations of emerging practices,” Dr. Alibašić and Dr. Crawley offer an overview of selected sustainability-related academic programs and certificates delivered by universities and colleges that are located within the same geographic area in Grand Rapids, Michigan. The authors evaluated the holistic and practical dimensions of creating and sustaining educational programs and reviewed emerging outcomes from universities with a history of prosperous programs to recommend models of applicability. The findings related to the concepts of developing and sustaining sustainability-related academic programs are offered within a broad and holistic context encompassing educational, programmatic, socioeconomic, organizational, and leadership dimensions.
In their report “Using a systemic design paradigm to develop sustainability leadership and build organizational interdisciplinary sustainability platforms” by Dr. Lees and Dr. Uri explore a doctoral sustainability leadership course in an interdisciplinary leadership program. Learners in the course study sustainability and sustainability leadership from a systemic design perspective. The authors of the article conclude with reflections from both the course facilitator and the course learner.

In another report “Educating the interdisciplinary civilian airman” Dr. Less, Dr. Dannar, Dr. Schindler, and Dr. Martin investigate the Competency Based Education (CBE) as it becomes increasingly popular with Department of Defense (DoD) training and education. In their article, the authors discuss Air Force Competencies, analyzes the evaluation of competencies, and transfer of learning. The Civilian Associate’s Degree, currently under beta testing, is discussed as an example of the need to consider transfer of learning with respect to institutional competencies. The paper captures the utilization of previous professional student experiences while developing and updating course curriculum based upon research and Beta Test student data.

In the concluding interview article entitled “Dr. Jon Saphier interview: Decades of success in educational leadership,” Mrs. Welby features an interview with Dr. Jon Saphier, considered an international leader in education. This article contains an interview with Jon Saphier and analysis of his leadership practices. Dr. Saphier discusses his core values of leadership, his successful approach to change initiatives, leadership failures, and critical elements of effective leadership.

As we conclude this special issue of the journal, we look forward to articles in the future and ask for your support by submitting your research to our journal and promoting interdisciplinary scholarship.

Sincerely,

Dr. Haris Alibašić

Special Issue Editor
Corporate leadership in sustainability: A green ranking performance-based approach to understanding corporate social responsibility (CSR) and positive marketing impact

Justin L. Davis, Ph.D.¹, Haris Alibašić, Ph.D.², & Sam Norris, B.A.³

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Abstract This paper analyzes several foundational concepts and questions regarding corporate social responsibility (CSR). Its primary contribution is a statistical examination of relationships between CSR and Newsweek's 2012 Green Rankings using forensic-based financial and accounting measures. We also replicate a previous study and introduce new variables for looking at CSR from an economic perspective. The paper is interdisciplinary in that it synthesizes preceding studies' conceptions of CSR through finance, consumer behavior, branding, and ethics — a mix which has received minimal attention — in an attempt to better characterize and measure CSR.

Keywords: leadership, sustainability, Corporate Social Responsibility, ethics, Quadruple Bottom Line

Introduction

The polarization between business relativism and idealism in business ethics is a consistent cause for debate in academia. Scholars inherently question the fundamental proposition regarding business ethics and whether the function of corporate social responsibility (CSR) serves to ensure the companies' financial success without making unethical choices. The concerns are involved as business ethics is not a single topic, but pertains to areas such as societal responsibility, answerability, transparency, and integrity of operations. Many of these issues are related to sociopolitical theory, making a physical and testable examination of such questions much more complicated.

The testing of the corporate role in sustainability seems to be the ongoing plague of the business ethicist — the inability to gauge, study and measure the absolute numbers that scientists look so fondly upon to confirm hypotheses and theories. Instead, the business ethicist is challenged with a seemingly emotionally-founded number of philosophical convictions and the ability to statistically analyze none of them. As a result, the issue of business ethics is left in a precarious and vulnerable position — it faces an uncertain, social confirmation of relativity. However, this conclusion is shortsighted, and, instead, should function as the catalyst for a continued and increased study of business ethics.

Business ethics is a term frequently used to describe distinct attitudes and behaviors within the workplace and organizations. The past decade, which some business ethicists describe as “the Decade from Hell” (Serwer, 2009) highlighted a need for stronger regulations and stricter legislation related to governing banking practices, corporate governance, and environmental responsibility (Ryan, Buchholtz, & Kolb, 2010). It has also shown us that the
practice of good business ethics is vital for the long-term well-being of our country. The 2007-2010 housing crisis brought about what is known now as the Great Recession — millions of bankruptcies, growing unemployment, and long-term intensified stratification of economic and social classes. Notwithstanding the heightened level of attention paid to business ethics by scholars and popular press alike, there is no conclusive definition as to what business ethics represents. Part of the problem stems from the competing sociopolitical views of the purpose of business, government regulation of it, and its environmental and social responsibility. The discrepancy between these perspectives raises the question of whether an approach should be taken from an absolutist sociopolitical perspective (e.g., humanitarian, fiscal, or moral lens, or a combination). The questions are regularly sought after in the study of business ethics, but there is limited agreement as to what points to a working definition and practice. Further, business ethics is a relatively novel field of academia. Ambiguity is often infused into the discussion about business ethics — its interdisciplinary nature provides conflicting perspectives throughout much of the material.

Consequently, there is an infinite number of socioeconomic and sociopolitical interpretations. One such explanation and a potential solution to corporate malfeasance manifests itself in the idea of corporate social responsibility (CSR). CSR has been defined in several ways. Keith Davis views it as "decisions and actions taken for reasons at least partially beyond the firm’s direct economic or technical interest" (Dennis, Neck, & Goldsby, 1998, p. 387). In 2001, the European Commission defined it as the "integration by companies of social and environmental concerns in their business operations and their interaction with their stakeholders on a voluntary basis" (Commission, 2001, p. 7). Moreover, CSR includes three "elements of corporate identity mix: behavior, symbolism, and communication" (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009, p. 550).

In practice, CSR is the idea that corporations have a societal responsibility toward their communities, consumers, workers, and their environmental consequences in and for running their businesses operations. The increased responsibility of corporations for the ecological and social threats is amplified with the increasing evidence of climate change, and the role corporations play in addressing those threats (Alibašić, 2018a).

This paper will examine the nature of CSR, including 1) its essential constraints and definition, 2) its internal and external benefits, and 3) its complexity in measurement in business literature. After this theoretical aspect, we partially replicate the past research from Cochran and Wood (1984). Our findings confirm their results but are based on recent data and an updated CSR environmental ranking measure. We also determine if there have been substantial changes in firms’ asset age correlations to CSR rankings. Cochran and Wood’s (1984) research found a relationship between a CSR index (Moskowitz, 1972; Sturdivant & Ginter, 1977) and firm financial performance. Their seminal study has not been replicated or revised in any form since it was published in 1984. The current study examines the links between reported R&D spending, selling, general, and administrative (SG&A) expenditures of companies and the Newsweek’s 2012 Green Rankings. The results from these tests shed light on the nature of CSR indices and their construction.

Essential constraints and definition of CSR

CSR is the attempt for corporations to engage in actions that are not necessarily in “the firm’s direct economic or technical interest” with the connotation that it will also have some altruistic and positive purpose, as suggested through social or environmental actions or some form of communal welfare. Even so, there are many factors contributing to defining CSR. On a sociopolitical and organizational level, Epstein (1987) breaks CSR down into social responsibility and social responsiveness. Scerer and Plazzo (2007) view CSR from a measurable results perspective as social responses (pp. 1098-99). On a more reductive level, the fundamental structure of CSR is (1) society, (2) the company, and (3) delivery/actualization. A more refined, but still ambiguous definitional approach is "Carroll’s
Construct,” introduced in 1979, which views CSR through an economic, legal, ethical, and discretionary (philanthropic) framework.

Caroll’s (1991) definition signifies a step toward a better understanding of CSR since it involves somewhat measurable categories. Using this construct, Aupperle, Carroll, and Hatfield (1985) were able to conclude that CEOs are able to add more insight into the nature between CSR and corporate action. However, since decisions are made on fiscal grounds, the ethical and philanthropic sectors should be defined differently. The necessary components of CSR are: (1) a firm maintaining profitability so that it can be in business, (2) initiatives on social welfare and altruistic actions that get addressed and benefit the internal and external operations of the firm, and (3) marketing and branding.

Cultural definitional differences are also influential given that they largely stem from different sociopolitical viewpoints. Research conducted in Spain regarding telephone services found that companies are viewed as socially responsible if philanthropic and ethical-legal obligations are met (Garcia de los Salmones et al., 2005). On the other hand, CSR obligations to German and French consumers are considered to be legal, ethical, and philanthropic issues, while in the United States CSR models include economic issues (Maignan, 2001; Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009).

The models and definitions described above are the two dominant approaches used in academia for measuring CSR: a theoretical, ideal approach, and an empirical, measurable approach. This dichotomy is what separates many studies on CSR. Empirical research in CSR focuses on statistical analysis, usually using financial- and accounting-based variables. Frequently, some form of ranking or index is introduced as a normative control. A limitation to this approach is that the process of creating an adequate classification or index without bias is difficult. Empirical analyses of CSR can only measure relationships within indices and can “explain the status quo common to social systems,” not the normative criteria itself (Scherer & Palazzo, 2007, p. 1099). In contrast, alternative frameworks examine what corporations should do and often ignore real-world constraints. Thus, models such as “Carroll’s Construct” represent a practical compromise given their consideration of both ethics and real-world constraints, while also providing a measurement of CSR.

A primary objective of this research is to investigate a possible long-term proxy or correlation of CSR rankings (i.e. the retesting of Cochran and Wood’s variables) and other performance measures that influence index rankings and ratings. This approach utilizes financial- and accounting-based forensic correlations between indexes and firms to better examine economic patterns associated with CSR practices. While its applicability is more related to the public sector, a quadruple bottom line approach to sustainability is a potential framework for consideration in the private sector (Alibašić, 2017 & 2018b).

Internal and External Benefits

The financial successes of firms actively practicing corporate social responsibility have raised many questions about the ability of companies to “do well and be good” at the same time. These successes, such as Ben & Jerry’s and The Body Shop, have spurred much research into the idea of implementing socially responsible initiatives in organizations that initially assumed the idea counteractive to their business model. These successes are attributed to several differing and sometimes conflicting views about the function of CSR and are divided between socially-oriented and egoistically-oriented CSR initiatives. Even so, regardless of orientation and perhaps from the ambiguity of what CSR is, the internal and external effects of CSR have been the same.

The benefits of a firm marketing social responsibility are numerous. Lougee and Wallace (2008) suggested that CSR enhances recruitment, helps retain top talent, increases employee productivity, and creates or maintains an atmosphere of pride within the workplace. For example, a Netherlands-based company, Capgemini, rewarded survey respondents with housing and schooling funds for disadvantaged children in India, resulting in over 2,000
Corporate leadership in sustainability

qualified applicants, a filling of 800 positions, and over 10,400 weeks of housing and education for children (Fox, 2007). Moreover, research suggests students would sacrifice financial rewards to work for socially responsible companies (Fox, 2007). Other research has found that environmental initiatives provide a cost-benefit relationship between operating overhead costs and employee productivity. A case study from researchers at Carnegie Mellon University’s Intelligent Workplace found that lighting improvements increased employee productivity by 3.2 percent, amounting to $1,600 per employee per year (Fox, 2007).

Outside of these benefits, CSR is thought to build a positive image, which is vital to consumer behavior because it prefaces “the consumers’ impression of the corporation, corporate product marketing, and the [goods and] services provided by the corporation” (Keller, 1998). Further, Kreng and Huang (2011) found that CSR builds the overall assessment of the corporations. Researchers have shown that CSR has positive value creation potential and a positive impact on corporations (e.g., Denworth, 1989; Lai Chiu, Yang, & Pai, 2010; Fombrun and Shanley, 1990; Roberts and Dowling, 2002). In addition, several empirical studies have confirmed that CSR can positively influence branding (Lai, Chiu, Yang, & Pai, 2010). Building on these studies, CSR programs can act as an instrumental tool for building a positive corporate reputation, suggesting “other intangible variables that add to a company’s value” (Blumenshine & Wunnava, 2010, p. 239).

Complexity of Measurement in Business Literature

Due to the ambiguity of CSR, there have been many attempts to standardize rankings through indices. Online sites such as “CorporateRegister” provide reports and statistics for over 9,000 companies and give awards for firms that exemplify the notion of corporate sustainability. Other sites are geared more toward environmental and green standards, such as Newsweek’s Green Rankings, while still others focus on employee satisfaction ratings and benefits. In addition, there are many indices on public companies that provide multi-faceted CSR rankings, such as the Domini 400 Social Index, the Calvert Social Index, the Citizens Index, the KLD Research and Analytics database, and the Dow Jones Sustainability Index (Statman, 2005). For instance, the KLD Research and Analytics database contains quantitative measures of over 90 social and environmental indicators that are grouped into seven broad categories (Lougee & Wallace, 2008).

The first approach in ranking CSR is creating a reputational index. Establishing a reputation index involves one person or group creating standards to rank, such as omitting companies that sell tobacco or invest in public gambling companies (Cochran & Wood, 1984). The negatives of using a reputational index far outweigh the positives. For example, the rankings are highly subjective due to one person’s or group’s criteria. In addition, the size of a sample is often too small making it difficult to generalize findings (Cochran & Wood, 1984). Besides, this form of indexing has embedded bias based on that person or group’s values and beliefs and assumes that corporations who sell socially-questionable products cannot exercise social responsibility outside their direct interests.

The second commonly used method for measuring CSR is through content analysis, which consists of noting particular items in reports (qualitatively or quantitatively) such as counting the number of times words come up (Cochran & Wood, 1984). The advantage of this method is that it leads to larger sample sizes. However, the choice of variables is subjective and only accounts for nominal word choice. Also, there is no measure as to what the firm may be doing — it does not consider action, only words (Cochran & Wood, 1984).

The third approach commonly used is surveying. The surveying technique seems to be the most ineffective; return rates are always low, the sample size is limited, it is very time consuming for the researcher, and it is still a highly subjective process for both the researchers to pick the firms and the firms themselves to answer the questions.

Due to these inefficiencies, there have been innovative attempts in trying to find a better method for accurately measuring socially responsible companies. Cochran and Wood (1984)
believed an immeasurable difficulty in measuring social responsibility through a financial lens is market efficiency. Therefore, using more broad financial performance variables that are related to CSR, such as asset-based measures, would be of relevance. To date, every study attempting to link profitability with CSR has either contradicted past studies or used flawed methodologies.

Cochran and Wood’s (1984) work provided a benchmark for measuring an established CSR index and financial performance. The method employed combined reputational indices used in several of the previous studies so that their results could still be inspected within that field’s paradigm (Moskowitz, 1972; Sturdivant & Ginter, 1977). The sampling approach is an improved technique, comparing various firms with different CSR scores to their respective industries before running two, five-year period cross-industry analyses, thus improving validity. It accounts for two different market shifts, as well as universalizes an accounting-based measure across industries. To date, their methodology represents the best validity in measuring a pre-established corporate social performance index and is why replicating several of these analytical techniques is crucial to CSR studies.

During the past two decades, there has been an emphasis by some researchers on understanding the role that CSR programs play regarding consumer behavior and perception. The conclusions have been similar in that CSR is either causal or significantly correlated with brand attractiveness and a positive corporate reputation. This section of the paper highlights the ideas and findings of this research, which are foundational claims to several upcoming hypotheses.

There are two general paradigms utilized: (1) how effective is cause-related marketing (CRM); and, (2) the relational models between CSR, consumer branding, and competitive advantage. CRM campaigns are quite ubiquitous in most individual, consumer-driven marketplaces and have been found to be very commonplace (Nan & Heo, 2007). One example of CRM is the “Box Tops for Education,” which has given over $475 million to schools in the United States since 1996 (General Mills, 2012). In addition, there are numerous companies that donate a percentage of their sales or profits to things such as advancing medical research or non-profit organizations with a social focus.

These campaigns are important at two organizational levels. Ross, Patterson, and Stutts (1992) found that companies engaging in CRM are perceived by consumers to be socially responsible, and Smith and Alcorn (1991) found that such activities increase a consumer’s willingness to purchase a company’s product. Interestingly, though, research has also shown that luxury goods, such as ice cream and concert tickets are more successful in CRM campaigns regarding purchase intention than items such as laundry detergent and toothpaste (Strahilevitz & Myers, 1998). Further, Nan and Heo (2007) found that CRM messaging is more efficient than traditional advertising when trying to build positive company image. These findings suggest CRM is not only an adequate tool for achieving CSR, but is regarded as an effective marketing tool that can be used to boost several facets of a firm.

CSR programs have similar impacts on building a positive corporate image. However, due to the ambiguity of CSR, previous research has found it difficult to affirm such straight-forward claims as the case with CRM. Instead, it has looked into the relational models between CSR, its effect in branding, and its importance to a competitive advantage. The most basic argument for CSR programs is that they provide a unique avenue for the practicing firm’s product(s) to increase market share (Berger et al., 2006; Du et al., 2007; Fournier, 1998; Lougee & Wallace, 2008). In addition to being a brand differentiator, Lai, Chiu, Yang, and Pai (2010, pp. 457-8) concluded that “buyers’ perceptions [(brand strength)] of CSR programs induces buyers’ positive brand awareness/association of suppliers’ products, improves perceived quality about these products, builds brand loyalty, and brings about brand satisfaction.”

CSR image has been shown to affect brand prestige and brand distinctiveness (Curra-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009). Both of these help companies establish
and build brand strength. These past studies support the notion that CSR can serve as a key contributor for creating or maintaining a positive corporate image and can aid in establishing a company's perceived legitimacy (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009; Handelman and Arnold, 1999). In addition, CSR image distinguishes a company from competition and thereby can help create a competitive advantage through differentiation.

**Previous research**

The 1970s and 80s produced a significant amount of research examining corporate social responsibility and financial- and accounting-based performance measures. During the 1970s, research was focused on relationships between CSR and profitability. Many of these were based on research using self-made CSR indices and tracked CSR performance through a variety of variables such as stock price, ROA, ROE, EPS, or some combination of these (Aupperle, Carroll, & Hatfield, 1985). Even so, findings from research during this period were often contradictory or based on methods that raise concern. The methodological approaches used that often led to contradictory results included issues such as small sample size, no adjustment for risk, use of a short timeframe of analysis, or questionable index constructs (Aupperle, Carroll, & Hatfield, 1985). By the 1980s the focus on CSR and profitability shifted. Empirical CSR researchers began to look at different variables related to financial performance and sought to view CSR through different organizational perspectives. McGuire, Sundgren, and Schneeweis (1988) found that risk and prior performance are closely associated with social responsibility. Cochran and Wood (1984) found asset age to be correlated with CSR rankings. And Aupperle, Carroll, and Hatfield (1985, p. 459) measured CEOs decision influence levels using “Carroll’s Construct” (1979) and found that “no statistically significant relationships were found between a strong orientation toward social responsibility, or concern for society, and financial performance.”

While research studying the relationship between CSR and financial performance has produced mixed results, it is possible that this is a result of casting a singular definition of CSR; most of the "socially responsible" firms were handpicked and no study viewed CSR as a pluralistic and/or complex definition until later. Further, the research of the 1970's assumed a causal model with tacit hypotheses such as: "Does CSR increase or decrease EPS or stock price?" However, there are many different ways a firm can be socially responsible, and it seems that the predominant research of the 1980's shifted toward addressing this issue by examining variable correlations and other forms of measurement. This methodological shift was evidenced in the seminal study conducted by Cochran and Wood (1984). Their analysis used industry controls and suggested that CSR manifests itself differently among heavy chemical, energy, and beverage industries.

The technique of controlling companies by industry has proven to be preferable to other past studies that have looked for CSR relationships without controlling for this variable (e.g., Moskowitz, 1972; Parket & Eilbirt, 1975; Vance, 1975; Heinz, 1976; Alexander & Buchholz, 1978). By studying within an industry, a more accurate and homogeneous comparison between firms is possible since certain industries have different "accounting practices, operating leverage and other variables, [such as risk], [which] may influence test results" (Cochran & Wood, 1984, p. 47). These reported accounting data are essential firm-level measures and provide objective data for analysis. Given the importance of the reported accounting data and building on past research using these variables when analyzing the role of CSR in organizations, our first hypothesis follows the approach of Cochran and Wood (1984) in examining the ties of these factors in relation to asset age. Thus,

Hypothesis 1: Operating earnings to assets, operating earnings to sales, asset turnover, fixed asset turnover, and excess value are significantly correlated with asset age.

In addition, there has been a void in this field of research, with only a handful of researchers and firms measuring the profitability of socially responsible investing (SRI)
indices. These indices include the Dow Jones Sustainability Index, the FTSE Group’s series of indices, and the Calvert Social Index, which were derived to function as benchmarks for other privately managed socially responsible investing firms. Using SRI indices, Statman (2005, pp. 15-16) found that “the mean score of each is higher than that of the S&P 500 Index,” and that the “returns of socially responsible indexes were higher than those of the S&P 500 Index … although there is a wide range of scores of the companies within each socially responsible index and much overlap between the lists of companies in the socially responsible indexes and the S&P 500 Index.” Similarly, Lougee and Wallace (2008, p. 103) found that “the Domini 400 has delivered an annual rate of 12.09% while the benchmark, S&P 500, has produced an annual rate of 11.45%.”

Outside of these studies, recent empirical research has focused on the relationship between CSR and various other corporate investments, such as R&D, marketing, consumer perception and behavior, and CSR brand strength under acquisitions (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009; Lai, Chiu, Yang, & Pai, 2010; Page & Fearn, 2005; Nan & Heo, 2007; Robinson, Irmak, & Jayachandran, 2012). These studies have looked into the cause and effect relationships between CSR-based company image or cause-marketing campaigning and consumer purchasing behaviors related to CSR.

Further, past research has identified a strong link between consumer purchasing behavior of firm’s products and consumer perception of a firm’s social concern. More recently, scholars have noted the link between cause marketing campaigns and a positive view of company brand (Robinson, Irmak, & Jayachandran, 2012, p. 126; Brown & Dacin, 1997; Pracejus, Olsen, & Brown, 2003; Strahilevitz & Meyers, 1998). This emphasis of organizations on product development and marketing to enhance consumer perception is expected to be tied to company Green Rankings. Thus, the second hypothesis states:

**Hypothesis 2:** Reported research and development expenses and selling, general, and administrative (SG&A) expenses will be significantly correlated with CSR rankings.

Although it is the case that much of the reported R&D and SG&A expense is not directly related to CSR efforts, it seems likely that higher R&D to company revenue/size would boost CSR rankings, given its effect on consumer behavior.

**Method**

The data utilized in this investigation were collected using Research Insight. The companies analyzed were compiled from *Newsweek*’s 2012 Green Rankings since this is currently the most extensive ranking, is easily accessible, and provides a comprehensive CSR list. The 2012 rankings were used because this was the last year a full breakdown of categories essential to this study were recorded (i.e., Environmental Impact, Environmental Management, and Disclosure). In addition to the overall Green Rankings, these three variables allow better insight into the elements contributing to the Green Rankings and their link to other variables assessed in the study. Starting in 2013, these data were no longer reported.

The rankings are based on environmental concerns, thus limiting the scope and problem of ambiguity related to CSR and allowing for more consistency within the data. A major advantage of the data used was the creation of three separate scoring components, including measures of (1) environmental impact, (2) environmental management, and (3) disclosure. The companies’ environmental impact score is given through a quantitative, industry-controlled economic model, allowing for a fair comparison between firms that naturally use more raw materials and those that are more service oriented. The environmental management score is created through the “examination of company documents, media sources, online databases, government sources, NGO research, and other industry sources, as well as direct communication with key stakeholders,” which are all “peer-reviewed internally and sent to companies for verification” (Newsweek, 2011, para. 8). The environmental management
score assesses the environmental footprint of the organizations, and includes a review of each company’s operations, suppliers, contractors, and products and services. It seems plausible that this score may include a corruptibility factor since marketing, R&D, and public relations factors contribute into the positive performance-related criteria and assessment of environmental controversies and incidents. However, the profiles are all peer-reviewed internally.

The disclosure score was created by “evalu[ating] the breadth and quality of company environmental reporting of their material impacts … as well as company involvement in key transparency initiatives such as the Global Reporting Initiative and Carbon Disclosure Project” (Newsweek, 2011, para. 9). As a result, the 2012 Green Rankings method has synthesized environmentally financial-based analysis, content analysis, and surveying techniques, which has not been done in any serious manner to date and therefore represents the most comprehensive form of CSR ranking available.

The sample consists of the 500 largest firms as determined by Newsweek and included in Newsweek’s Green Rankings. Each company was assigned a score for each of the CSR measures and the data were analyzed to identify what factors were strongly correlated with higher CSR measure scores. In many tests the sample size is denoted since accounting reporting practices are not consistent across all companies and some reported data is voluntary. We used 2011 and 2012 financial variables as a way of trapping the Green Score since the ranking statistics were determined in June of 2012.

Hypothesis 1 used Cochran and Wood’s (1984) variables (i.e., operating earnings to assets, operating earnings to sales, asset age, asset turnover, and excess market value) to determine if the relationships they found over twenty years ago between these and CSR are more or less influential in today’s business environment. In addition, the ratio of fixed asset turnover was incorporated since Cochran and Wood’s findings were asset-based.

Hypothesis 2 incorporated reported research and development expenses and selling, general, and administrative expenses alongside the Green Ranking scores to determine if there are any significant correlations. Consequently, any significant findings will require further analysis to establish a better understanding of the relationships between the variables.

Results

The initial results for the five relationships in Hypothesis 1 were all confirmed, except for the relationship between Operating Earnings to Sales and Asset Age. Asset Age was found to be negatively correlated with all other variables, including Operating Earnings to Assets (-0.173), Asset Turnover (-0.219), Fixed Asset Turnover (-0.133), and Excess Value (-0.135). Thus, Hypothesis 1 found that the variables used in Cochran and Wood’s original study are still significantly correlated when using the sample firms included in this study (Table 1).

Table 1.

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<td>Asset Age</td>
<td>1.000</td>
<td>-0.219**</td>
<td>-0.133**</td>
<td>-0.135**</td>
<td></td>
</tr>
<tr>
<td>Asset Turnover</td>
<td>1.000</td>
<td>-0.049</td>
<td>0.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Asset Turnover</td>
<td>1.000</td>
<td>0.048</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excess Value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
</tbody>
</table>

Note: *p < .05  **p < .01
Although there is a difference in some correlations’ strengths as compared to Cochran and Wood’s study, this similarity is important since it somewhat functions as a control check for the several new industries that now exist in the 28-year gap of research. Consequently, findings for Hypothesis 1 suggest that these variables’ relationships have been consistent overtime and were not significantly affected by the emergence of new industries.

Hypothesis 2 was also confirmed as the data showed strong linkages between the Green Score, Env Impact, Env Management, Disclosure, and the other reported financial and operating variables assessed (Table 2).

Table 2. Financial and 2012 Green Score Variable Correlation

<table>
<thead>
<tr>
<th></th>
<th>Asset Age</th>
<th>Asset Age Turnover</th>
<th>Fixed Asset Turnover</th>
<th>Green Score</th>
<th>Env Impact</th>
<th>Env Mgmt</th>
<th>Disclosure</th>
<th>Net Income</th>
<th>SG&amp;A</th>
<th>R&amp;D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Age</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>0.133*</td>
<td>0.235*</td>
<td>0.294*</td>
<td>0.140*</td>
<td>0.076</td>
<td>0.055</td>
<td>0.132</td>
</tr>
<tr>
<td>Age</td>
<td>0</td>
<td>-0.219**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.070</td>
<td>-</td>
<td>0.076</td>
<td>0.055</td>
<td>0.132</td>
</tr>
<tr>
<td>Asset Turnover</td>
<td>1.00</td>
<td>0.104</td>
<td>0.049</td>
<td>0.137*</td>
<td>0.008</td>
<td>-0.066</td>
<td>-0.086</td>
<td>0.076</td>
<td>-0.226</td>
<td></td>
</tr>
<tr>
<td>Fixed Asset Turnover</td>
<td>1.00</td>
<td>0.051</td>
<td>0.079</td>
<td>0.321*</td>
<td>0.055</td>
<td>0.055**</td>
<td>0.002*</td>
<td>0.149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Score</td>
<td>1.00</td>
<td>0.615*</td>
<td>0.092**</td>
<td>0.273*</td>
<td>0.257*</td>
<td>0.378**</td>
<td></td>
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</tr>
<tr>
<td>Env Impact</td>
<td>1.00</td>
<td>-0.093*</td>
<td>-0.082</td>
<td>0.121*</td>
<td>0.237**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Env Mgmt</td>
<td>1.00</td>
<td>0.579*</td>
<td>0.280*</td>
<td>0.194*</td>
<td>0.344**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclosure</td>
<td>1.00</td>
<td>0.134*</td>
<td>0.163*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Income</td>
<td>1.00</td>
<td>0.055</td>
<td>0.732**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG&amp;A</td>
<td>1.00</td>
<td>0.804**</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D</td>
<td>1.00</td>
<td></td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05  **p < .01

Hypothesis 2 incorporated research and development expense and selling, general, and administrative expense as additional variables. The sample sizes for research and development cost were limited to 278 firms in 2011 and 264 firms in 2012 since reported research and development expense is considered a voluntary disclosure for firms. Given the voluntary nature of the reporting of this data, we conducted a split-sample comparison test (companies providing data and those not) to determine if the volunteerism influenced the results. After testing for differences between market capitalization, net income, and total assets, no significant differences were found between the two subset populations of the data. The, selling, general, and administrative expense samples totaled 455 in 2011 and 464 in 2012 and thus did not require subset testing for differences given the very high reporting rate among firms.

These results have many significant implications. As with the previous correlations between asset age and the Green Rankings and scores, environmental management yielded no statistically significant results. However, these results did identify significant relationships between both research and development expenses and selling, general, and administrative (SG&A) expense variables and environmental management. Further, R&D and SG&A were
Corporate leadership in sustainability

found to have significant positive relationships with all Green Scores and the three other measures (Environmental Impact, Environmental Management, and Disclosure), except for no relationship being found between R&D and Disclosure.

An important observation in these results is the almost complete lack of relationship regarding asset age. These results echo findings from past research, including the findings of Bowman and Haire (1975), that “the highest performing firms [were] those found in the middle range of CSR” (Aupperle, Carroll, & Hatfield, 1985, p. 449), and Cochran and Wood (1984), where they found that the information related to operating earnings/assets had no statistical significance (p. 51).

The results further demonstrate the continuing trend between environmental impact scores and ecological management scores — asset age has no significant relationship with environmental management, and R&D expense and SG&A expense have no significant relationship with environmental impact. Further, it highlights the incongruity of disclosure relationships between asset age and the R&D and SG&A expenses, with asset age showing a negative relationship and the other two having positive relationships.

SG&A expense has a positive relationship with Green Score (0.257), disclosure (0.163), environmental management (0.194), and environmental impact (0.121). This difference between negative and positive correlations between disclosure score when related to either asset age or R&D expense and SG&A expense represents a possible point between positive intent and greenwashing. The trend of a negative relationship between asset age and disclosure score (meaning that firms with older assets have higher disclosure scores and firms with newer assets have lower disclosure scores) and a positive relationship between R&D and SG&A expense exists where the three variables coincide. Importantly, disclosure score is more closely related to SG&A expense, which suggests that the disclosure score either represents illegitimate ranking or intrinsic bias toward specific industries.

An example of this is within the information technology industry, which found a minimal relationship between asset age and disclosure in 2010 (-.163) and in 2011 (-.152), yet has an R&D expense and disclosure relationship of (.407) and an SG&A expense and disclosure relationship of (.428) in 2010 and (.438) in 2011. These results support the conclusion of McGuire, Sundgren, and Schneeweis (1988, p. 869) that “it may be more fruitful to consider financial performance as a variable influencing social responsibility than the reverse.” In addition, the results represent the curvilinear relationship of asset age with ranking and suggest the relative strength of R&D expense and SG&A expense on CSR scores.

The findings related to disclosure scores also resonate with the recent research by Chatterji and Toffel (2012), who found that firms sharing information about their environmental activities are not necessarily transparent about their political involvement in environmental policies. They found a relationship between “companies’ political transparency scores [and] their environmental transparency scores from the Newsweek Green Rankings” to be weakly correlated at (.200), which again suggests the importance of factoring R&D expense and SG&A expense into CSR score models to mediate transparency issues (para. 4). These relationships further emphasize the difficulty of CSR measurements and index construction.

Discussion

The results from this study are providing further knowledge related to the ties between corporate social responsibility and financial performance. Findings indicate several relationships between CSR and financial performance that have previously been unexplored, as well as retests of the influence of asset age.

The two most important contributions include testing asset age, R&D expense, and SG&A expense with the three different CSR scores provided by Newsweek, as well as introducing a different system of breaking down CSR. Past studies have looked at CSR with a
singular definition that could be found through financial analysis across many different industries. However, the results that show increased relationships between the three variables and among different Green Scores suggest that different sectors either manifest their CSR in different ways or that specific industries are innately better off when being rated on their social responsibility.

Cochran and Wood's (1984) concluded that the relationship they found between asset age and CSR could be explained by the fact that in the lower regulation in the past could have reduced the motivation for corporations to make significant environmental investments. However, societal demands have changed consumer expectations and the broader corporate position for contributing to a cleaner environment. As a result, most corporations upgrade facilities and operations anticipating those demands or simply to comply with increasing regulative requirements.

This idea has broader implications and applies to the capital-intensive industries of industrials, materials, energy, and utilities. These industries have more long-term, heavy equipment that is amortized over a more extended period as compared to health care, information technology, and financial industries. The latter three industries have the most up-to-date equipment and technology, thereby intrinsically being advantaged for quicker internal change when faced with any unforeseeable external pressure. Such can be posited with the information technology sector, which has the best average ranking. It is a new field with continual expansion, growth, and turnover, which, when compared to capital-intensive industries, has the highest potential to have the most environmentally sound practices.

When industries are grouped into capital-intensive and individual, consumer-driven product categories, the results were statistically significant across every Green Score and were consistent with the rest of the related trends. In addition, the methodology used for calculating the environmental impact score included greenhouse gas emissions among over 700 metrics. Consequently, given this method and consistent relationship with asset age, industry, and environmental impact score, the rationale seems fitting.

The consistent relationships between scores with R&D expense and SG&A expense suggest several possible explanations regarding marketing, branding, and advertising. A simple answer is that marketing and branding is a core component in the essence of CSR, as postulated in this paper. Another explanation could be that companies with significant marketing and R&D teams understand the roles CSR campaigns can play on consumers. Subsequently, the campaigns, firms’ brand equity and strength, and firms that are more prone to advertise may influence index construction and ratings since R&D expense and SG&A expense may proxy for emotional/qualitative bias. This idea supports much of the general attitude regarding research on cause-marketing and CSR advertising, as well as some of the sentiments within this paper.

It is important to note the limitations of the study. One limitation is the generalizability of findings to other firms. Given that our sample was based on the 500 largest firms as determined by Newsweek, we cannot assume the findings would carry over to medium, small, or micro firms. In addition, the data that was readily available for our analysis would be very difficult to gather if not looking only at publicly traded organizations.

Areas for Further Study

As already noted, the financial variables of asset age, R&D expense, and SG&A expense are all strongly related to CSR scores. These variables should be examined further and under different CSR index rankings (i.e., corporate governance CSR rankings) to determine if they have absolute importance with CSR ratings in general.

One difficulty in this study was sample sizes since there are different reporting and accounting practices among different companies and industries. Therefore, the industries were divided based off the GICS economic sector codes, which are broad enough to filter industries to provide more extensive sample sizes, but at the same time compromise the acuity of the
results and intended groupings of the hypotheses. Currently, it seems that there are no CSR rankings that are as large, specific, and comprehensive in measurement as Newsweek’s Green Ranking. There is, therefore, a waiting period until larger samples of companies are ranked, such as the Fortune 1000. Once something like this becomes available a more broad approach for testing in this area of research will be possible.

On this same note, since 500 firms are still somewhat of a small sample and the 500 firms in Newsweek’s 2016 rankings have slightly changed, using the Fortune 1000 would provide an even more extensive buffer zone to be able to create a predictive model of CSR activities and scores based off of their financial relationships. The conclusion would also then provide a more specific system of grouping, whereby the information technology grouping could be broken into their GICS subcode of software and services, technology hardware and equipment, and semiconductors and semiconductor equipment.

On a different note, a general observation in the results is that the Green Scores seem to have stronger relationships with the 2012 financial variables. The results suggest that the prior year’s financial measures may be more indicative of the following year’s Green Rankings. Consequently, an analysis of Newsweek’s 2012 Green Ranking using 2011’s and 2012’s financial datasets could provide even more insight into the construction of this ranking and would be an excellent way for comparison. An example of this would be to run a similar analysis as this study as well as to further Chatterji and Toffel’s original intent (between political lobbying disclosure and environmental disclosure) and systematize a way to screen or measure company or industry greenwashing.

Another observation for further study is the similarity between the findings of Cochran and Wood’s significant, but weak correlation with asset age and this study’s significant and weak to moderate asset age correlations. A question to ask regarding both of these results is: if Cochran and Wood’s ranking system was so simplistic and Newsweek’s ranking was far more extensive, then could any other index or ranking demonstrate similar asset age relationships? Depending on these results, the absolute significance of asset age and CSR would have to be questioned. Also, this question asks whether there will ever be objective CSR rankings and can these be cross-cultural or will this construct continue to be deeply divided based on cultural perspective? Currently, CSR ranking practices rely on a collective subjectivity. This paper’s findings could be further explored to determine the variables’ causal role and then incorporated into ranking models to counter unseen biases. This would represent a giant step toward objective CSR ranking practice since it would filter out such qualitative biases, which is what R&D expense and SG&A expense may represent.

Finally, future statistical studies relating to CSR must begin to break down or group industries with similar structures. The results significantly reflect this step. Importantly, this step furthers the notion that CSR scores are not as singular as CSR’s accepted definition and should continue to be used in future studies.

Conclusion

Corporate social responsibility is not a single topic or definition as stated. It has many levels and can be exercised differently, according to an industry or firm’s interests. This paper has highlighted the difficulty in measuring CSR, and suggests that there is no absolute solution until further research is conducted regarding the variables analyzed and additional ones in future research. This is still a relatively young field of research and clearly has potential for the advancement of a commonly accepted definition and focus. The past forty years have presented the growth of the topic, from defining it and measuring it in elementary terms of profitability, to understanding strict relationships between CSR image and its relation to brand strength. Even with these contributions, there is still a wide range of research to be done moving forward.
References


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Leadership strategies for embedding sustainability and resilience in organizations with an emphasis on sustainable energy

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Abstract Efficient strategies to embedding sustainability in an organization are frequently linked to effective leadership. By design, changes in direction within an organization may lead to alterations in commitment or perceived significance of sustainability in organizations. While some organizational leaders are interested in embedding sustainability within a structure, other leaders believe in leaving the legacy behind and permanently influencing sustainability efforts. To confirm or dispel the underscored notion of the importance of leadership in embedding sustainability in organizations, a qualitative methodology approach to interviews, document analyses, and literature review is utilized. The research inquiry includes in-person interviews with top city staff and elected officials in a large Midwestern city and a review of the internal documents and reports. The end goal of the research is an examination of the role both elected and appointed officials have in embedding sustainability within cities, and whether a change in leadership may have an impact on continuity of sustainability implementation and long-term viability of such policies. The paper focuses on the application of sustainable energy policies within a local government organizational structure as a mean of constructing a better understanding of leadership on sustainability implementation and embedment. While the further inquiry is needed, the research points out that an active partnership between city managers, administrators, and elected officials must be in place to support integrating sustainability from within and that sustainability thrives where exhaustive leadership support such initiatives and efforts.

Keywords: leadership, sustainability, local governments, sustainable energy, resilience

Introduction

For sustainability-related initiatives to thrive and succeed within an organization, leadership support is critical. The following research provides practical insights on the benefits of embedding sustainability with a specific focus on implementing the sustainable energy program within organizations. While the study focuses on a local government with the city/council with a weak mayor type of local government, and a history of implementing sustainable energy projects, the implications of the study can be substantial to both the public and the private sector organizations. Organizations engaging in sustainable energy strategies adopt innovations and efficaciously incorporate them into organizational routines and culture. In this research, an attempt is made to demonstrate the significance of a synergetic leadership and community support to sustainable energy strategies. Sustainable energy management, a subset of sustainability serves as an impetus for progress towards more effective leadership, organizational efficiencies, and more resilient communities. Sustainable energy management is defined as a set of practical measures undertaken by an organization to address the increased energy cost and may include energy efficiency initiatives, strategic energy management, and investments in renewables.

The central question for the research is: What is a relationship between the effect of deployment of sustainable energy by the local government and its organizational efficiency and effectiveness, fiscal resilience, and the overall sustainability? An in-depth, rich, thick
descriptions concerning the opportunities and a potentially positive impact on local governments and communities were identified. One of the critical topics explored was the effectiveness of leadership in developing, delivering and sustaining the sustainable energy strategies. Furthermore, a key to successful sustainable energy implementation is measuring, tracking, and reporting of results is analyzed. The implications for transformative changes include informing the local government public administrators of the benefits of institutionalizing sustainable energy management and the effects on productive leadership, efficient organizations, and resilient communities. As the increased cost of energy, lack of coherent climate change policies and financial conditions intensify pressures on local governments, sustainable energy management provides an opportunity to reduce adverse effects of such inherent concerns.

The ultimate goal of this study is to identify the critical mechanisms leading to effective sustainable energy strategies at a local government level. The role of local governments is to deliver efficient and effective services and to ensure the safety of the public to support the critical results related to the quality of life in their communities. However, cities’ leaders are primarily concerned with the economic well-being of the organization. Moreover, a new fiscal distress dynamic dictates new approaches, and sustainable energy management offers novel venues to address the issues related to the economic, social, environmental, and governance elements of sustainability aligned with a pragmatic, practical worldview. Researchers in previous studies surmised the importance of sustainable energy, and sustainable energy models for cities (Houck & Rickerson, 2009; Hughes, 2009; Keirstead et al., 2012; Kim et al., 2006; Born et al., 2001).

The literature review reveals an abundance of books, and peer-review journal articles using varying lenses focusing on sustainability (Akinsete and Nelson, 2017; Alibašić, 2017a & 2018b; Collin and Collin, 2010; Cohen, 2011; Coyle, 2011; Doppelt, 2010; Girardet, 2006; Portney and Berry, 2010; Portney, 2013; Slavin, 2011; Tumlin, 2012). Moreover, number of research, writings, and studies provide a review of varying aspects of energy efficiency and renewable energy efforts, including programs and policies (Alibašić, 2017b; Anderson, Kanaroglou, and Miller, 1996; Bossink, 2017; Born et al. 2001; Brownsword et al., 2004; Burch, 2010; Cheung et al., 2016; Cumo et al., 2012; Droege, 2006; Friedman & Cooke, 2011; Kim, Han, and Na, 2006; Lin & Huang, 2009; Madlener & Sunak, 2011; Mathiesen, Lund, and Karlsson, 2010; Vanderburg, 2006). However, a lack of specific research on the role of leadership in sustainable energy programs, plans, projects and policies, and in embedding sustainable energy to increase organizational efficiency is evident.

The positive impact of sustainable energy initiatives is presented using a case study of the City of Grand Rapids, MI. The City meritoriously deploys sustainability in the strategies and programs, brings about better insight into the potential implications of sustainable energy and sustainability programs and the role of leadership in implementing and embedding sustainability. One goal of this research was to analyze the influence of sustainable energy on the organization and in the community and showing the leadership at the local government level. Fitzgerald’s (2010) viewed cities as leaders in inspiring national policies and energy sector growth and innovation. Local governments lead the worldwide efforts in deploying sustainable energy initiatives to increase climate resilience (Alibašić, 2018a & 2018c).

To adequately position the qualitative research design in evaluating the sustainable energy management and leadership, grounded theory formed the framework of this study. The grounded theory approach offers a prospect for new theories to emerge in the social science field rooted in objectivist and more recently constructivist concepts with a focus on generating theory, induction, and deduction. Grounded theory design contributes to the new views and theoretical understanding of sustainable energy management and the future of the sustainability framework. Studying sustainable energy in local government presented an opportunity for a potential theory to emerge as a more advanced field of study.
Leadership and sustainability in local governments

Today’s leaders must operate within the constraint of surroundings, and limitations and benefits of a partnership with other similar organizations. Osborn, Hunt, and Jauch (2002) observed how organizations embedded the formal and contextual approach to leadership internally (p. 798). In cities, the performance measurements are incorporated into specific leadership actions, whether they include a reduction in energy consumption, renewable energy or specific reporting mechanism. Successful and sustainable organizations utilize “the set of shared values, beliefs, and norms” to enhance its work and efficiency (Yukl, George, Jones, 2009, p.502). In such environmental and structural authentication, leadership is essential for favorable evaluation, development, and implementation of sustainable energy management.

Sustainable energy management in Grand Rapids, MI

The City of Grand Rapids employs approximately 1,500 employees and is the second largest municipality in Michigan (City of Grand Rapids, 2016). Since 2004, the City has successfully implemented innovative sustainability strategies and incorporated them effectively into City’s operations and culture (Alibašić, 2014 & 2015; City of Grand Rapids, 2015; City of Grand Rapids, 2016). The city employed sustainability at all levels to critically evaluate and appraise existing services and to improve operations, cut waste, and reduce costs for the organization. In addition to successfully transforming operations, a certain level of empowerment of employees occurs in the workplace manifested through sustainability. As employees design their work processes, they are more effective in creating the desired outcomes with the explicit association to the budget.

Sustainable energy efforts in the City of Grand Rapids date back to 1987 with the first energy audits evolving overtime to nascent energy efficiency strategies. Energy conservation efforts have remained a centerpiece of the overall sustainability efforts of the city. Besides, the city has been consistently analyzing cost-effective opportunities for on-site energy generation, including the use of wind turbines, solar panels, and geothermal production techniques. Initial successes in these areas have led city leaders to commit to the target of obtaining 100% renewable energy by 2025 (Steiner, 2017; City of Grand Rapids, 2016). The city is regularly listed on the U.S. Environmental Protection Agency Green Power Partnership list, a program that features the organizational procurement of green power by offering expert advice, technical support, tools and resources (EPA, 2018).

Methodology

The methodology utilized in this research is in alignment with the grounded theory from a constructivist perspective as outlined by Charmaz (2014). Moreover, Birks and Milles (2015) described the growing popularity of a grounded theory approach in qualitative data research for generating emergent theories from data. According to Charmaz (2014), the goal of “grounded theory strategies is to focus data collection” on constructing theories (p. 87). Moreover, Charmaz and Belgrave (2012) added researchers routinely use interviewing for data collection where grounded theory is being utilized for qualitative studies. Grounded theory is employed to assist with explaining the interconnection of sustainable energy management, organizational leadership in local governments. Accompanying grounded theory design added a dimension to the research findings.

A qualitative, purposeful sample study of the city’s sustainable energy efforts was conducted to confirm or dispute the connection between leadership and sustainable energy. An evolving dynamic between the concepts of sustainability and leadership was examined, focusing on sustainable energy initiatives. In line with Patton’s (2002) recommendation for critical case sampling with the most impact, a purposeful sample of twenty (20) top-management level employees, elected and appointed officials, and community leaders from

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the city was selected and then interviewed using the specific questions. Of those 20 identified interviewees, each had an active, leadership role in sustainable energy, whether in a management position or as a direct stakeholder related to sustainable energy.

Table 1. Demographic data of participants

<table>
<thead>
<tr>
<th></th>
<th>Community representatives</th>
<th>City representatives</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Elected officials</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Management/director</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Mid management</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>15</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 1 describes demographic data of participants and professional positions of the interviewees.

Patton’s (2002) and Creswell’s (2007) approaches to a conceptual framework for using the purposeful sampling strategy and strategies in dealing with case studies were utilized in this research. Yin’s (2008) recommended the use of a case study for examining social issues. Huberman and Miles (2000) provided an additional structure on for data collection methodologies in case studies, including interviews. An in-depth analysis of the sustainable energy management by the City of Grand Rapids provided an opportunity to examine the economic, environmental, and societal impact of such efforts internally and externally. The method of analysis was in line as suggested by (Stake, 1995; Wolcott, 1994; as cited in Creswell, 2009) for the case study. Multiple points of data collection allowed for participants’ perception to be included in the research outcome. Furthermore, the qualitative data was collected and then analyzed for themes, in line with Creswell’s (2009) recommendation for primary qualitative research (p. 184).

In identifying purposefully selected site and individuals for collecting the qualitative data Creswell (2009) suggested face to face interviews with city representatives and review and analysis of the qualitative publicly available documents such as reports related to sustainability. In using grounded theory approach, Charmaz (2014) emphasized the theoretical applicability of interviews rather than the full accuracy. The City’s internal documents added a further dimension to the qualitative portion of the research, shedding light on operations and strategies related to sustainability. However, the internal documents did not offer an in-depth overview of data needed for this study in as much as interviews did with rich and thorough responses. The interviews were conducted on-site in the City of Grand Rapids. The more extended period for a qualitative study at the city ensured the reliability of data and integrity of research.

Walden University's Institutional Review Board (IRB) approval number for the study is 05-09-13-0186190. To add rigor to the study, after setting up the boundaries of the research, the strict data collection procedure to ensure the integrity of data was incorporated. After recording them, the interviews were transcribed and coded, as recommended by Stake (1995) using NVivo software for categorical aggregation denoting significance in the inquiry. Categorical aggregation was utilized to support looking for categories and themes. The study included analysis of the data with themes and utilization of NVivo software and its Node methodology, producing the coding density and strength in a meaningful order. By coding a specific part of the data and placing them into nodes, using the NVivo enabled a more cohesive organization of themes rigorously. Further analysis by looking at a hierarchical relationship was prepared by using the Framework Matrix in NVivo. By observing broader categories of data, various patterns and meanings were recognized from collected data and concepts behind each interview and to see the hierarchal interactions between the results.
Results

Based on the overall themes collected from transcribed interviews, questions about the impact of sustainable energy on the overall sustainability of the organizations generated a generous amount of constructive and indispensable responses. The effect of sustainable energy, defined as energy efficiency, renewable energy, and energy management is summarized through the lens of the resilience of the organization and the community, good governance, transformation and awareness, cost reduction, savings, cost avoidance, and efficient delivery of services. While there are varying themes that have occurred under different questions, a consensus of themes from research results was identified:

- Answerability and Good Governance.
- Triple Bottom Line Benefits.
- Embracing New Technologies and Systems.
- Building Resiliency through Transformation and Awareness.

In particular, an impressive portfolio of responses was collected through the theme of Building Resiliency through Transformation and Awareness. A summary of those responses emerged under the subset of themes focusing on Awareness and Improved Culture and Leadership, and Sustainable Organizations. According to responders, an intricate and irreplaceable connection between the organizational resilience, sustainability, transformation, and culture and leadership exist within an organization. The theme relies on a subset of themes focusing on Awareness and Improved Culture and Leadership, and Sustainable Organizations. The theme links to all the research questions, but most precisely answers the research question about a relationship between the impact of sustainable energy management on organizational efficiency and effectiveness, fiscal, and overall sustainability.

When compared to overall patterns from each interview, sustainable energy is viewed as an opportunity. In the words of interviewees, sustainable energy has a potential transformational and cultural impact in the community and organization. This view of transformation is the common theme among all but one interviewee, and the common thread and pattern transpired from interviews. As one of the community members interviewed for research noted: "Efforts for the sustainable energy management have been transformational." Interviewee 11 also added that as changes were made, and everyone responded to "the accepted norms to be more efficient" but those changes "would not have been made without a concerted effort and without changing the expectations and the norms." Likewise, Interviewee 17 responded that relationship between sustainable energy management and overall sustainability is unlimited "from an energy concept and a cultural people concept" further explaining that both have a positive effect on each other. Furthermore, Interviewee 17 added:

“Getting a buy-in and understanding how to be more energy efficient from a process standpoint, and coupled with renewable energy at the same time, not only is it driving cultural transformation, with how to do things from a business practices, but that also turns into conservation, which inherently turns into energy savings in some form.”

As noted by Interviewee 18, in addition to the cost that city pays, “there is an impact on the awareness that energy use has on the environment and overall cost that we pay” as a result of keeping track of costs for the past 10-11 years showing that costs kept rising. Interviewee 18 further noted, “As people became aware of these costs and started making changes, now these costs are going down, down, down every year,” concluding the city is “heading in the right direction.” Interview 13, directly involved in sustainable energy project management, noted that major shifts are occurring “even within the last ten years, of people being aware of not only having energy, looking at energy, and saving energy here and there, but we are evolving into the big picture mindset.” The Interviewee 13 continued saying the process of
change starts with “simple things like being conscious of where we are now, where we were five years ago, what improvements have we made, and what improvements we can make.” Furthermore, Interviewee 13 noted the impact of energy use has beyond the organization “now we are also looking at where the energy is coming from. Is this the best source of our energy, and now realizing that energy creation does have an impact on regional environments, and the area in general.”

Interviewee 12 explained how the City’s transformation plan is linked to the Sustainability Plan and is “integrated into it, but it is working on the operational side to transform our operations, and to provide a sustainable operational platform, which is essentially a lower cost platform than the trajectory we have been on.” When describing sustainable energy in the city’s operations, Interviewee 3 pointed out many benefits of the sustainable infrastructure and the ability to evaluate such relationship between sustainable energy management and efficiency in the organization, stating: “It has a considerable impact, catalyzing the various departments within the City to work within their organization to see what they could do for more sustainable practice.” In response to the question on how sustainable energy management impacts the city's triple bottom line, social, economic, environmental decisions, Interviewee 20 believed that "there is a culture that develops, culture of energy efficiency, culture that can be bred out of being conservative, and being good stewards of the resources.” According to respondents, sustainable energy provides multiple opportunities to benefit the organization. The willingness of the organizational leadership to embrace those opportunities can have significant positive impact on social, governance, economic and environmental aspects of the community. In building resilient communities, organizations providing essential public services use sustainable energy as an opportunity to tackle short and long-term costs. Additionally, leaders use it as an opportunity to serve the public from reinvestments and savings achieved in applying sustainable energy.

The interviewees provided an abundance of in-depth descriptions responses, indicating the evidence of the impact of sustainable energy management on the organization. The research results reveal the relevant conclusions about successful organizations and communities engaged in sustainable energy management.

Discussion

The role of government is often characterized by its ability to provide services to its constituents. In recent years, the concept of sustainable energy management as a system of good governance and cost containment became more prevalent. Traditionally, researchers have focused on large-scale benefits from either renewable energy, or energy efficient, but not in the overall context impact on the transformation of the local governments. Researchers (Keirstead, Jennings, & Sivakumar, 2012; Lin and Huang; 2009; MacKay, 2009; Houck and Rickerson, 2009) noted the direct impact of the application of sustainable energy management in local governments. Scholars in this field have documented the purpose and benefits of sustainable energy in local governments’ operations and communities, focusing on specific delivery of sustainable energy using case studies. By linking applied sustainable strategies to local governments and testing for a positive impact from such actions in communities, the applicable grounded theory method was utilized within the context of sustainability and the positive social changes that occur as a result.

This qualitative research study demonstrated the effectiveness of the city’s sustainable energy efforts and practical strategies that could enable other communities to learn from these particular policies and programs. In general, interviewees believed that successful energy management, including energy consumption reduction, and managing the issue or rising cost would unavoidably lead to improved management and maintenance of infrastructure, systems, equipment, and assets. Furthermore, the city employs its sustainable energy management as an attempt to further operational efficiency, and to address economic, environmental,
governance, and social aspects of activities in delivering services, described as the Quadruple Bottom Line (Alibašić, 2017). The findings directly related to the research questions on the impact of sustainable energy management and subsequent measurement and reports.

The data indicated that city staff made a conscientious effort in delivering sustainable energy programs and that robust correlating support from the community and political leaders is needed and available. The city has been engaged in saving energy, reducing energy consumption, changing energy outlook, reviewing outside energy providers, and looking at cost function from a sustainability perspective. The city has evaluated functional infrastructure and systems, engineered new solutions to decrease pollution, reduce cost, and provide better outcomes for taxpayers. Moreover, the financial results are further evidence of the impact of the practical application of sustainable energy policies. As noted in a recent statement by the Deputy City Manager, Eric DeLong, using energy efficiency projects alone, the city was able to save over $25 million (Steiner, 2017). Additionally, future cost avoidance is expected from investment in renewable energy projects (Steiner, 2017). A principal focus on frugality and fiscal responsibility are evident throughout the city organization.

Building resiliency through transformation and awareness

Interviewees offered compelling responses related to sustainable energy outcomes, changes in organizational culture, and a general theme of transformation and leadership. In describing sustainability as an opportunity Laszlo and Zhexembayeva (2011) suggested the sustainability be viewed as an added benefit. There is overall confidence that sustainable energy management has a positive impact on operations and meets community expectations for transformation. As pointed out by Fiksel (2003) organizations are better off embracing and dealing with uncertainty to adapt to changes, rather than avoiding it (p. 5338). Transformative measures were undertaken by the city’s leadership to build a stronger and more resilient organization ready to respond to changing demands and surrounding economic and environmental threats and uncertainty. The transformation towards sustainability is viewed as an opportunity for building more resilient organizations and communities.

Conclusion, policy implications, and recommendations

The research explored the impact of sustainable energy management in local government, its applicability and practicality. It built on previous literature, studies, and findings, and addressed the considerable gaps that still exist in the under-researched field of study. In exploring sustainable energy management within local governments in the context of sustainability, the research advances specific impacts from sustainable energy and its connection to organizational leadership. As today’s organizations deal with an increased level of complexity and existential threat, their leadership is continuously challenged to adapt to changes, to evolve and transform to create and maintain sustainable organizations (Ireland & Hill, 2005; Metcalf & Benn, 2017; Uhl-Bien, Marion & McKelvey, 2007).

As explained by Bringer, Johnston, and Brackenridge (2006) grounded theory is used to create a reality-based theory (p. 251). These reliable, reality-based outcomes of the research are evidenced throughout the study. However, while this inquiry generated a potential positive alignment between sustainability and leadership, further research is required for an onset of the new theory. The findings from the interviews and the follow up analysis revealed that there was a positive impact on organizations and communities attributable to sustainable energy management. The implications of the results of this study in institutionalizing sustainable energy management include transformative changes for public administrators in the local governments, benefits of a more productive leadership, and more resilient communities.
Leadership strategies for embedding sustainability and resilience

The findings of this research are consistent with previous inquiries of cities and the impact of renewable energy, energy management, and energy efficiency (Alibašić, 2015 & 2017b; Bossink, 2017; Hughes, 2009, Houck & Rickerson 2009; Lin & Huang, 2009). Furthermore, findings document a correlation between the successful implementation of sustainable energy management and leadership. The interviewees shared a sense of pride and ownership as being part of the sustainable energy management, and relevant policies and programs. It became evident during the interviews that staff directly and indirectly involved in sustainable energy projects spoke with a sense of pride and ownership. The research demonstrates how employees control builds capacity for accountability and good governance, leading to universal leadership for those involved in sustainable energy efforts within organizations, and focusing on final deliverables for the entire organization. There is a sense of synergetic direction that starts from the top and spreads across the organization and is supported by the community.

Additional research is needed to compare sustainable energy efforts across a spectrum of cities and programs, and to prove the concept of answerability and good governance, as well as the concept of resilience through transformation and awareness. Finally, several respondents were concerned about future of sustainable energy efforts with an impending change in leadership. Future studies focusing on the transitional aspect of leadership in the context of culture change and transformation towards sustainability would be advantageous to organizations. The organization benefited from having a structured leadership engagement in planning and implementation of strategies related to the sustainable energy management. Moreover, future investigations should include the views of city staff not engaged in sustainable energy.

References


Leadership strategies for embedding sustainability and resilience


Developing and continuing sustainability-related academic programming: Observations of emerging practices

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Abstract This paper offers an overview and summary of selected sustainability-related academic programs and certificates delivered by universities and colleges that are located within the same geographic area (Grand Rapids, Michigan, U.S.). The authors evaluated the holistic and practical dimensions of creating and sustaining educational programs and reviewed emerging outcomes from universities with a history of prosperous programs to recommend models of applicability. The study focused on the role of internal and external leadership, political and appointed officials, networking of various stakeholders, demand for sustainability in education, and the resources commitment in staffing the programs. The authors analyzed internal reports and documents in the context of sustainability in education and longevity of programs. The findings related to the concepts of successfully developing and sustaining sustainability-related academic programs in Grand Rapids (MI) are examined within a broad and holistic context encompassing educational, programmatic, socioeconomic, organizational, and leadership dimensions. While further research is warranted, all elements add value to the conceptual framework of developing and supporting sustainability-related academic programming, with potential lessons and implications for programmatic approaches to education domestically and abroad.

Keywords: sustainability, local governments, universities, education

Introduction

This review focused on emerging practices in developing, embedding, and maintaining sustainability-related academic programming and sustainability studies in higher education institutions. The sustainability programs reviewed for this research are located in a single geographic region (Grand Rapids, MI, U.S.). This study analyzed the functions of internal and external leadership, political and appointed officials, networking, stakeholders, demand for sustainability in education, and the resources committed to implementing sustainability in higher education. Specifically, the researchers evaluated internal reports and documents, each in the context of sustainability in education, and a program’s longevity and self-support. Moreover, the authors examined the findings and the concepts of successfully developing and implementing sustainability-related academic programs within a broad and holistic context encompassing educational, programmatic, organizational, and leadership dimensions.

The results function as a template for the success of sustainability programming in domestic and international academic settings. The systemic dimensions of creating and implementing educational programs assist the institution’s leadership in determining the outcomes across a variety of academic disciplines. The application of sustainability programming in academic institutions in Grand Rapids serve to model programmatic methods of sustainability in education, domestically and abroad. While further research is warranted,
this review of the features of sustainability programming adds significance to the conceptual framework of developing and continuing sustainability-related academic programming. Moreover, potential lessons and inferences are applicable to the programmatic approaches to sustainability education domestically and abroad.

**Literature review**

The United Nations University-Institute for Advanced Study of Sustainability (UNU-IAS) report (2014) described the local context of sustainable development as fragmented with disregard for synergies (p. 54). However, as noted by the National Research Council (2009), most collaborations between universities and various sectors is in the area of sustainability and sustainability in education (p. 38). This history of cooperation is evident in specific areas of research, but very little has been reviewed and written regarding collaboration between cities and universities in the field of sustainability, especially given the nascent nature of sustainability. Jentleson (2011) appraised the historical role of partnerships between cities and universities in studying and addressing social problems, asking a question of how “universities, communities, and civically engaged citizens can become better together” (p. 7). In a comprehensive literature review, Jabareen (2012) discussed the confusion and misconceptions surrounding the definitions of sustainability and education.

As the world on a macro-scale and communities on the micro-scale face ecological and social challenges, and prepare for potential economic and environmental trials, there is a mandate for more integrated programming in education where systemic, sustainability-related challenges are considered using interdisciplinary paradigms. Academic institutions play an essential role in fostering research, exchanging ideas, and applying practical sustainability in organizations and communities. The concepts of sustainability, sustainable development, triple bottom line (TBL), and quadruple bottom line (QBL) in organizations and communities, along with the history of sustainability planning are well understood, explained, and summarized (Alibašić, 2017, 2018a). While most organizations are concerned with their financial bottom line, the triple bottom line strategies used in organizational planning encompass the economic, environmental, and social issues involved in organizational planning. Moreover, the quadruple bottom line approach to sustainability considers the financial, governance, social, and environmental outcomes of actions and decisions made by an organization (Alibašić, 2017 & 2018b). The TBL provides a conceptual framework for sustainability. However, the QBL expands the framework to include the governance and related functions of accountability, transparency, and stakeholder engagement.

The prerequisite for incorporating sustainability science into a curriculum is researched and documented in-depth, as are considerations of the interconnectedness between education and sustainability (Barth & Michelsen, 2013; Blewit, 2004; Thomas, 2009). Moreover, Sterling (2007) dissected the integrative archetype form in sustainability edification using the Resilience Theory. The notion of sustainability in education has its roots in the cornerstone of educational opportunities to holistically and systemically incorporate the elements of economic, social, environmental, and governance in the classroom setting. The ideas and concepts of sustainability serve a multidisciplinary and an interdisciplinary role in academic settings. Sustainability promotes systematic planning in community-wide and academic-specific settings and allows for stakeholder engagement around common targets and objectives (Alibašić, 2018a). The commonality of goals and objectives is essential to the interdisciplinary nature of sustainability.

**Sustainability in community, universities, and college in Grand Rapids, MI**

Grand Rapids and its local government are renowned nationally and internationally for the integration of sustainability practices, both community-wide and within institutions (Alibašić, 2017; Light, 2013; Portney, 2003 & 2012). The city was recognized by the U.S. Conference
of Mayors, the Earth Day Network, the Clinton Global Initiative, the U.S. Chamber of Commerce, and was examined in-depth in articles and research papers from ICLEI-Local Governments for Sustainability, National League of Cities (NLC), and the International City-County Managers Association for its positive advancement of sustainability (Alibašić, 2014, 2017; Beeke, 2010; McCarty, 2012; Wogan, 2014).

An aspect of effective sustainability-related undertakings and delivery of sustainable outcomes in the community is the ability of universities and colleges to pilot and integrate practical sustainability-related initiatives on campuses and in their curricula. Grand Rapids is home to more than fifteen institutions of higher education, each actively engaged with sustainability-related studies. Some of these institutions are based in the community, while others have an active presence through extensions and satellite offices. Specific institutions include Aquinas College, Calvin College, Cornerstone University, Davenport University, Grand Rapids Community College, Grand Valley State University, Western Michigan University, Kendall College of Art and Design of Ferris State University, Central Michigan University, and Michigan State University (Experience Grand Rapids, n.d.). Each of these schools offers sustainability science and sustainability programming in various formats, as integral to the core teaching mission of the respective institution. Similarly, each institution includes course offerings, curricula development focusing on sustainability, and distinct certificate or degree programs.

Almost every academic institution in Grand Rapids has a sustainability office that is staffed by faculty who serve as sustainability champions. In addition, each has an assigned director or sustainability officers. In the case of Grand Valley State University (GVSU), the city’s former mayor serves as the sustainability coordinator for the university’s Office of Sustainability Practice (GVSU, 2018). One of the office’s initiatives is to select and award an annual sustainability champion from within the university and another drawn from the community.

Moreover, the City of Grand Rapids enters into a yearly contractual agreement with GVSU’s sustainability office to use its academic research and talent capacity to engage students in internships wherein they provide research and other support for the city’s Office of Energy and Sustainability (Alibašić, 2017 & 2018b). This arrangement involves the city providing an annual stipend to support student interns to work with the Office of Energy and Sustainability (OES), which is housed in the city’s executive office and provides the direct funding and oversight of this work. In turn, the university provides research, administrative assistance, and technical support for the city in its sustainability efforts, and more recently, supports its resilience planning. Specifically, GVSU students provide support to the OES in the following areas of sustainability: sustainable energy, water resources, parks, climate-related research and planning, updates to the city’s Sustainability Plan and reporting, local and regional and other areas of study, and applied sustainability. In addition to leveraging student talent, several GVSU professors advance progressive, sustainability-driven research agendas. Partnerships and interactions such as these serve to leverage significant resources in the field of sustainability, provide continued dialogue and focus on issues of sustainability, and maintain momentum in the areas of strategic importance for the city and the community. Other noteworthy sustainability programs and initiatives at higher education institutions in the Grand Rapids area include Aquinas College’s sustainability initiative and its long-standing sustainable business degree (Aquinas College, n.d.). Aquinas College offers numerous courses outside the sustainability program that concentrate on sustainability, and the college’s sustainability researchers and representatives have an active presence in the community.

Calvin College is another institution that hosts several majors and minors in sustainability. The institution also delivers an annual sustainability progress report (Calvin College, 2018a). Likewise, in addition to numerous sustainability courses and initiatives, Calvin College’s president is actively involved in sustainability efforts, and the college is a signatory to the

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Presidents’ Climate Commitment (Calvin College, 2018b). Davenport University offers programs and courses in sustainability at both undergraduate and graduate levels and carries out an active sustainability agenda on its campuses (Davenport University, 2018). Kendall College of Art and Design of Ferris State University hosts the Wege Center for Sustainable Design and employs a full-time chief sustainability officer (FSU, 2018a and 2018b). Finally, Grand Rapids Community College ingrates its sustainability courses into major and minor programs, and includes sustainability in its mission core values (GRCC, 2018a & 2018b). The postsecondary instructional activities noted above, including partnerships with local municipalities, serve as meaningful examples. However, closer examinations identify notable catalysts and organizational supports that are necessary for successfully implementing and sustaining university-based sustainability programs.

**Notable sustainability-related catalysts**

**Community sustainability partnership**

Together with Aquinas College, Grand Rapids Community College, Grand Rapids Public Schools, and Grand Valley State University, the city created the Grand Rapids Area Community Sustainability Partnership in 2005 to encourage and share sustainability practices between organizations in planning and operations (Alibašić, 2017; GRCSP, 2018). From five founding partners, the community sustainability partnership increased to over 280 (GRCSP, 2017). To date, all area colleges and universities continue to engage as active participants in a community-wide sustainability partnership.

Of note, in reviewing the development of these collaborations, many crucial elements for sustained partnership are apparent. Each community partner shares the nomenclature of sustainability practices. However, perhaps more importantly, they are also authentic in their respective approaches to onboarding sustainability-oriented initiatives. While these efforts are undoubtedly diverse across institutions—often driven by resources—the efforts included the engagement and education of the broader community, while simultaneously increasing community value for sustainability practices (Kretzmann & McKnight, 1993). Achievements are evident through tangible outcomes, such as the creation of successful sustainability public-private partnerships in the region, active pursuit of the green buildings and design, and the formation of the GR2030 energy efficiency district in downtown as a partnership between the city and commercial building owners (Alibašić, 2017). Numerous national recognitions awarded to the City of Grand Rapids arguably raised awareness of sustainability as the brand recognition for this community.

**United Nations University – Institute for Advanced Studies Regional Center of Expertise for Education in Sustainable Development**

In 2007, the United Nations University-Institute of Advanced Studies named Grand Rapids as the first Regional Center of Expertise (RCE) for Education for Sustainable Development (ESD) in the United States (Glasser, 2010). There are nearly 130 RCE organizations worldwide, serving as a mobilization network to advance sustainability in the private and public sectors and higher education (UNU-IAS, 2014). Glasser (2010) explored the RCE model as social learning for sustainable communities through its flagship project, the Center for Economicology at City High/Middle School in Grand Rapids, and observed the outcomes relative to embedding sustainability in a high school setting. The community engagement with RCE through its Grand Rapids Community Sustainability Partnership (GRCSP), the city’s sustainability office, and universities has continued to the present time. In 2015 and 2016, the community’s colleges and universities partnered with local government to host the UNU-IAS RCE Conference of the Americas in downtown Grand Rapids, as well as the UNU Youth Conference focusing on water protection (RCE, n.d.).
Leadership

The commitment to sustainability among elected and appointed officials and university leadership is evident in all functions of local efforts to promote, embed, and implement sustainability initiatives. Evidence of such commitments involved institutions identifying and allocating resources (e.g., proactive talent acquisition, encumbered budgets) and publically recognizing sustainability initiatives as evidence of institutional values. University and college presidents were personally involved in signing the original community sustainability partnership agreement with the City of Grand Rapids’ former mayor. When leaders were reconvened at a later date, the presidents of GVSU and GRCC attended regular CSP leadership meetings.

Conclusions

Tactics used by several colleges and universities with a history of successful sustainability studies programming are provided here as models of applicability. The appropriate methods from such nurturing environments to sustainability in education are drawn and summarized through the following characteristics of these successful programs:

1. Networked governance of various factors involved in sustainability, from local governments to businesses to universities. The City of Grand Rapids has a formally established community sustainability partnership with over 280 organizations from both the public and the private sectors involved in implementing and measuring sustainability. The private and public sector organizations officially adopted the sustainability plan to measure and track sustainability-related outcomes. Noteworthy collective activities included community asset mapping aligning sustainability services and initiatives with community priorities and values, and working to enhance natural capacities and network. It is vital to note that as a result of networked governance practices a variety of collaboration strategies have emerged throughout the region in support of sustainability (e.g., partnerships such as West Michigan Sustainability Partnership, alliances such as 2030 District, and coalitions such as regional resilience report coalition).

2. Internal and external political leadership. College and university presidents are publically demanding and promoting sustainability in educational programming at their institutions, and when possible working to collaborate with community partners and one another. Political and business leadership buy-in and support for sustainability are instrumental in creating the demand for sustainability studies in education. Such leadership resulted in enhanced organizational synergies, shared and efficient use of resources (e.g. avoiding duplication of services and sharing of resources to overcome obstacles, such as joint public safety agreements to improve service delivery). Furthermore, it led to enhanced community awareness, and opportunities to leverage partnerships in pursuit of additional funding sources (e.g. government grants, foundation funding such as the recent case of regional application for federal resilience grant or tackling climate resiliency) (Price, 2014; Steiner, 2017; Weick, 2015).

3. Demand for sustainability studies in education. The competitive nature of the region and branding the area as the hub for sustainability has driven the demand for these educational programs. As an example, companies compete to be branded as sustainable, and as such, there is a high demand for programs that produce sustainability-related degrees or certificates. Major corporations in the region are members of the West Michigan Sustainable Business Forum, from Amway, Steelcase, Cascade Engineering, Gordon Food Services, Herman Miller, Meijer, Perrigo to Progressive AE and Rockford Construction to name a few (WMSBF, n.d).

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Leadership in these corporations demand that sustainability is fully embedded in the corporate strategic planning framework. Moreover, each has a designated staff responsible for sustainability-related outcomes.

4. **Dedicated staff, faculty, and resources.** Each institution has a dedicated team or staff promoting sustainability across campuses and within organizations, networking, and embedding sustainability from within and sharing emerging practices within the community. Personnel dedicated to supporting and growing a community-based sustainability agenda serve in roles such as conveners, facilitators, organizers, capacity builders, evaluators, and in some cases funders.

**Outcomes and further research**

This study focused on the role of internal and external leadership, political and appointed leadership, networking of various stakeholders, and demand for sustainability in education. While further research is warranted, predictably, the findings added value to the conceptual framework of developing and supporting sustainability-related academic programming applicable to the programmatic approaches to education domestically and abroad. The researchers evaluated various elements in the context of sustainability in education, and a program’s longevity and self-support. The outcomes indicate a broad range of community support, internal and external stakeholder dynamic necessary for longevity and success for the implementation of sustainability initiatives, and the broad business engagement. Sustainability programs cannot be devoid of potential synergies within and outside of the organization, and sustainability programming must be coupled with hands-on, practical application of sustainability on campuses and in communities.

The findings, which focus on the concepts of successfully developing and supporting sustainability-related academic programs in Grand Rapids, are observed within a broad and holistic context encompassing academic, programmatic, socioeconomic, organizational, and leadership dimensions. In many instances, robust internal leadership and external (community) support for sustainability in education are as instrumental—and varied—as effective leadership. In reviewing the region’s sustainability-related academic programs and their resulting certificates and degrees, similarities in approaches and common elements guaranteeing success are apparent. This research further explores the holistic and practical dimensions of creating and supporting sustainability-related educational programs. It also provides lessons from postsecondary institutions with a history of successful sustainability studies programs as models of applicability. The possible effects of the formalized level of sustainability in higher education and different aspects of programming and certificates at colleges and universities in a single geographic region provided a comparative perspective.

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Sustainability-related academic programming


Using a systemic design paradigm to develop sustainability leadership and build organizational interdisciplinary sustainability platforms

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Abstract This article explores a doctoral sustainability leadership course in an interdisciplinary leadership program. Learners in the course study sustainability and sustainability leadership from a systemic design perspective. They are invited to become visionaries who work across boundaries and disciplines with cooperative and reflective spirits to find integrated solutions for complex organizational problems. The first section provides course background information on the interdisciplinary, interdependent, and integrated complexity of the sustainability movement. It also examines the different and often ambiguous understandings of sustainability and why a systemic design platform might provide a more expansive vessel for sustainability leadership and projects. The second section investigates systems thinking, design action, the nature of change, and dialogue—the core of good design. The third section uses a learner’s case study Air Combat Command Sustainability Design Project to illustrate how an organizational leader built a sustainability plan unique to his organization. Five domains (Ben-Eli, 2012) provided the overarching infrastructure. Although each domain embodies a separate area, together they make up a unified organizing principle that works toward integrating essential elements into a strong infrastructure. The article concludes with reflections from both the course facilitator and the course learner.

Keywords: sustainability, sustainability leadership education, sustainability leadership development, systemic design, complexity, change

Introduction

This article explores a sustainability leadership course that uses a systemic design platform. The course rationale asserts that the more leaders encounter problems of the 21st century, the more they realize that complex situations cannot be understood in isolation. Familiar systematic problem-solving approaches or the “orderly sequence of events” which are methodical, sequential, and episodic have proved to be limited when dealing with complex issues (Banathy, 1996, p. 16). Instead, a new frame of reference needs to be adopted. A systemic design perspective provides a way of thinking and a format of practice that integrates complexity and invites innovation through an iterative designed evolution (Banathy, 1993a; Ben-Eli, 2012; Brown, 2009; Chick & Micklethwaite, 2011; Manzini, 2015; Nelson & Stolterman, 2012). At its best, the methods and tools of systemic design help leaders think in a less fragmented way and assist in facilitating change rather than forcing reactive change (Nelson, 1994b). Systemic design also offers a means to transcend “systemic complexities” by giving sustainability leaders a substantial framework when working through difficult and often messy issues (Wolfram, Coleman, & Conray, 2015, p. 649).

The paper is divided into three sections. The first section provides course background information on the interdisciplinary, interdependent, and integrated complexity of the sustainability movement. A three-pillared concept—environment, economics, and social equity—serves as a foundation to study the history of the movement, its key leaders and
thinkers, environmental policy, stewardship and conservation measures, and social responsibility principles. The second section explores systems thinking, design action, the nature of change from a systems perspective, and dialogue—the core of collaborative design. It also introduces a systemic design inquiry and why a systemic design platform might provide a more expansive and “protective container” for designing sustainability projects (Nelson and Stolterman, 2012, p. 3). The third section uses a learner’s case study to illustrate how an organizational leader built a sustainability plan from a systemic design platform. The final section offers reflections from both the course facilitator and the course learner on strengths and limitations of both teaching the course and implementing a sustainability plan. They also address how organizations can benefit from using a systemic design sustainability leadership approach and framework to build stronger organizational foundations when dealing with complex issues.

Traditionally institutional competencies are developed over time and are tied to professional military education. However, this process can be accelerated through the provision of the specific mission oriented competencies outlined above. Further, Voorhees (2001) noted the advantages of linking and then tracking the desired specific learning outcomes as derived from program mission statements (pg. 181).

Individuals and their relative experiences are different; thus, the learning experiences and resulting competencies developed are different, yet the goal remains the same: developing each Airmen with the skills identified above. Therefore we had to answer the question: How can this be achieved if every individual brings a differing suite of experiences to the table? The short answer is a program designed specifically for Civilian Airman that is flexible enough to adjust adult learning methodologies based on the experiences of a particular student cohort. This is the charter for the Civilian Associate Degree Program.

The Assessment & Selection: Competencies section of the Office of Personnel Management Website defines a competency as a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics needed by an individual to perform work roles or occupational functions successfully. Competencies specify the "how” of performing job tasks, or what the person needs to do the job.

The sustainability movement

Learners who take the sustainability leadership course are doctoral students engaged in an online interdisciplinary leadership program. They come from a myriad of interdisciplinary professions that include elementary education, higher education, athletics, nonprofit, healthcare, business, and the military. Their reasons for selecting the sustainability leadership course are varied. Some are concerned about the longevity of their organization; others are feeling increasing outside pressure to include sustainability into their organizational plan; still others take the course because sustainability leadership has become a popular term, and they are curious; and finally, there is a small but growing group concerned about the state of the Earth.

In many ways, the above comments reflect the diverse views of sustainability and sustainability leadership within academia and the public and private sector. Although the term “sustainability” emerged from the environmental movement of the 1970’s (Edwards, 2005), sustainability has become commonplace organizational language. Indeed, sustainability fits the 21st century organizational mindset because the term has become synonymous with complexity, change, and resilience (Callaghan & Colton, 2008; Pushnik & Hatfield, 2016). In this course, learners are encouraged to view sustainability from deeper and broader perspectives by exploring greater networks and patterns; collaborating across disciplines and organizations; and creating a more holistic, dynamic, and multi-leveled designed platform for problem solving (Ben Eli, 2012; Brown, 2009; Senge, Smith, Kruschwitz, Laur, & Schley, 2010).
Finite earth: Limits of natural systems

The course begins with an overview of the environmental and social state of the world. Meadows, Randers, & Meadows (2004) were the first scientists to point out that complex planetary problems cannot be solved from a linear perspective. Because of their pioneering work, “systems thinking” continues to provide a foundation for current sustainability discussions and possible solutions (Capra 2007; Edwards, 2005; Metcalf & Benn, 2013; Wolfgramm et al., 2015). Learners in the course explore the current trajectory of the planet from following viewpoints: the deteriorating ability to support life; the limits of natural systems; the inevitable impact of climate change; ecosystem degradation; resource exhaustion; and social and cultural disintegration. Terminology such as overshoot, linear growth, exponential growth, negative and positive feedback, sources and sinks, and the tragedy or opportunity of the commons help visualize problems from a much larger framework (Meadows et al., 2004; Senge et al., 2010). Stories of how environmental degradation impact indigenous people are also brought to the table so that learners can better understand the deep connection between the environment, economics, and social equity. As a culminating introductory activity, learners complete a personal or organizational carbon footprint assessment. The assessment serves as a comparative tool to measure personal or organizational consumptive patterns and look for possible areas of change.

The evolution of the sustainability movement

In the ensuing unit, learners explore the works of several philosophers and theologians and come to understand the worldwide sustainability movement as a major paradigmatic shift (Berry, 2009; Macy, 2007; Orr, 2011). Although there are similarities between the Sustainability Revolution and previous revolutions such as the Agricultural Revolution and the Industrial Revolution, the Sustainability movement differs in that it is a decentralized, worldwide phenomenon emerging from the ground up and spurred by diverse groups using alternative and diverse modes of action to take on the complex challenges of our time (Macy 2007; Edwards, 2005). Another course author, in his quest to better understand the movement’s momentum, discovered “over one—and maybe even two—million organizations working toward ecological sustainability and social justice” (Hawken, 2007, p. 2).

Course participants also become familiar with two major events that galvanized global recognition of the Sustainability movement. The first event was the 1987 publication of the United Nation’s Bruntland report, “Our Common Future” which asserted that sustainable development should “seek to meet the needs and aspirations of the present without compromising the ability to meet those of the future.”. The document also proposed that three fundamental criteria—environment, economy, and equality—needed to be addressed at local, regional, national, and global levels. These three components eventually formed a worldwide sustainability platform for countless organizations. The three-pronged format was also adopted by corporate business and renamed the “triple bottom line.” The triple bottom line went beyond traditional accounting standards and became a measuring framework that incorporated three dimensions of performance: social, environmental, and financial (Slaper & Hall, p. 4, 2011).

A second significant event in the evolution of the Sustainability movement was the 1992 Earth Summit held in Rio de Janeiro, Brazil. At the summit, global leaders continued to build from previous conferences, particularly the 1987 Bruntland Report, and agreed on an international action plan called Agenda 21, a blueprint that attempted to reconcile a quality environment and a healthy economy on all levels (United Nations Agenda 21, 1992). While the above two major events provide a basic understanding and grounding of sustainability, course participants also pursue a multitude of other principles, initiatives and alliances that include: The Earth Charter; The Houston Principles; The Hannover Principles; Permaculture.
Principles; CERES Principles; Cradle to Cradle; The Precautionary Principle; Biomimicry Principles; and the LEED Green Building Rating System. In the most recent course, The Paris Agreement on Climate Change and Pope Francis’s Laudato si Encyclical were added to the list.

Finally, learners read the works of several philosophers and theologians who maintain that the 21st century sustainability leader’s most important work is to discover our interconnectedness with the web of life and to calibrate our human demands with what the Earth can sustain (Berry, 2009; Capra, 2007; Macy, 2007; Orr, 2011). As a culminating activity for the unit, learners write a reflective essay that addresses how bringing about needed sustainability change will require a different type of learning, a learning-by-action undertaken in a spirit of collaboration and co-inquiry. They also describe the leadership capabilities needed in bringing about this type of learning community, and they reflect how this praxis-reflection learning model fits with a greater consciousness required for 21st century leadership.

**Collaboration**

After the learners gain an overall understanding of sustainability terminology and philosophical underpinnings, they are invited to collaborate with one or two other participants from different disciplines. The intent of the activity is threefold. First, it expands the students’ range of thinking by comparing and contrasting organizational values. Second, learners look into the future and decide what “limit to growth” (Meadows et al., 2004) will prove to be the most challenging for everybody’s organization. Third, learners determine key factors in the problem and the new forces that are likely to shape it in the future. What does this mean for their organizations? They present their findings to the class as a map, a collage, a sketch or a descriptive paragraph.

An interesting phenomenon consistently arises around the third week of the course. Students begin to express frustration. In their discussion platforms, an important question rises again and again. “If so much is taking place, why is there so little progress?” Learners in the course come to the conclusion that although good ideas and a list of principles may show awareness, words do not provide a suitable foundation to tackle difficult problems. Another factor that creates concern amongst course participants is the consistent warning that due to the deterioration of the planet, the Sustainability revolution must happen much faster than previous revolutions.

**Sustainability’s ambiguity**

Even though sustainability terminologies and sustainability leadership perspectives have flourished over the past decades, some thinkers are concerned about the ambiguity of sustainability rhetoric (Ben Eli, 2012; Callaghan & Colton, 2008; Metcalf & Benn, 2013; Metcalf & Benn, 2012). Although the broad concept of sustainability has come to include such diverse meanings as the triple bottom line, human social-cultural diversity, innovation, business and organizational transformation, corporate responsibility, and resilience (Dolva & Cowan, 2015), sustainability is not about single issues, and it can be a problematic concept for sustainability leaders and sustainability development (Dixon & Fallon, 1989; Filho, 2000; Metcalf & Benn, 2013; Wolfram & Colton, 2015). Questions such as: “What is sustainability? What is a sustainable society? What is a sustainable organization?” have been difficult to define (Marshall & Toffel, 2005, p. 673). Further, when sustainability is understood in a nonlinear manner and takes into account that complex, dynamic, interconnected systems are emergent and unpredictable, grasping a thorough understanding of a sustainable system can be confusing (Callaghan & Colton, 2008; Metcalf & Benn, 2013; Plowman, Solansky, Beck, Baker, Kulkarni, & Travis, 2007; Thompson & Cavaleri, 2010).
Sustainability leadership

The difficulty of understanding the concept of sustainability from a systemic perspective carries over into sustainability leadership. Metcalf and Benn (2013) claim that the multiple leadership styles related to sustainability and the interpretation of how an organization can be sustainable puts an “extraordinary demand on leaders” and “requires extraordinary abilities” (p. 369). Sustainability leaders must know how to interact between overlapping levels of networks, and the chasm between the desire to incorporate and enact sustainability into these different levels can seem a daunting undertaking (Wolfgramm et al., 2015). Because a systemic perspective does not follow a step-by-step plan of action or fit into a particular protocol, sustainability leadership takes on a creative, iterative process where direction and movement is dependent on trial and error, feedback, reflection, and adaptability (Uhl-Bien, Marion, & McKelvey, 2007). Thus, the capacity to learn is integral (McElroy, 2006; Senge et al., 2010), and leadership must shift from a top-down directive approach to a relational leadership role that is comfortable with unpredictable change (Metcalf & Benn, 2012; Plowman et al., 2007). Attaining this type of sustainable organization can be a slow and expensive process with few guiding heuristics (Thompson & Cavalieri, 2010). From this perspective, Missimer, Valente, Meisterheim, & Johnson (2013) describes sustainability leadership as transformational and transactional leadership because complex problems demand a learning environment that continually embrace new attitudes, new skills, and new knowledge.

Outdated ways of knowing

While the grassroots sustainability movement does speak to diversity and the importance of understanding ecological/social equity/economic problems at local and regional levels, sustainability practices at a planetary level are slow to gain momentum. Ben Eli (1997, 2012) feels the sustainability movement lacks cohesiveness and that genuine progress in managing the global environment will require an overarching, coherent, international structure.

Another part of the problem lies in our inability as leaders to envision “new societal responses” (Banathy, 1993b, p. 33). Our social systems, organizations, business models, and educational systems are still grounded in piecemeal approaches or eclectic maneuvers when it comes to tackling complex problems (Metcalf & Benn, 2012; Senge, Camron-McCabe, Lucas, Smith, Dutton, & Kleiner, 2012; Wolfgramm et al., 2015). System designers (Banathy, 1996; Nelson, 1994a) believe that today’s educational institutions are not so much mismanaged as out-of-date. In our attempts to change, we keep reshuffling the chairs because we are guided by a scientific and philosophical logic that favors separation, manageable pieces, and replication.

Staying within familiar yet narrow paradigms “constrains and delimits perceptions and locks us into prevailing practices” (Banathy, 1993a, p. 33). Rittle (1967) defined ill-formulated social system problems with confusing information, confusing ramifications, and conflicting values among decision makers as “wicked problems” (as cited in Churchman, p. 141). He also noted that efforts to tame these wicked problems usually fell back on practical step-by-step systematic problem-solving methods such as the following: understand the problem, gather information, analyze information, generate solutions, assess the solutions, implement, test and modify (Nelson & Stolterman, 2012, p. 16). However, using analytic and reductive modes of inquiry for complex situations often results in polarization, compartmentalized actions, paralysis, and leaders failing to see the problem as a systemic whole (Nelson & Stolterman, 2012).
Systemic design inquiry

Systemic designers believe that a systemic design inquiry offers a more inclusive, integrative forum than a linear problem-solving step-by-step approach (Brown, 2009; Manzini, 2015; Martin, 2009; & Thackara, 2006). First, designers seek desirable outcomes. Ben-Eli (2010) defines systemic designing as “the process of realizing intentions” (key note address). Aspiring to a preferred outcome helps system designers to arrive at a solution or solutions by creating meaning and shaping order within multiple levels of reality (Nelson & Stolterman, 2012; Schon, 1987; Stolterman, 2001). Second, a design culture allows leaders and learners to create meaning from their unique histories and carries an opportunity to unite both knowledge and knowing (Manzini, 2015). Finally, systemic design presents a means to escape a rational and mechanistic paradigm and embrace a world that is “informed by our growing understanding of the complexity and interconnectedness of living systems” (Nelson, 1994a, p. 51).

Systems thinking and design action

Designing and building a coherent sustainable organizational structure on a smaller scale is a major project for leaders taking the interdisciplinary sustainability leadership course. In order to accomplish this endeavor, an important distinction between a multi-disciplinary approach and an interdisciplinary approach toward problem solving must be made. A multi-disciplinary approach is a collection of ideas from different disciplines. It adheres to a uniform problem-solving framework (often in outline form) that attempts to reach a solution through compromise. However, when the problem is complicated, a multi-disciplinary solution often fails because it cannot properly contain complex issues. An inter-disciplinary approach, on the other hand, examines issues from a systemic design perspective, thereby integrating many diverse levels, many points of view, and many disciplines. In doing so, inquirers look for connecting patterns, interacting relationships, and points of difference. Thus, while a multi-disciplinary approach might result in a compromised list or set of recommendations, an interdisciplinary approach embraces a creative composing process, a “compositional assembly” that unifies relationships and connections between elements (Nelson & Stolterman, 2012, p. 159).

In our sustainability leadership course, learners embrace an inter-disciplinary systemic design perspective that synthesizes two important intellectual traditions (Nelson, 1994a; Nelson & Stolterman, 2012). Systems thinking offers the conceptual, theoretical component. It helps conceptualize the complexity, the interconnectedness, and the nonlinear dynamics of organizational systems. Design action provides the pragmatic or the operational component. It utilizes a compositional process, a creative discipline decision making inquiry carried out in iterative cycles that work toward a preferred outcome. Woven together, systems thinking and design action provide a “synergistic potential” or a powerful method to guide change, deal with complexity, and stir innovative practices within organizations (Nelson, 1994a, p. 52).

Understanding change from a systemic design perspective

Designers often point toward living systems as approximations of how a design process works. Bateson (1991) used living systems as examples of systemic change. Change happens in the movement, in the variables, in the perimeters, in the embodied shaping processes between levels of learning that allow participants to make connections because of difference. In the transcendental (linear perspective) world of moving from point A to point B, we often believe we can predict change. However, in the biological world of living systems, change does not occur through force and impact, but through felt difference that comes about by means of trial and error. Change cannot be pegged because one cannot know “when” and “what kind” of change might occur. Nelson and Stolterman (2012) assert that while change has many meanings, it has “considerable importance in a systemic design context” (p. 37).
However, change within a systemic design platform does not come about from a “problem-based reaction,” but rather is “triggered by human intention” (p. 38).

Ben-Eli (2009) also writes that the concept of change can be “full of contradictions and paradoxes” (p. 5). Like any systems thinker, he understands that although stability/change are contrasting conditions, they are inseparably linked. Like Bateson, he notes that change occurs in different levels. First order change is change which “occurs within a system where they system itself remains invariant.” Second order change requires “a fundamental discontinuity and a shift in logical levels,” and this is where transformation occurs. Learners in the sustainability leadership course study these differences prior to project building, because the logical typing between first order change and second order change allows student designers to deepen enrich their observing.

Collaborative reflective practice, the art of conversation, and ethics

In a systemic design format, participants collectively define the values and qualities they seek by engaging in a disciplined inquiry. However, this purposeful intention is not without ethics for several reasons. First, designing is an inquiry-based reflective practice that constantly questions itself as the context evolves. Second, design is a human-centered and collaborative endeavor that seeks to develop empathy as well as respect the rights of clients. Third, as designers and clients seek to create a desired outcome together, they must practice the art of conversing and the art of trust, because it is in these arenas of participation that collective learning takes place (Nelson, 2004). Creating a seamless experience between designer and client requires shared knowledge, and this desired reality approach centers around the art of conversation. Churchman and Banathy, pioneers in the field of systemic design thinking, used the root definition of the word conversation, “to turn together,” as a central tenet for design inquiry (Nelson, 2004, p. 261). Fourth, designers embrace the whole person, considering intuitive originality and invention just as essential as analytical mastery. Finally, because it works toward a preferred outcome, a systemic design platform is a democratic and inclusive practice that has the potential to bring about both individual and collective fulfillment.

Project building

As a cybernetic systems designer, Ben-Eli (2012) emphasizes a comprehensive conceptual structure (systems) and pragmatic action (design) that works toward a preferred outcome. Like other systemic designers (Carson, 2016; Thompson & Cavaleri, 2010), he considers achieving a dynamic equilibrium as key to understanding sustainability. From this perspective, he pays attention to how systems learn and maintain; to the inter-relatedness of stability/change; to the difference between first order and second order change; to how systems adapt and evolve, and to how systems self-organize and regulate. His concept of sustainability (2010) reads:

A dynamic equilibrium in the processes of interaction between a population and the carrying capacity of its environment such, that the population develops to express its full potential without producing irreversible adverse effects on the carrying capacity of the environment upon which it depends. (p. 297).

Ben-Eli (2010; 2012) is also in tune with the idea that we cannot change behavior without changing the internal structure. Instead of attempting to change the outcomes (conventional problem solving), he works on redesigning the underlying structure with five integrated, interacting domains. Although each domain or building block embodies a separate area, together they make up an integrated, interacting organizing principle—a unifying infrastructure. In the sustainability leadership course, learners develop their projects with this idea in mind. They design and build an underlying structure unique to their organization.
Brown’s (2009) design phases—inspiration, ideation, and implementation—make up the organizing template (p. 16). Rather than follow a sequential order, students are invited to create an iterative, nonlinear journey that will loop back through these spaces more than once as they refine ideas and explore new directions.

Below is an organizational case study thumbprint that was designed by a course learner from the military field. Five sections are included in the case study project: introduction, inspiration, ideation, implementation, and a conclusion. Each section of the project will be introduced with background information from the course facilitator followed by the case study example from the course learner.

**Introduction – background information (course facilitator)**

Before starting their sustainability design process, students write introductory information about their organization. In redesigning their organization for sustainability, they are encouraged to include not just their organization, but the surrounding community and ecosystem (Metcalf & Benn, 2012; Wiengarten, Lo, & Lam, 2017). Looking at a bigger picture helps instill what Senge et al., (2010) describe as the need to collaborate and partner across disciplines and sectors. Working alone does not fully address the complexity of the global ecological, social, equity, and economic problem. Rather stewarding healthy commons requires “thinking about the larger system your team or organization is part of and recognizing that business-as-usual practices could easily end up causing everyone to lose” (p. 172).

**Case study introduction – (course learner)**

Offutt (55th Wing) is part of the 12th Air Force, a subdivision of Air Combat Command. Strategic Air Command and Air Force Weather Agency headquarters are both located on Offutt Air Force Base (AFB). Offutt is a Department of Defense controlled military base. The 55th Wing is composed of the 55th Operations, Maintenance, Mission Support, Communication, and Medical Groups, all of which have their own squadrons. The six groups and 32 squadrons execute worldwide intelligence, surveillance and reconnaissance, electronic attack, command and control, presidential support, and treaty verification missions. Each branch of the U.S. military is represented among the approximately 12,000 military and federal employees assigned. Below is a chart depicting the structural organization of Offutt AFB (Offutt, 2014).

<table>
<thead>
<tr>
<th>Institution Name</th>
<th>United States Air Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>906 Sac Blvd. Bellevue, Nebraska, 6811</td>
</tr>
<tr>
<td>Control</td>
<td>Government</td>
</tr>
<tr>
<td>Community Type</td>
<td>Standard urban, middle-class community</td>
</tr>
<tr>
<td>Population</td>
<td>50,137 (Bellevue NE, 2012)</td>
</tr>
<tr>
<td>State</td>
<td>Nebraska</td>
</tr>
<tr>
<td>County</td>
<td>Sarpy</td>
</tr>
<tr>
<td>Elevation</td>
<td>1,052 ft.</td>
</tr>
<tr>
<td>Terrain</td>
<td>Sloping, tiered site</td>
</tr>
<tr>
<td>Soils</td>
<td>Predominantly clay and sand</td>
</tr>
<tr>
<td>Ecosystem</td>
<td>Tall, grass prairie with Platte River running near the base</td>
</tr>
</tbody>
</table>

**Inspiration – background information (course facilitator)**

The inspiration stage is twofold. First, leader-practitioners formulate a vision. In dealing with something as complex as sustainability, Ben-Eli and other systematic thinkers warn against a
**systematic** approach—starting with a problem and then presenting a linear set of goals. Instead, they recommend a **systemic** approach that starts by describing a vision. Meadows, Randers & Meadows (2004) write, “Visioning means imagining, at first generally and then with increasing specificity, what you really want. That is, *what you really want*, not what someone has taught you to want, and not what you have learned to be willing to settle for” (p. 272). Second, even though the learners have been introduced to several sustainability definitions throughout the course, they decide on a sustainability definition that works best for their organization. What definition makes the most sense to present to a group or organization at this particular time? Learners are encouraged to use a definition that provides a useful tool when implementing change, knowing that defining sustainability will evolve as their organization adapts to emerging concepts and practices.

**Case study – inspiration (course learner)**

**Vision.** From our definition, we simply want to do our job without compromising the future. How will we do this? This vision involves getting baseline numbers for the flying and mission support related aspects of our mission. The categories below would require baseline numbers, which would be reviewed semi-annually for all military installations. This would put long term ownership on base leadership.

<table>
<thead>
<tr>
<th>Mission Support</th>
<th>Flying Mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Footprint</td>
<td>Carbon Footprint</td>
</tr>
<tr>
<td>Energy Usage</td>
<td>Energy Usage</td>
</tr>
<tr>
<td>Water Conservation</td>
<td>Flying Hour program Effectiveness</td>
</tr>
<tr>
<td>Waste Production</td>
<td></td>
</tr>
<tr>
<td>Land Utilization</td>
<td></td>
</tr>
</tbody>
</table>

The preferred state here at Offutt would involve one where we make decisions based upon gradually lowering our overall sustainability footprint. This will ensure we are being environmentally responsible when making decisions, big and small. In an ideal situation, Offutt would “compete” with Air Combat Command bases for annual sustainability awards, with the winner of each Command competing at the Air Force level. This could turn into a “battle of the services” to encourage friendly competition between all service branches. It’s a win-win type of situation for all. Baseline numbers would include transparency with reporting both mission support and flying mission calculations. Bases would also include numbers from deployed assets when calculating the overall footprint. Only then could baseline numbers be compared with historical data from multiple bases.

**Sustainability.** For the purpose of Offutt Air Force base, we will define sustainability as combination between the triple bottom line and the 1987 Bruntland Report: “Economic, ecological, and equitable developments that meet Department of Defense needs of the present without compromising the future.”

**Ideation – background information (course facilitator)**

As a whole, the five domains provide a clear, unifying organizing principle designed to ensure effective responses and integrate essential elements. Leaders must take into account all the evolving variables. When does one domain ascend in importance while the others descend? When is it necessary to integrate two or more domains for a new project? Does change require first order change or second order change? This stance requires a flexible mind, a mind that not only knows how to move between different epistemologies or ways of
knowing, but also between the two types of processes: diffusion (the spreading of energies) or consolidation (the compounding of energies). When is imagination appropriate? When is rigor appropriate?

Learners are asked to examine each domain and identify priority points. They describe sustainability practices already established. Can they be improved? What other ideas make the most sense to their institution, organization or workplace at this time? They list ideas and explain selections for each domain. They also look for possible connections and points of integration.

Case study – ideation (course learner)

Ben-Eli (2012) gives us five domains, which together make up an integrated single unity. They work together to collectively enhance sustainability efforts. In this section, we will examine each domain and identify aspects in which they relate to Offutt Air Force, Air Combat Command, The Air Force, and the Department of Defense.

Domain one. The Material Domain “constitutes the basis for regulating the flow of materials and energy that underline existence” (Ben-Eli, 2012). This domain focuses on wasteful and inefficient processes, with a desired end state of lasting efficiency. Facility operations will be considered here. The material domain will be a key factor in determining whether it’s time for a short-term bandage type fix or if it would be more cost and environmentally effective to spend more now to save later. The base will have to do a good job conveying the best information to those who control the budget.

Domain two. The Economic Domain “provides a guiding framework for creating and managing wealth” (Ben-Eli, 2012). This domain focuses on making fiscally responsible decisions. Now is the time to consider long-term costs instead of focusing on the best-case scenario for the near future. In this domain, we will continue to develop on our recycling program as well as encouraging more solar powered energy sources.

Domain three. The Domain of Life “provides the basis for appropriate behavior in the biosphere” (Ben-Eli, 2012). This domain focuses on ensuring the essential diversity of all forms of life in the biosphere is maintained. Here we will consider the overall ecosystem of the base and surrounding areas.

Domain four. The Social Domain “provides the basis for social interactions” (Ben-Eli, 2012). This domain focuses on creating an environment that is encouraging all ideas to be heard, discouraging one individual or group from focusing on their agenda. This domain will encourage feedback, both up and down the chain.

Domain five. The Spiritual Domain identifies the necessary attitudes, the value orientation, and provides the basis for a universal code of ethics (Ben-Eli, 2012). This domain focuses on thinking outside the box to assist global sustainability. It will further demonstrate our Air Force Core Values: integrity first, service before self, and excellence in all we do.

Implementation – background information (course facilitator)

Some thinkers call sustainability a “brave new frontier” because there is no blueprint (Bell & Morse, 2003). There is no one-size-fits all. Often, there is no step-by-step procedure. A good sustainability plan is “multi-scale, multi-disciplinary, and multi-perspective” (p. 1). Furthermore, leaders learn from doing, and leaders learn from experience (p. 5). They proceed through a gauging progress. In this phase of the project, leaders conceptualize design management. Thus, it is imperative to include solid metrics and indicators into their sustainability plan. Measurement will inform a leader about two important points. First, it shows progress. Second, it gives information in how to proceed or which new direction to take. Once leaders have all of the information, they can reflect, and they can act.

In this phase, leaders are asked to find a starting point or two starting points. From this vantage, they examine a communication plan, necessary education or training, tracking
metrics, and a management system. This is where their leadership skills truly come into play. How do they handle the design process and the conflicting demands? What is the measurement of performance in managing their design? How do they deal with the relation between “What to do?” and “How to do?” (Stolterman, 1997).

Case study – implementation (course learner)

**Category one: communication plan.** An effective communications plan will be a key aspect of our sustainability efforts. Now that we are armed with a sustainability plan, we will use it to determine who, how, and when to communicate. Hitchcock, D. & Willard, M. (2008) tell us to be clear about how, when, and what will be communicated to stakeholders to keep our efforts moving forward.

**Category two: education or training.** Now is the time to develop our approach to ensure everyone is trained in our planned sustainability efforts. This will revolve around first and second order change. First order change is a linear progression and occurs within an invariant system. It could be thought of as going with what we are used to. Second order change refers to fundamental discontinuity and a shift in logical level. This nonlinear progression involves transforming from one state to another and requires getting out of comfort zones and learning new approaches (Ben-Eli, 2009).

Obviously, first and second order change will be necessary for our sustainability efforts. The recently installed solar powered lights on our parade field will more than likely be a standard for DoD bases worldwide. While this type of first order change will be painless, second order change will provide a leadership challenge.

**Category three: tracking metrics.** This phase will focus on generating order for the ideas developed for each domain. Our vision and ideation will be transformed from a list of ideas to a working sustainability solution. Here, our baseline chart from our vision will be filled in with initial values, which will give a starting point for each domain. Systematic thinking will come into play with the integration required for many projects. A key point of this phase will be setting short and long term organizational sustainability goals, and setting up direction for how this process will be monitored for continual improvement.

**Category four: charting plan or management system.** Initially, each base will meet with a sustainability director, specializing in systems thinking. This director will travel from base to base, empowering base task forces that will lead their respective base sustainability efforts. In the long run, these task forces will evolve into base sustainability inspectors, responsible for inspecting other bases. The end goal with this type of branching out would be to spread the wealth of sustainability knowledge DoD wide.

Conclusion – background information (course facilitator)

A strong, solid plan maintains an identity. At the end of project development, learners are asked to conclude their organizational design with a short section on how they intend to maintain the growth, the resilience, and the identity of their sustainability plan. As the plan evolves, progress will need to be evaluated using initial baselines. How is data (collected from surveys, interviews, and quantifiable data) used to move in new directions or deepen an existing plan? What type of feedback will allow the organization to learn from experiences? Ben Eli (2010) describes this ongoing synthesis as the ability “to connect to a new more comprehensive, more inclusive intention.” At this point, the process takes on the image of a spiral, “an entity that expands” and grows itself (p. 283). Although the sustainability plan is not identical to the starting conditions, it will maintain its identity and resilience if it generates and deepens into new dimensions.

Case study – conclusion (course learner). Offutt AFB can assist in lowering the global sustainability footprint. While we came up with baseline readings in our vision, this is not
something to simply update and forget about on a yearly basis. Best practices need to be considered, and ongoing updates will be mandated for this program.

The Air Force is already saving money by completing inspections via an online format. Our subject matter experts will do virtual semi-annual staff assistance visits, which will ensure all bases are compliant. This will be done using Management Internal Control Toolset online inspections. Best practices will be uploaded to an Air Force SharePoint website, accessible to all sustainability points of contact.

Final reflections

Course learner reflection

My reflection is based upon sustainability from personal, organizational and global perspectives. The systemic design of the sustainability course referenced in this article enabled the course learner to first examine his individual role regarding sustainability. Here, the use of a learning thermostat, the recent purchase of a more fuel-efficient vehicle, and other factors were examined when calculating their individual footprint. During the course, the course learner examined sustainability from an organizational perspective. As a military aviator, this eye-opening research revealed both the size of the organizational sustainability footprint, as well as current Department of Defense sustainability initiatives. This is simply the reflection of one learner and how he and his organization benefited from the understanding of the importance of implementing sustainability in their personal and professional core values and missions.

Instructor reflection

My concluding remarks and reflection as an instructor are taken from learner discussion comments as well as learner evaluations. A high percentage of the students find the sustainability leadership course worthwhile; some even call it transformative. In the first two weeks, learners become aware of the increasing societal and environmental challenges of the 21st century. However, it is apparent that each year, learners come to the forum savvier and more concerned about society and the state of the planet. This is good news in that recognition of deep problems is growing, yet students also feel a desperation as to what needs to be done and where to start.

The strength of the course is that it provides learners with a unique forum to address complexity. Systemic design offers a framework for building an underlying platform (Ben Eli, 2012), and systemic design provides a “protective container” for maintaining the project as it grows and changes (Nelson & Stolterman, 2012, p. 3). Most students report that they have never been through a whole systems design process. Most find it interesting, a few find it exhilarating, and finally, there are always those who find it frustrating. The course project is not allowed to go past fifteen written pages. The finer projects meet that constraint because learners not only know their leadership role, but they also know how to work with impositions. When projects become too large, learners have taken on leadership roles other than their own. Composing and shaping are skills that need to be learned in systemic design. They are very different than following an outline. They are learned out in the field through action, reflection, and experience, and unfortunately, learners do not get to practice while in the course.

Some students complain that the project is not like writing a usual paper, instead it is like putting building blocks together. However, after they go through the process, they look back and see an abstract design. They learn that the process can be trusted, if leaders rely on action and reflection as their guide. My deepest frustration as an instructor is the eight-week time frame. Learning systemic design is a paradigmatic shift in understanding how to observe and act differently. A few weeks does not give students justice to tackle difficult conceptual
learnings nor practice the composing process of design. An ideal situation would be a two-semester framework. In the first semester, leader practitioners would study systemic design theory. In the second semester, they would build a project within their organization with the support of their colleagues.

In the same manner, our higher education systems need to change as well. With so much information and so much complexity, students often complain about feeling overwhelmed. Because so many changes occurring in the field of sustainability, leaders need a place to return for advice, for the latest sustainability information and measurement, for companionship and collegiality, for creating larger networks, and for sharing their stories. Universities could provide such a place.

As an instructor of sustainability leadership, my greatest challenge is facilitating a learning process that helps organizational leaders acknowledge the need for broader perspectives and new modes of inquiry. Organizations can benefit from using a systemic design sustainability leadership framework. Twenty-first century problems are complex, difficult, and messy. However, our problem-solving procedures, drawn from a rationale analytic perspective, often fall short. Leadership needs new unifying forums to help sort through complexities. Leadership needs to promote and design "new societal responses" (Banathy, 1993b, p. 33). Leadership needs to develop new skills for a changing world. Sustainability leadership from a systemic design perspectives can offer such a platform.

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Educating the interdisciplinary civilian airman

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Abstract Competency Based Education (CBE) is becoming increasingly popular with Department of Defense (DoD) training and education. Air University, located at Maxwell Air Force Base (AFB) Alabama, recently identified CBE as a key factor for consideration in future training. This article discusses Air Force Competencies, analyzes the evaluation of competencies, and transfer of learning. The Civilian Associate’s Degree, currently under beta testing, is discussed as an example of the need to consider transfer of learning with respect to institutional competencies. Beta testing of the Associate of Applied Science Degree in Air Force Leadership and Management Studies is meant to pave the way for the development and implementation of Civilian Airman training. Based on Civilian Associate’s Degree (CAD) Beta Testing student data, our research examines how CAD faculty can best capture professional interdisciplinary knowledge and experiences present in incoming students. In turn, leadership and management theories will add to the student knowledge and experience. This paper is an effort to capture the utilization of previous professional student experiences while developing and updating course curriculum based upon research and Beta Test student data.

Keywords: competency based education, transfer of training, transfer of training, civilian airman development

Introduction

In the Air Force, military members have access to relevant degree programs but there are no analogous undergraduate educational opportunities available to Civilian Airmen. While efforts are made to integrate Civilian Airman into many of the professional development and educational programs associated with Professional Military Education (PME) the number of seats available is quite small. The CAD program, using competency- based methods, is intended to address this lack of opportunity.

The Civilian Associate’s Degree program will be administered through the Ira C. Eaker Center for Professional Development on Air University’s main campus at Maxwell Air Force Base, Alabama. As a federal degree-granting institution, Air University may not offer degrees and course content that could be obtained through civilian institutions. Therefore, students will complete 30 credit hours by transfer or credit-by-exam and 30 hours of instruction through Air University-provided synchronous online courses. This program will emphasize learning outcomes focused on airpower studies, military leadership, and defense management disciplines to build knowledge and skills essential for Air Force civilian leaders.

The courses developed to provide this educational opportunity are hybrid in design. The course incorporates several key elements necessary to meet the specific needs of the adult learner, the CAD program offers the flexibility of online delivery, while ensuring engagement through synchronous webinars to reach the affective domain, and to ensure each course addresses the primary competencies identified by both academia and Air Force senior leaders.
Online learning affords additional opportunities for demonstrating learning and achievement that go beyond those possible in a face-to-face setting (Krause, Dias, & Schedler, 2015.) Students from multiple locations enrolled in the CAD Beta Test have been able to complete mission requirements through a pilot test of the CAD program. Adobe Connect synchronous webinars are offered during lunch hours, and after normal duty hours. Many students participate in the webinars at their desks while at work, at home, or even on their phones. One student, a firefighter, actually participated by using the adobe application on his phone as the passenger of a vehicle responding to an emergency call.

Competency based education (CBE) seeks to evaluate a student’s understanding of a topic through demonstrated mastery of the specific kills or learning outcomes related to the topic (U.S. Department of Education, nd.). The CAD program chose this approach because it most closely mirrors the type of learning the military cohort receives. This approach could integrate the Civilian Airman into the whole of the force as the method of learning and skills required will then be similar. Moreover, the professional Civilian Airman benefits from online learning because of their normal work schedule. With that, CBE is a method of further enhancing online learning for professionals. For example, Dubois (1993) cited CBE as a best practice for leading interdisciplinary organizational change.

Air Force Civilian Airman come to postsecondary education degree programs with a wide range of abilities, experiences, and previous learning. Thus, preparing these adult learners for the roles they will encounter in the workplace is a challenge as there are varied ways they serve in their respective organizational environments (Frush, 2014). Annex 1-1, Force Development, notes how competencies are attributes an individual possesses to allow for successful and consistent performance of tasks under specified conditions, or meeting a defined standard of performance (Fadok, 2006). These competencies enable Airmen to perform their jobs and contribute to the overall success of the Air Force.

Air Force Institutional competencies are broken down into three categories: personal, people/team, and organizational. 8 competencies and 25 sub-competencies are defined throughout Air Force Doctrine, as shown in Table 1.

<table>
<thead>
<tr>
<th>Category</th>
<th>Competency</th>
<th>Sub-Competency</th>
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<tr>
<td>Personal</td>
<td>Embodies Airman Culture</td>
<td>Ethical Leadership</td>
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<td>Followership</td>
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<td>Warrior Ethos</td>
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<td>Develops Self</td>
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<td></td>
<td>Communicating</td>
<td>Speaking and Writing</td>
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<td></td>
<td></td>
<td>Active Listening</td>
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<tr>
<td>People/Team</td>
<td>Leading People</td>
<td>Develop and Inspire Others</td>
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<td>Takes Care of People</td>
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<td>Diversity</td>
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<td></td>
<td>Fostering Collaborative</td>
<td>Builds Teams and Coalitions</td>
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<td></td>
<td>Relationships</td>
<td>Negotiating</td>
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<td>Organizational</td>
<td>Employing Military Capabilities</td>
<td>Operational and Strategic Art</td>
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<td>Leverage Technology</td>
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<td>Force Capabilities</td>
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<td>Enterprise Perspective</td>
<td>Structure and Relationships</td>
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<td>Government Organization and Processes</td>
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<td>Global, Regional, and Cultural Awareness</td>
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Traditionally institutional competencies are developed over time and are tied to professional military education. However, this process can be accelerated through the provision of the specific mission oriented competencies outlined above. Further, Voorhees (2001) noted the advantages of linking and then tracking the desired specific learning outcomes as derived from program mission statements (pg. 181).

Individuals and their relative experiences are different; thus, the learning experiences and resulting competencies developed are different, yet the goal remains the same: developing each Airman with the skills identified above. Therefore we had to answer the question: How can this be achieved if every individual brings a differing suite of experiences to the table? The short answer is a program designed specifically for Civilian Airman that is flexible enough to adjust adult learning methodologies based on the experiences of a particular student cohort. This is the charter for the Civilian Associate Degree Program.

The Assessment & Selection: Competencies section of the Office of Personnel Management Website defines a competency as a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics needed by an individual to perform work roles or occupational functions successfully. Competencies specify the "how" of performing job tasks, or what the person needs to do the job.

Report

Civilian associate’s degree

The Associate of Applied Science Degree in Air Force Leadership and Management Studies is a two-year program offered by the USAF (United States Air Force) Personnel Professional Development School. AF civilians who are competitively selected for this program will attend virtual classes while still performing their primary duties at home station. The Civilian Associate Degree Program (CADP) consists of a curriculum of ten online courses in Airpower, Leadership, and Management (30 credit hours) taught through an instructor-facilitated e-learning methodology along with an additional 30 credit hours of general studies and program-related electives that students will complete through Air Force funded credit-by-exam College-Level Examination Program Subject Standardized Tests (DSST) and/or through transfer credit.

Below are the basic eligibility requirements for CAD applicants:

- Permanent full-time Appropriated Fund (APF) Air Force civilians in any grade
- Minimum of two years of federal civil service by 1 May
- Must have a high school diploma, GED or equivalent
- Must have received an acceptable rating on most recent performance appraisal
- May have some college credit, but cannot have been awarded a post-secondary degree from a regionally accredited two-or-four-year college or university
- Must coordinate supervisor agreement to provide access to a computer for schoolwork and up to 3 hours per week of duty time for class attendance
Civilian Associate’s Degree Core course flow for year one includes: History and Heritage of the Air Force, Professionalism in the Air Force, Foundations of Leadership, Intro to Management, and Principles of Leadership I. Year two includes: Thinking, Logic, and Decision Making, Conflict Resolution, Organizational Culture, Process Improvement, and Principles of Leadership II.

Student demographics

Civilian Associate’s Degree Beta Test students brought a variety of experiences to the interdisciplinary program. Foundations of Leadership was beta tested first, and was made up of 10 students, with an average age of 42 years old. The students had an average of 13 years of experience as a civil service member, and had taken an average of seven college courses upon entrance to the CAD program. Two of the students held the title of director or higher, and three had less than two years of civil service experience. Five of the initial students had prior experience as active duty Air Force or Army. Due to the nature of the beta test, two initial students already had completed an associate level degree.

Benefits and challenges of online learning

Two of the CAD Beta Test students noted how they needed an AS degree to become eligible for promotion. Online learning is a means by which a professional can advance their career. The CAD program is geared towards the adult professional worker. Civil Service workers put in at least 40 hours of work per week, and the CAD program requires students to be available for two different one and a half hour synchronous learning sessions per week. The program is set up where students can work with their supervision to gain permission for live, online webinars before, during, or after the work day. This allows for students around the world to select the best time to learn, based upon their individual time zone and mission requirements. Combined with interactive, synchronous webinars, students also demonstrate mastery of student learning outcomes via discussion board and learning lab posts.

Transfer of learning

Van Doom & Van Doom (2014) argue that the pedagogical paradigm shift in higher education to 24-hour learning environments, encompassing several delivery formats including online courses, blended/hybrid designed courses, and the traditional face-to-face (f2f) lecture classes have increased student access and engagement into global lifelong learning. This argument suggests these shifts do not merely offer access for lifelong learning they make individual lifelong learning necessary for organizations to remain sustainable. Since lifelong learning has become mandatory it is incumbent upon the organization to provide the best possible educational solution that meets the needs of the learner and the organization. In other words, transfer of learning is a combined effort between the learner and the designers of the educational offering.

Mestre (2005) notes how transfer of learning is a term that describes a situation where information learned at one point in time can influence performance regarding information encountered at a later point in time. Transfer of learning can take place in the forms of positive and negative transfer. This is dependent upon whether the context enhances (positive) or undermines (negative) the learned performance in another context (Perkins & Salomon, 1992).

Gagne (1962) paved the way with studies on military training, research, and instructional systems development, examining the most effective ways to train military personnel, as well as how to utilize knowledge gained from both personal and professional development. He was recruited by the Air Education and Training Command due to his Instructional Systems Development (ISD) expertise in the 1990s. His research did not explore individual...
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differences, rather Gagne focused on design of instruction. This research helped further education for military members by focusing on skillsets required for mission accomplishment (Gagne, 1962).

Blume et al. (2010) asserted that transfer of learning consists of two dimensions; generalization and maintenance. Generalization concerns the extent to which knowledge or a particular skill acquired in a learning setting can be applied in a different setting, such as the workplace. Maintenance involves the extent to which a learning experience is maintained over a period of time (de Rijdt, Stes, van der Vlueten & Dochy, 2012). Not only are these two dimensions significant as they relate to transfer of learning they are the critical consideration in the adult learning sphere. In the adult learning sphere transfer of learning is not linear as each experience is a learning event and thus must be incorporated into an overall gain in knowledge, increases in critical thinking, and skills. How that is accomplished is the overarching role of education; in this case, each faculty member is the conductor or facilitator of part of that process. Yet, returning to the original issue, framing the experiences that students bring to enhance learning is no simple task. The idea of presenting information solely via concrete examples may lead to mental representations that are overly bound to a particular context. This could interfere with a person’s ability to recognize an opportunity to transfer relevant knowledge (Day & Goldstone, 2012).

For the CAD program, there are multiple competing demands that must be addressed to ensure transfer of learning does indeed take place. First, one must remember that despite the advancing capacity of information and communication technology (ICT) to deliver instruction, the mere use of technology is not sufficient to ensure learning (Neto, Huang & Melli, 2015). Thus, the use of adobe connect for synchronous webinar’s is designed to ensure we engage the student in a way that replicates traditional face-to-face delivery; guided discussion, mini-lecture, quizzes, and so forth.

This approach mitigates another significant factor, or as described earlier; competing demand in ensuring transfer of learning takes place and that is the concept of cognitive load. Cognitive load is especially critical for those learners who have been away from education for a significant period of time; which tends to be the CAD demographic. These adult learners not only have to grapple with the rigor associated with college learning they must re-learn how to learn. Cognitive load theory is a multi-dimensional and complex theoretical construct and as such a deep dive into is practical application goes well beyond this paper. However, a simplified explanation is appropriate for our purposes in that for learning to occur, the learner’s total cognitive load can never exceed his or her working memory capacity (Neto, Huang, & Melli, 2015). One instructional design approach that successfully reduces extraneous cognitive load is the use of multimedia components that lower cognitive load by using students’ multiple modalities to process information (Kahlil, et al. 2005).

A hybrid approach addresses these modalities, or learning styles, through synchronous webinars. The audio, visual, and kinesthetic learner all garner learning during the synchronous session as the delivery includes mini lecture, guided discussion, poll questions, quizzes, and time for reflection. Moreover, each session is recorded which offers the audio learner another opportunity to hear, thus learn from the session, this also reduces the need to memorize content thus further reducing cognitive load.

Training literature and previous studies on transfer of training provide evidence to support the claim that training works when it is theoretically driven, focused on required competencies, designed to provide trainees with realistic opportunities to practice and to receive feedback (Salas & Cannon-Bowers, 2001). It is our belief that the same is true for learners especially those learners associated with The CAD program.

**Competency based education**

Competency based education (CBE) is often lauded as the latest disruption that seeks to respond to the growing sense of national urgency to boost education attainment. The target
audience generally includes those adult learners with some college but no degree already participating in the workforce (Book, 2014). Yet, in reality CBE is not new, it has been around the United States since the 1960s, following Australia’s earlier competency based education models. The 1960s is when CBE moved beyond basic vocational training to educational based training. One key aspect of CBE is the focus on student outcomes rather than the educational process. Much like the Civilian Associate’s Degree Program, interdisciplinary institutional competencies are developed with a combination of education and experience.

Air Force Manual (AFMAN 36-2647), titled “Institutional Competency Development and Management,” defines competencies as observable, measurable patterns of knowledge, skills, abilities, behaviors, and other characteristics needed to perform institutional or occupational functions successfully (Corsi, 2014). Much like the Air Force core values of integrity first, service before self, and excellence in all we do, competencies are enduring, and encompass interdisciplinary leadership attributes believed as critical for mission success. The purposes of Air Force institutional competencies are to enhance leadership performance, set leadership behavioral standards, and translate values into behavioral norms (Corsi, 2014). These competencies are enhanced when students bring their personal and professional experiences into the CAD program and combine them with interdisciplinary leadership theory.

While CBE presents a viable alternative to traditional educational forms it is not a panacea for all the perceived ills of a traditional delivery approach. First due to multiple variables, competencies are not always easy to measure (Pijl-Zieber, et al., 2014). Nor is there a conceptual agreement on what we now mean by the term “competency” across higher education sectors (Book, 2014). Therefore, CAD faculty have determined it is the best approach for our particular audience; the Civilian Airman adult learner. Specifically, the model chosen is Course-based with credit equivalency. The competencies identified as critical to the success of the Civilian Airman are embedded in the curriculum. This approach is similar to those approaches identified by Johnstone and Soares (2014) the exception being we do not offer self-paced or accelerated options.

As noted above, evaluating the attainment of a particular competency can be challenging, especially with regard to non-linear competencies such as critical thinking or cultural awareness. An early definition of competency was offered by Boyatzis (1982) as the ability to demonstrate a system of sequence of behavior that is functionally related to attaining a performance goal. We feel this definition has been usurped or replaced by workplace coaching in that coaching fulfills this level of competency attainment. We are seeking a more specific and unique competency that goes beyond simple learning outcomes. These competencies are designed to address Air Force specific leadership and followership competencies. Specifically, the CAD Program could provide data to support whether or not learning outcomes and competencies can lead to transformation from an individual contributor to a professional; equal to their commissioned officer counterparts.

Klein-Collins (2012) offer three compelling points as they related to the key differences between learning outcomes and competencies:

1. Competencies are at a higher categorical level requiring students to process learning in a way that enables them to apply it in a variety of situations.
2. Competencies are assessed at different levels that a student might be required to demonstrate depending on the educational level of the student.
3. Competencies are considered more objectively measurable.

In the CAD program demonstrating the ability to deal with conflict, or adjust from leader to follower, or simple adapt to a different organizational culture all fall into the category of “applying a competency in a variety of situations.” While the CAD program is at the Associate Degree level there are still varying degrees of competency assessment even if only
the level of expectation of a year one versus year two student. As far as objectivity is concerned, the assessment of any learning outcome is certainly evaluated during the program however, the organization itself, through first line and other leaders, also assess the attainment of competency attainment.

As Book (2014) noted any institutional “value-add” is in the assessment of “mastery.” What does the learner know and can they apply that knowledge, or demonstrate it, at the level of proficiency that is meaningful in the workplace (pg. 6)? Some of this evaluation comes from the student themselves which can certainly be measured; however, a significant part of that evaluation may come months or even years later, by unknown evaluators.

Lessons learned and the way ahead: An interdisciplinary perspective

Learning outcomes associated with the initial course in the Beta Test (Foundations of Leadership) were:

1. Know basic concepts about relevant leadership theories and leadership attributes.
2. Know strengths and weakness of relevant leadership theories.
3. Know which leadership theory/theories student’s leadership style most closely resembles.
4. Know how diversity and ethical leadership affect the organization.

Students averaged an 82% on the week one Foundations of Leadership quiz. Weekly quizzes were designed to evaluate knowledge of student objectives and learning outcomes. Week two showed a one percent increase. Themes associated with student feedback involved concern with taking a multiple-choice quiz, test anxiety, and frustration with learning how to become an effective professional Civilian Airman and student while balancing other priorities throughout the none week course. Faculty began to notice how students knew the leadership theories covered in class, and students were even able to demonstrate application of course concepts. However, the majority of the students were uncomfortable in the online learning environment as they continued to contact their instructor during week one office hours. Yet, students showcased their learning ability as the average score through the first three course weeks, was 86% on practice quizzes during synchronous webinars, while their formal quiz average was a slightly lower cumulative total of 84%.

The primary disconnect for students and the online learning environment was a robust student orientation; it simply was not available at the outset of the beta test. Thus, the Course Director had to spend the first 90-minute synchronous Adobe Connect webinar orienting students to Adobe Connect, Blackboard, and the online learning environment. With only one of ten students with prior online learning experience, these students experienced a steep learning curve. While week one introduced two prominent yet older theories of leadership in the Great Man and Trait Theories of Leadership, student feedback revealed students were still busy learning how to access the learning management system and how to formulate a discussion board post. Students noted how they were aware of the leadership theories, but needed guidance in how to succeed as an adult online learner.

Institutional competencies of the students, as shown in Table 1, covered many of the leadership theories discussed in the course. The students had already experienced various leadership models, many times without realizing which model they witnessed in their professional capacity. For example, all ten students responded to a week four question about situational leadership theory by noting how they have experienced situational leadership at their work center. This transfer of learning was demonstrated by students with the same institutional competencies throughout a set of interdisciplinary Civilian Airman Students working in communications, administrative, civil engineering, and fire and rescue professions.

Students were administered a short answer/essay format final exam during the last week of the course. Originally the students were to complete a cumulative, multiple choice exam.
Changing the exam format allowed faculty members to focus the degree to which students were achieving course learning outcomes. The student average grade was a 99% using the standardized CAD essay grading rubric. After an 82% week one quiz average, the students did well with demonstrating how their previous leadership experiences transferred to the CAD program.

When asked to note what contributed to their ability to improve throughout the course, students gave the following examples:

1. Adapting to online learning
2. Transferring what I already knew to the course
3. Learning how to be a student again
4. Getting confident and reducing test anxiety
5. The essay format helped me show what I knew

Kirkpatrick (1977) offers that the seemingly obvious, but overlooked, reason for evaluation is to determine the effectiveness of the program and ways in which it can be improved. CAD faculty began the evaluation process very early in the BETA test to ensure lessons learned were captured, and could make substantive changes to subsequent offerings.

The final, summative evaluation tool captured transfer of learning as well as mastery of student learning outcomes. Aligning student learning outcomes with Civilian Airman institutional competencies allowed faculty to focus on the personal, people/team, and organizational competencies set forth by Air Force leadership. Measurement of the KSAs gained from the CAD and other training and education programs will be monitored and tracked via means such as follow-up surveys sent to attendee supervisors as well as student feedback. This approach supports the education, training, and experience approach associated with the Air Force continuum of learning.

Conclusion

In this paper, discussions included training and education with respect to the Civilian Airman. As of the writing of this paper the CAD is in term three of the beta test. Two significant lessons are evident: student orientation is a must for any program; and adult learners often know more about certain topics than they realize. Regarding student orientations: any educational program must be designed to address the online learning environment by addressing and removing obstacles to learning. The program must ensure there is time during the orientation period for student to learn how to navigate the learning management system (LMS), how to contact a support desk, and the nuances of how their learning might be measured by course rubrics, tests, quizzes, attendance, and participation in webinars. Second, we discovered that our adult learners did not realize their own expertise. Thus in addition to providing background on relevant theory we also began to highlight their expertise through the guided discussion method.

Our interdisciplinary training is tailored to developing leadership competencies associated with Civilian Airman leadership. It is clear people and information combined into continuously formulated and reusable knowledge have replaced materiel and combat power as the primary source of organizational success in the military and government sector. Therefore, the ability to create, foster, enhance and otherwise use knowledge is the critical skill of our time and thus understanding how we transfer said knowledge and learning is paramount. Therefore, we argue that transfer of learning and competency based education are both interdisciplinary in nature, just as the interdisciplinary Civilian Airman. Dating back to Gagne (1962), interdisciplinary military training and education benefit when incorporated with CBE and transfer of learning theories. Civilian Airman competencies are already clearly defined. Education and training programs for the interdisciplinary Civilian Airman must focus
on measurement of defined student knowledge, skills, and abilities aligned with student learning outcomes.

**Authors' note:** The views expressed in this article are those of the authors and do not necessarily reflect those of the United States Air Force or the United States Department of Defense.

**References**


Dr. Jon Saphier interview: Decades of success in educational leadership

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Abstract Dr. Jon Saphier is an international leader in education. His legend remains as he continues to expand on his Boston University’s ethnographic dissertation (1980), which later became the best-selling textbook, *The Skillful Teacher* (2008). Dr. Saphier has sustained his leadership position internationally by continuously advocating for best teaching practices worldwide. This paper contains an interview with Jon Saphier and analysis of his leadership practices. Dr. Saphier discusses his core values of leadership, his successful approach to change initiatives, leadership failures, and critical elements of effective leadership. Dr. Saphier continues to be a driving force in educational initiatives worldwide. His humble, yet strong, approach is the foundation of his leadership sustainability. Dr. Saphier continues to mold his legacy as an educational leader by publishing, consulting, researching, developing models of district improvement, creating alliances, keynote speaking, and inspiring future educators. Jon Saphier continues to be a driving force in effective international educational practices.

Keywords: Leadership; Change; Failures; Core Values

“As a leader, be vulnerable and be strong at the same time. Understand there are things you do not understand and ask for help. Be strong by advancing values and organize them to happen. To be vulnerable, you do need to be honest about what you do not know and share your responsibilities of being a risk taker with those you want to lead.”

– Jon Saphier, 2017

Background

Dr. Jon Saphier is an international leader in education. His legend remains as he continues to expand on his Boston University’s ethnographic dissertation, which later became the best-selling textbook, *The Skillful Teacher* (2008). Since his Boston University days, Dr. Saphier has sustained his leadership position internationally by continuously advocating for best teaching practices worldwide. Dr. Saphier has continued to mold his legacy as an educational leader by publishing numerous books, consulting, researching, developing models of district improvement, creating alliances, keynote speaking, and inspiring future educators. His enthusiasm towards education is contagious, and many who have had the opportunity to learn from him are renewed and reenergized by the end of the conversation or lecture. Dr. Saphier’s passion for education is contagious, and his leadership abilities are authentically humble, yet powerful.

Dr. Saphier is the Founder and President of Research for Better Teaching, Inc. (RBT), an educational consulting association in Acton, Massachusetts that is devoted to improving the quality of teaching and leadership. Since 1979, he has taught professional development programs focused on best educational practices. According to RBT (2017), Dr. Saphier and his RBT team influence hundreds of school districts each year in the United States and other countries. In addition to teaching and consulting for RBT, Dr. Saphier has done on-site...
leadership coaching to over 1,000 principals on instructional leadership. He has led district improvement projects with intentions of creating working alliances between superintendents, union leaders, and school boards (RBT, 2017).

Dr. Saphier is actively engaged in public policy efforts to close the United States achievement gaps. He is an annual guest speaker at The Harvard Graduate School of Education’s Achievement Gap Institute. Dr. Saphier is in demand for inspirational keynotes and conference presentations across the country. He is a renowned keynote speaker on high-expertise teaching, school leadership, and various other education topics (“Jon Saphier Educational Blog,” n.d.).

Dr. Saphier’s interview focuses on the key ingredients for leadership sustainability. Dr. Saphier discusses his core values of leadership, his successful approach to change initiatives, leadership failures, and critical elements of effective leadership. Through trial and errors, Dr. Saphier continues to be a driving force in educational initiatives worldwide. His humble yet strong approach is the foundation of his leadership sustainability.

Interview

Dr. Jon Saphier was interviewed at 2:00 on May 2, 2017, in Acton, Massachusetts on location at Research for Better Teaching. The interview was 48 minutes long and consisted of questions based on the foundation of leadership. Many questions led to further leadership discussions and inquiries. Specifically, the big ideas of the interview were based on leadership core values, change, and failures. Dr. Saphier’s leadership style is authentically humble and motivating. His words, passion, and dedication to the field of education are inspiring and encouraging. During the interview, Dr. Saphier discussed in depth the core values of leadership. According to Dr. Saphier (2017), the core values of leadership are continuity, service, substance, courage, integrity, and trust. Educational leaders who can build a strong professional relationship have better working cultures. “As a leader, the values I had to manifest go beyond continuity, service, and substance. It is imperative that a leader is trusted” (Saphier, 2017). Dr. Saphier expanded on the concept and importance of trust. According to Dr. Saphier (2017), trust is critical in building strong cultures.

“Trust is keeping promises. Trust is honesty. Trust is productive feedback (good or bad). Trust is recognition for all those doing well. Trust is the stability of being present and proving you will stick around. Build trust to the point you can get some feedback about yourself and find out what you as an educational leader are not so good at.”

Trust is the glue that holds strong cultures together. Additionally, trust builds relationships within an organization and makes the potentially difficult conversations and actions more manageable. Trust encourages courage and integrity. “Courage and integrity are important values as a leader. Sometimes you will have to make decisions that are not popular and oppose the external interests. Hopefully, at that point, the trust is already established” (Saphier, 2017). Trust, courage, and integrity are important when leadership has to impose a change that may not be the popular decision of the consensus. Trusting the leadership may make the change process more manageable.

The next topic of discussion was change. Change is a difficult feat within an organization. Dr. Saphier (2017) discusses crucial elements of change within an organization. Change is not an easy task to accomplish. Specifically, many people oppose or fear change. Because of this fear, Dr. Saphier recommends to “call change the improvement process, rather than the change process.” People are less opposed to improvements. “Change should not just happen for change sake. Change should happen for improvement purposes.” According to Dr. Saphier (2017), when implementing big ideas that have to do with change, you need to be credible. How can you promote credibility in a change process? Dr. Saphier proposes the following:
1. Be authentically humble
2. Be clear on initiative
3. Assess readiness
4. Earn trust before you suggest change
5. Be a good listener
6. Assess needs of others within the organization you are trying to change. Attend to these requirements before seeking to promote your needs and change.

Through these suggested actions the change process becomes less scary and may be welcomed with less resistance. Furthermore, with any leadership position, there are failures to achieve initiatives, failures to make the desired change. It is beneficial to view failures as opportunities to grow and learn.

Failure was the next topic of discussion during Dr. Saphier’s interview. Failures are just obstacle to overcome and learning experiences to improve on. According to Dr. Saphier (2017), leadership failure can be categorized. “Leaders can fail by failing to do something or overall failure. I have failed many times. I am a serial failure, but I keep learning.” Dr. Saphier shared some of his life lessons based on his learning experiences as an educational leader. The following examples are lessons Dr. Saphier learned from various failures or learning experiences which eventually led to growth and additional success.

1. Build champions at lower levels of an organization. There are benefits of building sustainability at mid-level of an organization. The top of an organization tends to have higher turnover.
2. Mid-level employees tend to move up and need to know and understand the same commitments of those at the top of an organization
3. Keynotes – read an audience, learn who you are addressing at keynotes, build up a background knowledge base before going in to speak, don’t make assumptions.

Failures can lead to successes. As in any occupation, educational leadership involves a learning curve. The most important element of failure is your determination to overcome the obstacle and move on.

In conclusion, Dr. Jon Saphier mapped out the elements of effective leadership. According to Dr. Saphier (2017), effective leadership is voice, ownership, and influence. Effective leadership builds relationships and community among staff in an organization. Additionally, effective leadership promotes risk taking. Great leaders make all employees feel safe and make it known that mistakes are ok. “Mistakes are expected, normative, and useful” (Saphier, 2017). Mistakes should be used as an opportunity for learning. Effective leadership promotes influence and ownership of others.

Analysis and discussion

Dr. Saphier proved that his humble yet strong approach to leadership promotes a long lasting successful career as a leader. With his leadership core values, approach to change, ability to learn from failures, he proves leadership sustainability is possible. In an analysis of Dr. Saphier’s interview, change, core values, failures, and effective leadership, will be discussed and investigated.

Change was mentioned numerous times throughout the interview. Therefore change is a focus of this interview analysis. According to Heath (2011), leaders who want to change behaviors within an organization need to understand the need for rational outcomes, motivate emotional understanding, and shape the path to change. If you can do all three, you can stimulate dramatic changes. In an analysis of Dr. Saphier’s interview and his accomplishments, it is evident that Dr. Saphier can do all three and sustain and promote change within an organization. He has this ability because his leadership style is authentically humble, yet powerful.
Change is a process that involves emotions and rational understanding. According to Heath (2011), lasting change happens when one can effectively direct both the rational and emotional parts of the brain. Dr. Saphier emphasized the importance of relaying his change process by being credible and honest about his vision. His explanation regarding the course of earning credibility was geared to both, rational and emotional understanding. To reach rational understanding, Dr. Saphier made the point that change involves clear initiatives, vision on the outlook, and an assessment of readiness. To increase emotional understanding, Dr. Saphier emphasized the importance of relationship building, trust, being a good listener, and assessing needs of the organization before implementing the change. Dr. Saphier can make his staff feel the need for change by calling the change process the improvement process. Specifically, Dr. Saphier can go beyond the known and make it possible for people to feel the impact. The capacity to do this is powerful. Furthermore, by his authenticity and record of accomplishments, Dr. Saphier proves he has the ability understand the emotions needed to lead others.

Dr. Saphier’s approach to change is very adaptive by creating creditability and developing relationships and ownership to enforce the change or improvement process. He states that “you must get leaders within the organization to believe in the change goals or values for the goals for the change process or improvement process to happen” (Saphier, 2017). Dr. Saphier emphasizes the importance of creating allies and solidifying a buy in of others. This is similar to the approach outlined by Heifetz, Grashow, and Linsky in *The Practice of Adaptive Leadership* (2009). According to Heifetz et. al (2009), before you go public with an initiative you need to have support. “Identify which stakeholders are most likely to be interested in supporting your cause. Potential allies have interests and perspectives of the adaptive challenge closely aligned with yours and will gain the most if your intervention succeeds” (Heifetz et. al, 2009, p. 137). Both Saphier and Heifetz, stress the importance of supportive allies or leaders supporting your change initiative. Allies with authority can promote the process and support initiatives.

Additionally, authenticity and trust were another theme of the interview. According to Pfeffer (2015), authentic leadership is rare and hard to achieve. His explanation concludes that leadership is not authentic because people change and grow all the time as a result of their work experiences. This may be true for some leaders, but I would argue this is not the case with Dr. Saphier. According to the analysis of his interview, Dr. Saphier’s life experiences of growth, change, and failures have resulted in a very authentic leadership style. Through the years, he realized the value in an authentically humble approach to leadership. He asks for help when needed, admits there have been failures, involves others in decisions and the change process, and he understands there is still so much to learn.

**Conclusion**

Dr. Saphier’s authentically humble approach to leadership demonstrates that he can change behaviors within an organization by directing rational understanding, motivating emotions, and eventually shaping the path. Dr. Saphier can do that and sustain lasting changes within an organization because he is authentic, has allies who support his initiatives, learns from failures, and has his leadership core values he lives by.

Dr. Jon Saphier career defines leadership sustainability. His career in educational leadership has been extensive and productive, and he continues to make changes and advocate for improved schools and education. Since 1980, upon competition of his Boston University Dissertation, to present day consulting, transforming, and keynote speaking, Dr. Saphier continues to make an international impact in the field of education.
References


