GREEN SCHOOLS – THE IMPLEMENTATION AND PRACTICES OF ENVIRONMENTAL EDUCATION IN LEED AND USED GREEN RIBBON PUBLIC SCHOOLS IN VIRGINIA

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ABSTRACT

The purpose of this study was to examine the environmental education curriculum which has been utilized within Green Schools. The study defined Green Schools as educational facilities with Leadership in Energy and Environmental Design (LEED) certification or United States Education Department (USED) Green Ribbon recognition. Currently, there is no set standard for the implementation of environmental education in Green Schools or for schools that utilize the building as a teaching tool for students. The researcher surveyed Green Schools in the Commonwealth of Virginia in order to better understand what common programs and curricula were being utilized. The findings will assist in establishing pedagogical best practices for environmental education while describing how LEED certified buildings are currently being used by educators as a teaching tool to support sustainable practices. Overall, 14 Green Schools in the Commonwealth of Virginia agreed to participate in the study. Once principals and staff gave consent to participate in the study, they were asked to respond to an eSurvey, which consisted of 14 multiple choice and open response survey items. Overall, 98 principals and staff participated in the survey. Quantitative data were collected through multiple choice survey questions analyzed to report descriptive statistics about the sample population. Qualitative data were examined by emerging themes according to pedagogical strategies and programs. The findings from the study indicated that teachers are employing practices that are consistent with current emphases on environmental education. Data also supported that educators take pride in their buildings and incorporate the facility as a teaching tool in a variety of instructional practices throughout the Commonwealth of Virginia.

INTRODUCTION

Gordon (2010) defines Green Schools as the results of the planning, designing, and construction process that, "takes into account a building's performance over its entire 50-60 year live cycle" (p. 1) with a focus on creating an environment that is optimal for learning. Green Schools create this optimal environment by providing fresh air, a comfortable temperature range, with plenty of natural lighting, and minimizes distractions from nearby noises "while also maximizing resource efficiency, minimizing pollution, and teaching students the importance of innovation in the built environment" (p. 1).

While there has been a growing trend in Green School research, much of the research has emphasized the building components and energy conservation, rather than how the building features are utilized to teach students about sustainability. In order to be called a Green School, the building must teach about sustainability. Green Schools have two components that are tied directly to educating students about sustainability. The first component is that the building is utilized as a teaching tool for students to learn about sustainability. Leadership in Energy and Environmental Design (LEED) 2009 for Schools New Construction defines the school as a teaching tool when it has a curriculum based on

the green performance features of the building that is implemented within 10 months of the LEED Certification. The curriculum must meet state requirements and go beyond a mere description of the features. Instead, the building should "explore the relationship between human ecology, natural ecology and the building" (USGBC, 2012, np).

The second component a school must incorporate to maintain its Green School status is that the building must utilize a curriculum for teaching environmental (or sustainable) education. This component does not directly tie sustainability to the features of the building; rather, it infuses sustainable practices and education throughout the curricula taught in the building. However, there is no set standard with regard to environmental education curriculum.

The United States Department of Education (USED) recently launched its Green Ribbon Schools, the first comprehensive federal policy for schools that relates environment, health, and education. This award recognizes the work and programs in place at schools reaching high levels of achievement in environmental impact, healthy environment, and environmental literacy. This seemed to be one of the closest efforts in creating a standard for a curriculum that supports environmental education in Green Schools. At the same time teachers and administrators in LEED Schools were implementing the educational components of that certification requirement. To date the degree that this implementation adheres to the intent of the educational LEED requirement is more of an individual matter than a specified effort.

Higher accountability, higher energy cost, and shrinking school budgets are some of major issues many school systems currently face. In addition, school divisions and administrators are carrying the heavy burden and increased pressure to improve student's achievement levels with less money and resources (Kats, 2006; Okcu, 2011). One subject that has recently grown in interest over the past decade is the development of sustainable or Green Schools. Another recent trend in research related to Green Schools was the use of the building as a teaching tool for sustainability. However, this was not emphasized in research and there are no set of standards or consistency with regard to school implementation and little research has been conducted on the subject (Chan, 2013; Cole, 2013).

RESEARCH QUESTIONS

This study sought to answer the following research questions:

The major research question is:

How do USED Green Ribbon and LEED schools in Virginia implement environmental education into the curriculum?

The sub-questions are:

a. In what way is environmental education included in the curriculum of the school division?

b. To what extent is the implementation of environmental education directed by individual classroom teachers?

c. What common practices and strategies are used to implement environmental education?

d. What level are the practices used to implement environmental education formally evaluated?

e. How do LEED schools in Virginia utilize the building components as teaching tool?

SIGNIFICANCE OF THE STUDY

While considerable research has been conducted linking building conditions to student achievement and staff performance, there has been little research linking any added benefits of newly designed sustainable school buildings, and even less on the topic of Green Schools as a teaching tool (Barr, 2013; Chan, 2013; Cole, 2013; Edwards, 2006; Issa, 2011; Kats, 2006; Okcu, Ryherd, & Bayer, 2011; Olson & Kellum, 2003). Green buildings have criteria of an educational program to help students become aware of their environment (Barr, 2011; Chan, 2013; Cole, 2013). While Green Schools are designed to utilize a curriculum for environmental education which uses the building as a teaching tool, there is no set standard or criteria of implementation (Barr, 2012). LEED and USED Green Ribbon schools provide a framework for the implementation of environmental education which can be further examined to assist in establishing what common themes are currently found in environmental education curricula.

As an educational leader, it is important for principals to consider the economic impact the school program has on the school division and the community as tax payers. It is equally important to understand how environmental education can positively influence staff, and students, and how the surrounding community can assist in the promotion of civic and environmental responsibility. Each of these components is important to consider as a responsibility of the school system.

This study will add to the current, but limited, body of research involving Green Schools with regard to usage of the building as a teaching tool and implementation of environmental education. The findings from this study will help educators and planners see current trends of sustainability curricula in Green Schools and how Green Schools are used as a teaching tool for sustainability.

REVIEW OF LITERATURE

Research has shown that the quality of school facilities is associated with student and staff health, attendance, and performance. LEED design aims to improve elements such as lighting, acoustics, and indoor air quality, while utilizing design features to support environmental education practices. Further research is needed to investigate the impact of LEED building design on outcomes such as environmental education/sustainability, student achievement, student and staff attendance rates, and occupant satisfaction. The studies examined in this review all attempt to build a foundation of empirical evidence that supports the idea that green schools improve student achievement and decrease absences for students and staff (Bruick, 2009, Edwards, 2005; Issa, 2011; LaBuhn, 2010; Oetinger, 2010). Currently, there is no formal educational research that examines the implementation

of environmental education and sustainability program in Green Schools. Three of the studies reviewed utilized a collection of regional data from smaller samples sizes to compare student achievement and attendance in green schools with non-green schools (Bruick, 2010; Edwards, 2005; Issa, 2011). The other two studies utilized a sample population from across the United States (LaBuhn, 2010; Oetinger, 2010). While many of the studies did not find a positive relationship between green schools and student achievement and attendance that was statistically significant, the studies did show improvement in both dependent variables (Bruick, 2010; Edwards, 2005; Issa, 2011; Oetinger, 2010). LaBuhn's study (2010) was the only study where green schools were significantly outperformed by non-green schools across many populations throughout the United States. However, it should be noted that the design did not utilize matched pairs when setting up the samples as part of the design methodology. Instead, the study compared green schools to non-green schools in the same district or geographic location and analyzed data using a simple linear regression (LaBuhn, 2010).

More research on LEED and Green Schools is needed to add to the foundation of knowledge regarding the impact of Green Schools on occupants and implementation of environmental education linked to these schools.

Outside of the referenced research, there is still little empirical research related to Green Schools. Presently, there is no educational research that examines Green Schools as a teaching tool for environmental education or how this might affect student performance. As popularity of Green Schools continues to grow, it is important that the educational components of these facilities also grow in order to increase student, staff, and community understanding of the energy performance features and learning outcomes that are offered within these buildings. Students spend many years inside school facilities, as school divisions move forward with new construction, it is important that these facilities also serve to supplement the curricula and engage students, staff, and the community with regard to environmental education and sustainable practices.

The United States Department of Education (USED) developed a program in 2011, USED Green Ribbon Schools, that recognizes and honors "schools and districts that are exemplary in reducing environmental impact and costs; improving the health and wellness of students and staff; and providing effective environmental and sustainability education, which incorporates STEM, civic skills and green career pathways" (USED Green Ribbon Schools, 2013, np). According to the USED Green Ribbon, the recognition award is part of an effort to identify and inform the public about "practices that are proven to result in improved student engagement, higher academic achievement and graduation rates, and workforce preparedness, as well as a government wide goal of increasing energy independence and economic security" (USED Green Ribbon Schools, 2013, np).

USED Green Ribbon criteria seems to further explain the criteria of LEED. USED Green Ribbon's aim is not only to construct buildings that are energy efficient and healthier for occupants, but also to educate students about sustainability and the responsibility that individuals have with respect to their impact on the environment. In the future, these programs may lead the way in developing standardized criteria for implementation of environmental education within schools, both new and old.

METHODOLOGY

The purpose of this study was to ascertain the educational practices implemented in Green School to meet the educational requirements for LEED and USED Green School certification. Therefore, the building population of the study were the school buildings that were certified as either LEED or USED Green Schools. At the time of the study, there were 17 public schools in the Commonwealth of Virginia that were LEED or USED Green Ribbon certified. Of those schools, 14 agreed to participate in the study. An eSurvey with both multiple choice and open-ended questions was utilized to for data collection. The population of the study included all principals and faculty from the schools, and communication to invite participates was filtered through the principals of each school. The study included all schools that were currently certified as LEED; schools that have completed construction, have been utilized for a minimum of one year, and were pending or completed certification from USGBC; and USED Green Ribbon Schools for the population. A complete listing of the LEED and USED Green Ribbon schools in the Commonwealth of Virginia is contained in Appendix A. This mixed methods study analyzed quantitative data through descriptive statistics. The qualitative data were coded and examined for common themes that existed in implementation practices between schools and divisions.

SUMMARY OF FINDINGS

Research Question a.

In what way is environmental education included in the curriculum of the school division?

Almost half of the participants (49%) responded that environmental education was included in the curriculum of the school division. Nearly one-third (32%) of the participants responded that environmental education was not included in the curriculum, or they were unsure if it was included in the curriculum of the school division. Nearly one-fifth (19%) of the participants did not respond to this particular survey item. Since a non-response does not necessarily negate the inclusion of environmental education, it was coded separately. (See Table 1.)

	Percent of	
Responses	Responses	
Yes	49	
No or		
Unsure	32	
No		
Response	19	

Table 1 – Integration of Environmental Education in the Curriculum

Positive responses from participants varied and were coded according to common themes that developed: Building, Community, Curricula, Learning Garden, and School Programs. The two themes mentioned the most were curricula and school programs and many responses incorporated more than one theme. It was evident that there are many ways to incorporate environmental education into the formal and informal curricula that exists in Green Schools.

Several examples include incorporating sustainability concepts into the formal curriculum through STEM, cross-curricular assignments, research assignments, using informational and fictional text, class debate/discussion on current events, field trips, outdoor classroom, learning garden, and class projects. There are also ways to include environmental education and sustainable practices informally into the curriculum. Some examples from the survey instrument include recycling programs, environmental clubs, civic and community service projects, fieldtrips, and by reducing energy usage. There are many ways to create school-wide opportunities for students to learn about sustainability and the added benefit of school-wide programs is that it works to establish a culture of sustainable practices throughout the school.

Research Question b.

To what extent is the implementation of environmental education directed by individual classroom teachers?

Almost half of the participants (48%) responded that implementation of environmental education occurs by individual classroom teachers initiative. Many participants (30%) responded that implementation was a school-wide process. While only 8% responded that implementation took place by grade level or department level.

When implementation takes place as a school-wide process, it also supports a culture of sustainability within the Green School. One participant stated, "I think the most unique practice I've seen at this school is how most of the kids and staff (most of them) will automatically pick up a bug and take it outside, rather than squish it." (R30). However, at the individual level, it may be difficult to establish and maintain a whole-school program over time. One participant stated, "…in past years we monitored the weight of paper collected from each source within the school and created displays of the data using Excel spread sheets, formulas and graphics. This monitoring encouraged participation by teachers." (R66).

As an instructional leader, it is important to consider how implementation should occur within the school. When implementation takes place as a school-wide process, it also supports a culture of sustainability within the Green School. However, at the individual level, it may be difficult to establish and maintain a whole-school program.

Research Question c.

What common practices and strategies are used to implement environmental education?

There were several resources, practices, and programs used to implement environmental education. The internet (21%) and project based learning (20%) were the most common resources provided in responses among participants. Other themes that developed from responses included multimedia, learning garden, community partnerships/field trips, and none. The most common programs utilized in Green Schools included recycling programs (26%) and community outreach/partnerships (22%).

Throughout the study, it was evident that teachers are employing practices that are consistent with current emphases on environmental education. This was evident by the response from (R59); "We gathered school heating and cooling data from the county's environmental compliance manager to study the current efficiency of managing the school's temperature using Newton's Law of cooling." Furthermore, participants seemed

to show a sense of pride for the school and the sustainable programs that are implemented. One participant (R42) stated; "We have a wonderful horticulture program that teaches sustainable farming." Another stated; "In my opinion, we are the most unique school in the state. Our ability to have an on campus laboratory specifically built and designed for environmental studies puts The Gereau Center/CEED on the cutting edge of environmental education." (R31). However, overtime, if environmental education and sustainability were not part of a whole-school culture then practices and awareness were utilized less by teachers. This is evident from the response of participant (R68); "There are plaques on the walls, but I bet it's been a long time since anyone read them." Also, (R63) stated; "It is my understanding that with LEED certification our school is to be recycling paper, aluminium and plastics, as well as composting leaves and grass clippings. The only program we actually implemented is paper recycling. I find this discouraging."

Implementation of environmental education does not occur overnight; instead it is a process that should be planned out with annual goals or benchmarks. For example, many of the Green Schools in Virginia incorporated a recycling program and/or community partnership/ outreach as part of the environmental educational practices. A recycling program is relatively simple to start up and can include a variety of items (paper, aluminium, plastic, cell phones, batteries, etc.) while including all staff and students. Community outreach/ partnerships vary according to the location and geography of the school division. Some of the common activities included field trips and sponsorships through local environmental agencies such as, Save the Bay Foundation, James River Association, Culpeper Soil and Water Conservation District, and Virginia Department of Environmental Quality.

Building a learning garden on the school grounds was another common qualitative response from the participants. This strategy can be utilized in a variety of ways while offering students hand-on learning experiences. Project-based learning activities were a common quantitative response and participants provided a variety of qualitative examples. These examples included: STEM projects; field trips to examine stream health; collecting and monitoring data on recycling, energy usage, and water usage in the building; and creating videos to advertise sustainable aspects of the building and programs.

The practices and strategies mentioned are valuable additions to the formal and informal curricula of the school. They incorporate real-world concepts and high engagement handson activities which assist in creating 21st century learning opportunities and authentic experiences for students. These are educational aspects that all instructional leaders can find value. However, in LEED schools where the building is used as a teaching tool, it is important for educational leaders to consider on-going staff development, so they are aware of the sustainable features and learning opportunities that exist within the building. Refer to table 1 for specific examples environmental education practices by school level.

Research Question d.

What level are the practices used to implement environmental education formally evaluated?

Almost half the participants (40%) responded that environmental education was evaluated at the school level. Evaluation at school division level (4%) and evaluation by an outside agency (2%) were much lower, however, and 8% percent of the teachers responded that there were two or more agencies that evaluated the program. Participants that selected two or more items included the following: two participants selected evaluation at the district level and by an outside agency; two participants selected evaluation at the school level and district level; three participants selected evaluation at the school level, district level, and by an outside agency; and one participant selected evaluation by an outside agency and other: Lynnhaven River Now for Pearl School recognition. No response to the survey item consisted of 25% of the participants. Lastly, 21% of the participants responded with 'other.' Those participants provided the following types of answers; "part of PLTW exam" (R67), "No," "No evaluation," "Not sure," "I don't know," and "None of the above."

As instructional leaders in the building, it is important for teachers to understand that they are the person responsible for the successes within the school. This should be a primary emphasis when it comes to establishing a Green School with a culture that supports sustainable practices.

Research Question e.

How do LEED schools in Virginia utilize the building components as teaching tool?

There were seven themes that developed from the analysis of data. These themes include: lighting, water reduction, learning garden, signage, building monitoring system, building design and energy savings, and community involvement. While, many responses included various features of the LEED buildings, many did not provide specific details regarding how teachers used the building as a teaching tool. Refer to Table 3 for specific examples regarding how teachers utilized the building as a teaching tool.

It was evident that many participants utilize features of the building and share information about the sustainable features with students in their classes. This took place in both the formal and informal curricula of the schools. It was also evident that school staff took pride in teaching in a Green School. One participant stated; "We have the coolest school ever!" (R28). Another stated; "This is a fabulous beautiful school. There are signs all about put in by the contractor denoting all the green aspects of the building." (R58).

While all the responses of participants varied in detail, the data collected did provide useful information regarding the implementation of environmental education in Green Schools. According to the responses of participants, knowledge of environmental education and Green Schools varies from school to school and person to person. This was evident with the number of responses that included detailed information about the sustainable aspects of the school, environmental programs, and staff knowledge about curricula used to teach about environmental education and the building as a teaching tool. This was also evident with regard to the number of responses that included answers such as 'I don't know,' 'Unsure,' and no response at all for particular survey items.

There is a large variety of activities in LEED schools that utilize the building components as a teaching tool. Many of the activities that incorporated the building components within the learning process were developed around conversations related to community service/clubs, conservation, recycling, natural resources, pollution, engineering, and alternative sources of energy. These topics were related to many different aspects of the building also. Many of the topics utilize the building signage are part of the lesson. Lessons related to conservation, recycling, reduction of energy often utilized aspects of the building such as various lighting features that save energy or support an increase of natural light within the building. Teachers also discussed components that reduced water and energy usage. Many of the community service projects and clubs took advantage of various types recycling and outdoor learning spaces such as courtyards, learning gardens,

compost bins, and retention ponds. While specific lessons were not provided within the data collected by the survey instrument, it was evident that many the participants actively utilized components of the buildings and/or discussed specific building features with students.

SUGGESTIONS FOR FUTURE STUDIES

Future studies may also consider modifying the survey instrument to include only those Green Schools that utilize the building as a teaching tool for those specific survey items. While there were only three schools that were not LEED certified it was evident that not all participants were knowledgeable with regard to the identification of LEED versus USED Green Ribbon. For example, participant (R63) stated; "I don't know what the LEED building design is. We know we are a green school and how to work to obtain and keep that classification but what is LEED? If you don't define it don't use the term." Lastly, future studies may also consider incorporating focus groups and/or phone interviews as part of the data collection. This addition to the methodology would allow the researcher to ask follow up questions and expand on responses to help ensure clarity and data saturation for future studies.

REFLECTIONS

Overall, this was a successful study with regard to working with several school divisions across the Commonwealth of Virginia and several principals from all school levels. Many of the school divisions were supportive and interested in the study. However, because of the timing for the survey, there were some environmental factors that may have affected the number of participants that responded to the survey instrument. Many schools across the state of Virginia were closed for several days due to inclement weather on the first day that surveys were to be sent to teachers by the school principals. As a result, this required much more follow up on the researchers part to ensure that surveys were sent out in a timely manner and that all participants had an equal time to complete the survey. Overall, the research study was a positive experience and it was interesting to see how schools from a diverse population implemented environmental education and sustainability. However, responses did differ with respect to in-depth details. Some of the responses were quite detailed and utilized several aspects of the building as a teaching tool, for example, the building monitoring system was used by many to track and monitor energy usage. The

researcher's assumption was that many participants would respond with familiar aspects of the LEED building such as informational signage and increased natural lighting. Educational leaders should understand that the implementation of a Green School does not occur overnight; instead it is a process that should be planned out with annual goals or benchmarks. For example, many of the Green Schools in Virginia incorporated a recycling program and/or community partnership/outreach as part of environmental educational practices. A recycling program is relatively simple to start up and can include a variety of items (paper, aluminium, plastic, cell phones, batteries, etc.). This can also be a school-wide program, which will support buy-in from all staff and students. Community outreach/partnerships vary according to the location and geography of the school division. Some of the common activities included field trips and clean up around the school grounds or nearby parks. Throughout the study, it was evident that teachers are employing practices that are consistent with current emphases on environmental education.

REFERENCES

- Barr, S., Dunbar, B., & Schiller, C. (2012). Sustainability in schools: Why green buildings have become a catalyst. *Educational Facility Planner*, *46*(1), 19-22.
- Bruick, D. (2009). Relationship between green school design and student achievement, attendance, and student behaviors. (Doctoral dissertation). Retrieved June 24, 2012, from Dissertations & Theses: Full Text. (Publication No. AAT 3373375).
- Chan, T. C. (2013). An examination of green school practices in Atlanta schools. Kennesaw, GA: Department of Educational Leadership, Kennesaw State University. (ERIC Document Reproduction Services, No.: ED543509)

Cole, L. B. (2013). The teaching green school building: A framework for linking architecture and environmental education. *Environmental Education Research*, (ahead-of-print), 1-22.

- Edwards, B. W. (2006). Environmental design and educational performance, with particular reference to "green" schools in Hampshire and Essex. *Research in Education*, *76*(76), 14-32.
- Gordon, D. E. (2010). Green Schools as high performance learning facilities. *National Clearinghouse for Educational Facilities*. Retrieved from http://www.ncef.org/pubs/greenschools.pdf.
- Issa, M., Rankin, J., Attalla, M., & Christian, A. (2011). Absenteeism, performance and occupant satisfaction with the indoor environment of green Toronto schools. *Indoor* and Built Environment, 20(5), 511-523. doi:10.1605/01.301-0017221737.2011
- Kats, G. (2006). *Greening of America's schools: Costs and benefits*. Retrieved from http://www.usgbc.org/Docs/Archive/General/Docs2908.pdf.
- LaBuhn, R. W. (2010). A preliminary study of the effects that four L.E.E.D. gold certified elementary schools have on student learning, attendance and health (Doctoral Dissertation). Retrieved from ProQuest, UMI Dissertations Publishing.
- Oetinger, J. *Green Schools: Constructing and renovating school facilities with the concept of sustainability.* (Doctoral dissertation). Retrieved June 25, 2012, from Dissertations & Theses: Full Text. (Publication No. AAT 3433099).
- Okeu, S., Ryherd, E., & Bayer, C. (2011). The role of physical environment on student health and education in Green Schools. *Reviews on Environmental Health*, 26(3), 169-179. DOI 10.1515/reveh.2011.024.
- Olson, S. L., & Kellum, S. (2003). *The impact of sustainable buildings on educational achievements in K-12 Schools*. Leonardo Academy Inc. Retrieved from http://www. cleanerandgreener.org/download/sustainableschools.pdf
- U.S. Green Building Council (2012). *Green schools enhance learning*. Retrieved from http://www.centerforgreenschools.org/better-for-learning.aspx
- U.S. Department of Education. (2013). U.S. Department of Education green ribbon schools. Retrieved from http://www2.ed.gov/programs/green-ribbon-schools/index.html.

School	Division	Type of Green School
Albemarle High School	Albemarle County	LEED - Silver
Brownsville Elementary	Albemarle County	LEED - Gold*
Stony Point Elementary	Albemarle County	USED Green Ribbon
Fluvanna High School	Fluvanna County	LEED - Silver
Gereau Center/CEED	Franklin County	USED Green Ribbon
Glen Allen High School	Henrico	LEED - Gold*
Holman Middle School	Henrico	LEED - Silver*
Magna Vista High	Henry County	USED Green Ribbon
Sandusky Middle School	Lynchburg City	LEED - Certified
Locust Grove Middle School	Orange County	LEED - Gold*
Kettle Run Elementary	Prince William County	LEED - Silver
Piney Branch Elementary	Prince William County	LEED - Silver*
Fishburn Park Elementary	Roanoke City	USED Green Ribbon
College Park Elementary	Virginia Beach	LEED - Platinum
Hermitage Elementary	Virginia Beach	LEED - Certified
Virginia Beach Middle	Virginia Beach	LEED - Silver
Windsor Oaks Elementary	Virginia Beach	LEED - Silver*

Appendix A: List of Green Schools in Virginia

Note. * indicates that the school earned a point on the LEED application for utilizing the building as a teaching tool.

S	Environmental Education Practices			
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1				
E	Have discussions about natural resources/conservation and use			
1	examples of ways the school helps to use fewer resources. Further,			
e	discuss alternative energy and power sources such as wind and solar			
m	power.			
e	• Use an outdoor garden space at the school for each grade level.			
n	Students use the outdoor space to grow a choice salad food, to harvest			
t	and eat together as a class later in the spring or to grow indigenous			
a	plants.			
r y	Create Recycling Programs, Environmental Clubs, and community service projects			
	Create an overarching theme for grade levels to teach how systems			
	work.			
	 Utilize science units on the water cycle to discus and teach about conservation. 			
М				
i	 Integrate concepts such as zero net carbon and energy building that actually produces its own energy through solar arrays and wind 			
d				
d	turbines. Students are involved in an energy engineering class which uses this building as a laboratory for sustainable energy.			
1	uses this building us a laboratory for sustainable chores.			
e	Use the science curriculum where several standards relate to the			
	environment and sustainability. Have students cover alternative energy			
	sources, point source and non-point source pollution, and renewable			
	vs. nonrenewable resources.			
	Create Recycling Programs, Environmental Clubs, and community			
	service projects			
	Utilize School Announcements.			
	Use the English research unit to focus on students selecting an			
	 Ose the English research unit to focus on students selecting an environmental issue, researching it, and presenting pros and cons. 			
	In Language Arts, use informational texts and fictional texts about the			
	• In Language Arts, use informational texts and retional texts about the environment, pollution, and its effects.			
	Discuss renewable and nonrenewable energy resources and complete as in close project short energy concernation			
	an in-class project about energy conservation.			
	Allow student to enter a poster in the James River Association's poster			
l	 Allow student to enter a poster in the James River Association's poster contest titled 'What a Healthy River Means to Me.' 			
l	*			
l	Educate students about the cost of building and operating solid-waste fosilities and the value of receiving different products			
	facilities and the value of recycling different products.			
Н	Utilize the science curriculum concepts that discuss reduction of			
н i	 Utilize the science curriculum concepts that discuss reduction of materials, reuse of materials, and recycling. 			
g h	Utilize units that include learning about renewable energy options and			
	analyzing the viability for renewable energy in VA.			
l				
	 Use data contacts and operators for the air quality monitoring station and information available for teachers. Use curriculum links for 			

Table 2 - Environmental Education Practices by School Level

NEED.org that is available to teachers.	
•	students and teach about our footprint. Incorporate stream study into the curriculum and create a 'pond in the classroom to teach concepts about ecology.
	especially those concerning energy and clean water.
•	Discuss current topics in other countries, which often deal with pollution and other environmental concerns (i.e., clean water).
•	Utilize the course on environmental science.
•	Use the STEM curriculum.

Note. STEM is an acronym for Science, Technology, Engineering, and Mathematics

c Education Practices Intering a consequence of the second s	S	Environmental	Building as a Teaching Tool
0 0 1 Image: Construction of the school helps to the school for each grade level. Students use the outdoor space to grave a choice salad food, to harvest and eat together as a class later in the spring or to grow indigenous plants. Use recycling cans throughout the building, create various recycling programs, compost building. Create Recycling Programs, Environmental Clubs, and community service projects Create an overarching theme for grade levels to tach how systems work. Study and research how various systems in the building work - Wind Turbines, Solar power, rain collection, green Study and research how <li< td=""><td></td><td></td><td>Duriding us a reasoning root</td></li<>			Duriding us a reasoning root
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Table 3 - Environmental Education Practices that use the Building by School Level

	Utilize science units on the water cycle to discus and teach about conservation.	Discuss how solar panels and rainwater collectors help conserve resources. Also, use plaques throughout the building that tell students about the sustainable features of the building, and small plaques at every classroom door with names and pictures of flora and fauna indigenous to the region, with QR codes that link to websites about them.
M i d l e	• Integrate concepts such as zero net carbon and energy building that actually produces its own energy through solar arrays and wind turbines. Students are involved in an energy engineering class which uses this building as a laboratory for sustainable energy.	 Use the design, solar orientation, daylighting, solar hot water and different types of solar panels to demonstrate how things change. Discuss how low e glass, insulation principles, CO2 monitoring, use of local and recycled materials, water harvesting, green roof and surrounding gardens, and wind generators and weather monitoring, information kiosk dashboard help monitor our energy usage.
	Use the science curriculum where several standards relate to the environment and sustainability. Have students cover alternative energy sources, point source and non-point source pollution, and renewable vs. nonrenewable resources.	Have students tour the school and discuss the green features. They then tour the grounds to evaluate the school on weathering and pollution found. The school uses sustainable supplies, showing students that large buildings don't need to devastate the land to complete construction. The school also uses less water and electricity, but is still able to perform as a normal school.
	Create Recycling Programs, Environmental Clubs, and community service projects	Use recycling cans throughout the building, various recycling programs, compost bins, learning gardens, and informational signage throughout the building.

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	Utilize School Announcements.	 Provide information about the building and sustainable features and concepts.
-	Use the English research unit to focus on students selecting an environmental issue, researching it, and presenting pros and cons.	No specific response included.
	In Language Arts, use informational texts and fictional texts about the environment, pollution, and its effects.	Use building signage that explains the types of recycling waste.
	Discuss renewable and nonrenewable energy resources and complete an in-class project about energy conservation.	Monitor the recycling program and discuss the use of natural light throughout classrooms.
	Allow student to enter a poster in the James River Association's poster contest titled 'What a Healthy River Means to Me.'	No specific response included related to the building.
	Educate students about the cost of building and operating solid- waste facilities and the value of recycling different products.	Monitor the weight of paper collected from each source within the school and created displays of the data using Excel spreadsheets, formulas, and graphics.
H i g h	Utilize the science curriculum concepts that discuss reduction of materials, reuse of materials, and recycling.	Discuss signage that describes the environmental educational concepts of the building. For example, the green roof. Use the outdoor garden and compost bins. Discuss how the building is designed to save energy. That is a powerful teaching concept in itself.
	Utilize units that include learning about renewable energy options and analyzing the	Discuss the green roof and design plans for energy and water conservation.

	viability for renewable energy in VA.	
	 Use data contacts and operators for the air quality monitoring station and information available for teachers. Use curriculum links for NEED.org that is available to teachers. 	Discuss how the green roof system is monitored by a Hobo meter for soil moisture, air and substrate temperature, and relative humidity. Discuss how the school website hosts an ambient air quality monitoring station operated by the Virginia Department of Environmental Quality.
	 Use science courses to teach sustainability, model it, and survey students and teach about our footprint. Incorporate stream study into the curriculum and create a 'pond in the classroom to teach concepts about ecology. 	Discuss various building materials throughout school and use signage to clarify.
•		• Discuss the energy efficient building (new high school). Discuss various features such as films on windows, the white roof, thermal glass, automatic lights, and types of lighting.
	 Discuss current topics in other countries, which often deal with pollution and other environmental concerns (i.e., clean water). 	Discuss the water reduction features of the building - such as automatic faucets, and low flush toilets, and adjustable lighting.
•	• Utilize the course on environmental science.	Discuss and utilize the learning garden for hands-on activities.

Note. Many common responses were combined and some responses were edited for readability. As a result, specific participants are not noted in the responses.

IMPROVING INSTITUTIONAL CREDIBILITY: COMMUNICATION AS THE CENTERPIECE OF PLANNING IN THE AGE OF ACCOUNTABILITY

Cathy A. Fleuriet M. Lee Williams Texas State University – San Marcos

ABSTRACT

Each year institutions of higher education receive greater pressure from the federal level, regional accreditation agencies, and state legislatures, to become more transparent and accountable for their actions. It is more important than ever, then, for colleges and universities to engage in authentic strategic planning that may be embraced by both internal and external constituents. Unfortunately, strategic plans often do not work to move an institution forward. Using organizational principles and theory, this essay reframes the university strategic planning process with communication as its centerpiece. A case study is presented that illustrates how communication centered strategic planning can lead to the most meaningful and successful plan, thus improving the internal and external credibility of the institution.

"In the absence of communication from leaders, the organization will seek information from other sources, whether those sources know what they're talking about or not. Your silence doesn't stop the conversation; it means you're not participating in it."

> Jeanie Daniel Duck The Change Monster (2001)

INTRODUCTION

Whether an institution engages in strategic planning due to governing board or administrative mandates, accreditation criteria, or because "everybody else is doing it," strategic plans have historically been part of organizational life that will not go away. It is something we do. But far too often, once it is completed, we rarely look at the plans again. Even worse, when our institution happens to have successes in areas not in our plans, we add them in after the fact as sort of a "plan addendum".

Many institutions have not taken planning seriously because the perception is that strategic plans have rarely worked to move them forward. Why is this true? The organizational structure and culture of higher education institutions make strategic planning particularly problematic. Whereas many private sector organizations may reflect a more collective society, colleges and universities mirror the individualistic nature of our society. Academic departments, for example, exist due to their expertise in a particular discipline. Faculty members work as independent agents who carry out their teaching and research duties relatively untouched by larger organizational issues (Willson, 2010). It is no wonder that they cringe at the very thought, much less the creation and implementation, of a strategic plan. In colleges and universities around the country, even administrators often breathe a sigh of relief when the plan is completed and placed as a link on the homepage.

Rowley and Sherman (2001) note that, "In the postmortems [of strategic planning],

faculty, administrators, staff, and members of the governing board all blame the general [strategic planning] process" (p. 5). On many campuses, academic departments quietly go their own way, disregarding a plan for which they know they will not be held accountable.

CHANGING TIMES

In education circles, the infamous 2006 Spellings Report was a major wake up call. It chastised postsecondary education by stating that "the quality of student learning at U.S. colleges and universities is inadequate and, in some cases, declining" (U.S. Department of Education, 2006, p. 3). It initiated a new era for strategic planning and assessment. With pressure from the federal level, regional accreditation agencies, and state legislatures, we have entered an age of "accountability," and now it is even more important for institutions of higher education to take strategic planning more seriously. In short, it is time to shake the dust off the plan and begin an authentic process for engaging in planning and assessment.

Noting changes in regional accreditation expectations, Bardo (2009) states that "the number of reports, the expected details of outcomes measures, and the level of ongoing interaction between the institution and the regional association will continue to increase" (p. 29). He goes on to say that, due to increased accreditation requirements, authentic strategic planning will be a crucial factor in achieving successful reaffirmation. Public institutions have the added complexity of more stringent state regulations and federal requirements. The bottom line is that institutions of higher education can no longer avoid creating and maintaining a transparent planning and assessment process. Academic and administrative departments can no longer go their own way. There is too much at stake.

Added to the complexity of campus attitudes toward planning and assessment are the difficult economic times we are now facing. As institutions across our nation lose faculty, staff, and even entire academic departments, there are now cries of "Why plan? We have no money to address new initiatives anyway." However, scholars who study planning issues argue that strategic planning is indeed worth the effort if carried out appropriately. Rowley and Sherman (2001) observe what occurs when strategic planning is rejected. "Problems don't go away, they get worse. Life doesn't become less complicated, it becomes more so. And if campuses don't improve, they slide further and further into difficulty and thence oblivion" (p. 23).

Strategic planning is a crucial element in helping campuses to make a successful transition from who they are now to what they want to be in the future (Keller, 1983). Shirley (1988) highlights the importance of strategic planning in aligning campuses with increasing numbers and demands of vocal stakeholders. More recently, Rowley, Lujan, and Dolence (1997) state that strategic planning is crucial to an institution of higher education in creating a dynamic fit with its environment. The problem may be then, not the strategic plan concept, but the *process* used to create the plan.

TYPICAL PLANNING MODELS

Due to the loosely coupled and often decoupled organizational structure of higher education institutions (Weick, 1995), strategic planning is generally driven by the top of the organization. Often the process, and resulting strategic plan, resembles "internal" marketing where "tell and sell" is the dominant communication strategy (Clampitt, DeKoch, & Cashman, 2000). A typical model of the process may be described as follows.

As the five or ten year planning cycle comes to an end, institutional leaders, such as the president's leadership team, meet to decide new goals and direction for the university. They pay attention to legislatures, coordinating boards, boards of trustees, higher education trends, and yes, sometimes a few on-campus constituencies, to come to consensus on what goals the university strategic plan should encompass. These goals are typically shared with a slightly larger internal audience, along with instructions to "disseminate" goals to departments and see that they are implemented. This done, higher administration moves on with the confidence that they have created a plan that will address external pressures and serve university needs.

This kind of executive model for decision-making is not uncommon. Nutt (1999, 2002) tracked the success rate of decisions made by executives and managers at 356 different companies over the course of nineteen years. He found that nearly two thirds never explored alternatives once they made up their minds and that 76% used persuasion or edicts rather than discussion and participation to gain acceptance of ideas. With regard to implementation and success rate, persuasion failed 56% of the time, and edicts failed 56% of the time. This same research indicated that intervention (i.e., discussion of problems and performance gaps) was successful 96% of the time, and participation (i.e., announcing a broad, overarching objective and involving employees in decision-making) was successful 80% of the time. Clearly, the results of this research have implications for strategic planning process models in institutions of higher education.

ALTERNATIVE PLANNING MODELS

Recently, planning scholars have introduced planning models that address the complexity of the process and components needed to ensure success. To varying degrees they address communication as an important element in this process. For example, Cordeiro and Vaidya (2002) outline a variety of "lessons learned" from their work with strategic planning. They suggest the following: 1) identify, prioritize and allocate funds to key strategies, 2) use faculty members as consultants, 3) make the process clear, 4) effectively communicate the planning message, 5) have clear and measurable objectives, and 6) build flexibility to recognize and respond to internal and external environment changes. While the authors mention communication as one of the components of the process, they lean toward the "providing information" aspect of communication rather than an "engagement" perspective. They state, "What is necessary, however, is a methodology for ensuring that stakeholders understand the process, how issues are addressed, and what the plan is intended to accomplish" (p. 30). An actual communication process to facilitate the planning process is not outlined.

Rowley, Lujan, and Dolence (1997), likewise, describe a ten step planning process that includes such things as performing an external and internal environmental assessment, conducting a strengths, weaknesses, opportunities, and threats (SWOT) analysis, and formulating strategies, mission, goals, and objectives. They suggest a participative rather than top-down planning process. Again, however, they do not describe a communication model that will accomplish this task. Although references to the importance of communication and participation in the strategic planning process are not absent from planning literature, a focus on communication as the *centerpiece* of successful strategic planning is missing.

Willson (2006) speaks to the notion of combining planning approaches to address higher education institutions. He notes four planning approaches (i.e., rational, incremental, strategic, and communicative) and suggests relating these approaches to the organizational culture of the institution (Willson, 2003). In addition, he explores how Habermas' communicative action theory applies to planning through the use of a case study.

Planning research is also beginning to discuss the notion of change as an issue important to address in the planning process. Lick and Kaufman (2000/2001) outline four roles of change—change sponsorship, change agent, change target, and change advocate—that aid in understanding the dynamics of change and building the levels of commitment necessary to sustain change. However, they do not address how change can be communicated effectively, as has been addressed in much organizational communication literature (Clampitt & DeKoch, 2011). Polka (2007) notes that in order to facilitate change leaders need to address six employee professional "high touch" needs. The first need mentioned is communication.

Finally, in their article on educational planning foci from 1974 to present, Lindahl and Beach (2010) outline major themes that occurred in International Society for Educational Planning (ISEP) publications during these years. They note that, although feedback loops had some emphasis in the late seventies and eighties, "recent articles tend to mention these loops briefly as part of the overall planning process, rather than focusing on them specifically" (p. 3).

A CASE FOR COMMUNICATION AS THE CENTER OF PLANNING

At this point in the article, you may be thinking, "I communicate what needs to happen all the time—in memos, via the internet, and in hard copy. Still, faculty and staff show little understanding of the importance of planning and assessment." The issue is, what do we mean by "communication?" If you, as a leader, are sending messages via the modes described above, you are not necessarily "communicating" with stakeholders. An organization cannot be successful when leaders simply transmit messages, even if the quantity or quality of those messages is excellent. Communication is much more than just sending messages. It involves being audience centered, developing relationships, listening to the needs and perspectives of others, and adapting messages to the receivers' needs. A successful organization is one where stakeholders understand each other's point of view, develop some degree of agreement, and choose to act in a collective way to accomplish their mission. With ineffective communication, an "organization" at best is a collection of decoupled work units. At worst, it is a configuration of disjointed, isolated individuals. Given the decentralized nature of university culture, effective communication may be even harder to achieve within the organization.

Any discussion of leadership, then, must attend to the dynamics of the relationship between leaders and other members of the institution (Kouzes & Posner, 2002). Because communication is the fundamental tenant of leader-employee relationships, effective downward, upward, and lateral communication among leaders and employees can facilitate an organizational climate where both routine business and major change initiatives can occur. This, in turn leads to greater success for the organization itself.

Most organizations, public or private, understand the importance of strategic

communication with external stakeholders and current or potential customers. Marketing plans are commonly used to outline strategic communication for these audiences. Yet institutions rarely approach internal communication in the same way. We know, however, that the most successful institutions create missions, goals, values, and procedures to facilitate a more common culture where employees identify with and are committed to the organization (Williams, 2008). A common culture brings coherence to the workplace and greater organizational identification for employees. But how do we achieve this kind of culture? Bacal (1998) notes the following:

When we look at organizations that use their common culture as a strategic advantage, what we find is that they create that culture through the use of very strategic, coordinated communication strategies. They use multiple methods, consistently. Their training supports their cultural goals, as does their written communication (e.g. newsletters, billboard, slogans, etc.). Their management communicates consistently with common messages in a number of forms (e.g. performance management, department or sub-organization meetings, award and recognition programs, etc.). And perhaps most important, management behavior is consistent with the messages echoed via other communication methodologies. . . internal communication, in its broadest sense, is the key to bringing that [common culture] about. It won't happen unless we are proactive in our communication and coordinate our efforts so they convey consistent, compatible messages (p. 4).

Organizational research supports the notion of effective communication as crucial to moving an organization forward. Belasen (2008), in his discussion of stakeholder theory, outlines seven principles of stakeholder management (often referred to as Clarkson Principles). Principle 2 states that "Managers should listen to and openly communicate with stakeholders about their respective concerns and contributions. . . [Effective communication] involves discourse between managers and stakeholders. Managers should try to understand the multiple perspectives of the stakeholders" (p. 185-186).

Strategic, coordinated communication strategies, then, are at the heart of creating a common organizational culture. Some have even concluded that internal communication, where there is talk back and forth within the organization as well as up and down the hierarchy, may well be more important to a company's success than external communication (Young & Post, 1993).

Yet leaders have been slow to embrace the importance of communication to organizational success. Clampitt and Berk (1996) note three primary reasons. First, communication has been wrongly perceived as a cost that does not produce measurable return. This has occurred because researchers have had some difficulty in linking how an institution communicates with its success or profitability. Second, communication has long been perceived as a technical skill, not a strategic activity. Finally, senior managers have had a longstanding fear of a process they believe cannot be totally controlled.

However, shying away from engaging in strategic communication during times of significant change only serves to alienate employees who complain about lack of information in a decision making process affecting their lives. What leaders need to know is that, as "messy" as the process is, true buy-in to new ideas and new directions for an organization can only occur when those within the organization believe they are part of the decision making process. Salem (2008) notes that "Communication is a social process in which individuals can make sense together, and artifacts are only an opportunity for making sense, an opportunity for conversation. Complaints about inadequate information are complaints about the lack of opportunities to make sense together" (p. 5).

HIGHER EDUCATION STRATEGIC PLANNING AND COMMUNICATION

A strategic communication model can actually allow planning to serve as an "artifact" that assists faculty, staff, and students to understand their institution, and, more importantly, feel a commitment to its goals. Farmer (1990) notes that effective planning can contribute to the kind of campus environment that supports change. Specifically, an open planning process can provide the dynamics through which the university's vision is translated into specific planning objectives and implementation strategies. Farmer (1990) emphasizes the prominent place of oral communication in the planning process at King's College.

Extensive face-to-face deliberation provides opportunities for immediate feedback, both verbal and nonverbal, on proposed objectives and strategies . . . The ability to deal immediately with responses, acknowledging the ideas and the feelings of people involved in the planning process, helps to nourish a widened sense of ownership and also to transform discussion of planning objectives into productive talk about the implementation strategies (p. 12).

A strategic planning process that embraces a model of open, two-way communication has an additional advantage. It can become a heuristic devise for reconceiving the entire internal communication system. For example, with a new planning initiative, leaders may want to analyze the climate in which the planning will take place. They may ask such questions as "What are the key beliefs and values of stakeholders?" "What is their emotional state?" "What are they willing to do?" "How disposed are they toward change?" A communication strategy that builds an analysis of context into the system cannot only aid the planning but also facilitate successful institutional change.

Implementing the Communication Process

Initially, those in charge of planning for a university or college need to consider three key components of the strategic communication process:

- Who are the stakeholders in the planning process?
- What messages do you want to communicate to the various stakeholders?
- Who will be involved in communicating the chosen messages?

Who are the stakeholders? With regard to stakeholders, Belasen (2008) encourages leaders to include both internal and external groups and individuals. This would include anyone who values "the goals and interests of the organization, in managerial decision-making processes" (p. 179). Although there are differences among institutions due to size, private/public status, region, and state, the most salient stakeholders for most higher education institutions would typically include faculty, staff, administrators, students, parents, governing boards, legislators, and accreditation agencies. All these have some "stake" in the institution's goals. A strategic plan outlines those goals and includes steps to reach those goals. Therefore, it becomes an important artifact in the conversation among stakeholders about the goals of the institution. As you view this list, you can easily see that these groups do not all have the same vision about institutional priorities. Belasen (2008)

states that, because stakeholders often have competing values, leaders should take on the responsibility of finding out what stakeholders want. "Better communication also helps prevent conflict before it has a chance to percolate" (p. 180). This "conversation," although tedious during the initial stages of the planning process, does lead to greater ownership of the strategic plan.

In an effort to bring others into this conversation, the leadership of the institution could engage the campus community in a review of the current strategic planning process. Groups including deans, chairs, faculty, and staff could have input into the process and provide feedback. In this way the president makes it clear that stakeholder opinion matters, and the campus community believes it is part of the future of the university.

What messages do you want to communicate to stakeholders? At first blush, this may seem like an odd question. However, leaders must pay attention to the varied perspectives of stakeholders to understand what is most important to each of them. Although there may be some broad goals on which all stakeholders agree, different stakeholder groups often want to hear their specific interests reflected in the messages they receive about planning. For example, faculty may want leaders to talk about student learning or program development with regard to the plan. Staff may want to hear how important their role is in supporting the academic mission of the university. Governing boards may want to know more about how the strategic plan will lead to prestige. Therefore, leaders must be "audience centered" in their communication. This means that leaders need to take into consideration the knowledge, attitudes, and interests of their various audiences with regard to the institutional goals and direction in order to tailor messages accordingly. They must also allow feedback from the various audiences to refine, clarify, and provide authenticity to the planning process.

Who will be involved in communicating the chosen messages? Most institutions of higher education have an office that oversees planning and assessment. Sometimes the president or provost will lead the initiative. A strategically communicative planning process, however, requires more than the "official" leadership of the institution to lead if it is to be successful. Particularly in larger institutions, deans and department chairs must take an active role in discussion regarding the strategic planning process. Middle management, as well as directors at the first level of management, must be able to have conversations and actually consult with their faculty and staff on the plan's goals and outcomes. They can then serve as liaisons to the provost, president, and other officials in charge of planning in communicating feedback of faculty and staff within the smaller units of the institution. This way the voices of stakeholders across campus will be heard, leading to a more authentic plan with greater buy-in.

Another important avenue for engaging in strategic communication is through opinion leaders within academic and administrative departments (Rogers, 2003). An opinion leader is an individual whose ideas and behavior serve as a model to others. Opinion leaders communicate messages to a primary group, influencing the attitudes and behavior change of their followers. Often faculty and staff pay more attention to experienced, knowledgeable people in their own departments than to anyone who speaks for the "larger" institution. At an academic institution, it isn't very hard to learn who these people are. You have probably even relied on this type of person to chair committees and serve as a liaison in other capacities for the institution. Opinion leaders provide yet another avenue to carry on the important conversations needed to result in a meaningful plan. It is important to remember that one-way communication is not true communication. True communication will result only if the feedback loops are in place and positive changes result from the conversations.

When selecting those members of the university or college community who should play a leadership role in the strategic planning process, it is crucial that they be perceived as credible. Kouzes and Posner (2003) spent over a decade of research addressing the characteristics of most admired leaders. Consistently, four characteristics emerged: honest, forward looking, inspiring, and competent. At all levels of leadership, whether they be formal or informal leaders, those chosen to engage in communicating with stakeholders should possess these qualities in order for communication to be successful in the planning process.

Addressing these three questions provides a strategic communication framework that serves as the foundation for the planning process. However, this framework, alone, does not ensure success. Communication throughout the planning process should be based on sound principles that have been shown to facilitate change initiatives. Below is a summary of communication guidelines to incorporate into the planning process.

COMMUNICATION PRINCIPLES OFTEN OVERLOOKED IN PLANNING

As noted earlier, most planning models do not incorporate effective communication as a centerpiece of the planning process. Implementing the following communication principles provides a necessary ingredient for success:

- The first principle of effective communication is to "<u>analyze the audience</u>." The many sub-audiences and opinion leaders in the organization must be considered to determine their receptiveness to messages and strategies. When communicating change, such as will inevitably occur with the creation of a new strategic plan, leaders must realize that resistance is likely to be encountered at all levels of the organization. Understanding the reasons for resistance and having conversations about related issues will aid greatly in creating a smoother strategic planning process.
- Before the strategic planning process is launched, leaders at all institutional levels should be <u>trained to implement the process</u> as part of the regular business, be knowledgeable about successful communication processes, and be held accountable for providing information and feedback to their departments or divisions.
- Messages related to the <u>strategic planning process should be linked to the</u> <u>institution's mission statement</u>. The mission statement provides a collective identity for stakeholders. It is the "charter" and "constitution" on which the organization is grounded.
- Although more time consuming than regular planning models, a communication based strategic planning process depends upon <u>interpersonal</u>, face-to-face channels

that allow two-way exchange and feedback. This, in turn, will prevent selective perception on disliked topics, provide greater detail, and more effectively get receivers to change strongly held attitudes.

- <u>Designated and clearly identifiable locations on the university website</u> can be used to update the steps in the planning process, provide documents that are under review by various stakeholders, solicit feedback to documents, and allow those in the university community to record their questions.
- The more <u>stakeholders at all levels of the institution are engaged in the</u> <u>"conversation"</u> about planning, the more committed they will be to do their part in implementing the plan. Participation allows stakeholders to voice frustrations and offer suggestions that may be important to strategic plan implementation.
- <u>Those leading the institution must claim ownership of messages</u>. When leadership delegates ownership, it signals to those in the organization that the message is not important enough for leadership to devote time to it. In addition, insufficient communication from senior leaders will often result in middle management killing initiatives.
- Deans, directors, and department chairs are crucial to "translating" the university strategic plan for faculty and other employees as the process unfolds. This translation provides focus and meaningfulness at the operational level and helps stakeholders understand how the plan affects them. In addition "middle management" can serve as an upward communication liaison for suggestions and concerns expressed.
- Communication alone does not create buy-in. It creates expectations that there will be follow through and action taken on the initiatives. Therefore, <u>communication should be considered an ongoing dialogue that supports progress</u> on initiatives that are being implemented. Institutions with a "high say" "low do" organizational climate create the perception among stakeholders that communication is all talk and no action, thus creating distrust.

COMMUNICATION BASED STRATEGIC PLANNING: A CASE STUDY

The case study outlined here involved a large southwestern state university. This process was led by a new president whose tenure followed an administration that used a more traditional top-down methodology. It is an example of a "top down" "bottom up" approach that used communication as the centerpiece for strategic planning. It included the following nine steps.

Step 1: Review of Previous Planning Process

Trust is an essential prerequisite for communicating change and should be "a consciously pursued institutional goal" (Farmer, 1990, p. 10). At this university, dissatisfaction in the planning process, resulting from a long history of limited stakeholder involvement, was a critical issue that needed to be addressed.

In order to attend to this issue, the first step was to allow stakeholders to critique the previous planning process. To answer the question, "Who are the stakeholders?" the president's leadership team met with the associate vice president in charge of planning to come to consensus on this issue. They decided to solicit initial feedback from stakeholders, including deans, chairs, faculty and staff, about the old planning process. Four separate groups of stakeholders were charged with meeting for one semester to discuss, critique, and provide ideas to the associate vice president in charge of planning, as well as provide formal public reports that were shared with the leadership team. Ad hock groups included a presidential task force (consisting of key faculty and staff leaders throughout the university), the council of deans, and the council of chairs. In addition, the standing university committee on planning that was in place when the new president arrived also critiqued the previous planning process. Because the president ensured that academics would drive all university initiatives, an academic planning steering committee convened to review all reports and make formal recommendations for the new process to the president's leadership team. Note that these groups did not just include persons in designated leadership roles. The persons chosen to serve on the academic planning steering committee were true opinion leaders within their colleges and within the university. They embraced the characteristics perceived as important to good leadership. The associate vice president in charge of planning met regularly with the president and vice president for academic affairs to ensure that these recommendations would be included in the new planning process. The committee also developed a planning calendar that incorporated formal feedback loops at all planning junctures.

Step 2: Environmental Scan Process

Most universities go through some kind of environmental scan and evaluate strengths, weaknesses, opportunities and threats (i.e., SWOT analysis) when a strategic planning process begins. However, rather than have one office gather and provide information on the environment, a process was developed to identify thoroughly all possible environmental impacts on planning, both internal and external, to all university levels. Academic departments created SWOT analyses and environmental scans that took an "inside out" approach to initiatives they were attempting. Reports included what departments needed for support to carry out initiatives they were discussing, including infrastructure. Departments also had the opportunity to produce an environmental scan that reflected unique environments. In addition, the office for institutional effectiveness provided input for a university scan, including possible local, regional, state, and national impacts. This was the first time that internal and external impacts on planning had been aggregated in a meaningful way to determine how colleges and the university would have to prioritize initiatives using limited resources. The information was gathered and shared with the academic planning steering committee for synthesis. In addition, the information was announced and placed on the planning web-site for review by the university community. This transparency helped engender trust in those who had previously been skeptical of the planning process.

Step 3: "Bottom up" Feedback Process

Often university goals are laid out by administration and "presented" to the university community without true input from those who will actually carry out the initiatives

to support those goals. Such was the case of the university studied in this analysis before the arrival of the new president. The new administration, however, wanted to send a clear message that the planning process would be transparent, and that stakeholders would be consulted about university goals and direction. This message was reiterated to stakeholder groups by the vice presidents, deans, chairs, and members of the academic planning steering committee. At this point in the process, the framework for strategic communication had been set. Stakeholders had been identified, and a clear, consistent message was delivered by appropriate opinion leaders. In addition, feedback loops were in place. This framework provided a more trusting atmosphere where stakeholders knew that they were participating in the planning conversation.

With environmental scan assessments and departmental internal evaluations in place, all academic units were equipped with the appropriate information to frame a realistic vision for their departments. Whereas university goals had previously been framed by administration, university goals actually grew out of the vision and direction of departments and colleges.

In order to capture the collective academic vision for the university, the newly formed academic planning steering committee framed questions that were distributed to all academic departments, seeking essential information to develop university goals. Answers to these questions served as both information for university planning and, more importantly, discussion at the department, college, and academic division levels. The discussions across organizational lines (i.e., department to department and college to college) led to a better understanding of diverse views and the need to engage in dialogue to create consensus about a collective vision among university community members. Instead of "persuasion from the top," the university was collectively contributing to the creation of those goals.

Step 4: Planning Categories

Based on college and department feedback on planning questions, the academic planning steering committee created planning categories that would provide the framework for university goals. Departments provided information about the plans they were creating with regard to academic programs, teaching excellence and student learning, scholarly and creative work, development, and diversity. These documents were made available to everyone on campus via the web. Not only did the resulting public documents collectively assist the framing of university goals, they also activated important conversations among departments and colleges that had never occurred before. This sharing of information allowed departments and colleges to see where collaborations could take place, where duplications of initiatives were occurring, and what opportunities there may be for future academic initiatives. In addition, academics could contribute information to goals they embraced because the goals were part of what academics "do for a living." These categories then became the basis for the creation of department, college, and, finally, university goals.

Within academic affairs, perhaps the greatest value of looking collectively at what individual departments wanted to accomplish was the realization that the university could not do it all. Thus, the new planning process called on departments, colleges and the division of academic affairs to prioritize maintenance needs and new initiatives within their plans. Maintenance priorities included such items as new faculty or operational budgets to maintain an existing program with growing numbers of students. Chairs met with faculty to create department plan prioritization, deans met with chairs, and deans met with all faculties in their college to discuss the college plan and what it would prioritize. In these sessions faculty had the opportunity to discuss, provide feedback, and make suggestions for the college plan. This iterative process allowed departments to commit to the college plan because they were now part of the "conversation." Deans then presented final plans, including plan priorities, in open forums where everyone on campus was invited to attend. In addition, the forums were taped and placed on the web for those who were not able to attend.

Finally, each dean met with the vice president for academic affairs to make a case for the college's priorities. The vice president of academic affairs was charged by the president to make choices as to what programs and new initiatives would be lifted up to the division plan. This plan, along with academic affairs priorities, was also presented in an open forum and placed on the web for viewing and monitoring.

Because the new planning process continued to engage faculty and staff through communication, in the form of the public presentations and publicized written documents, the university community was able to follow the planning "track" and have a greater understanding of <u>why</u> certain priorities and decisions had been made. Thus, trust continued to build, and participation in the process grew.

Step 5: Mission Statement Review

A crucial part of the success of the strategic planning process was the decision to review the university mission statement to determine what changes, if any, needed to be made. The timing for conducting this review was intentional because the best time to reevaluate the university's mission was when all academic departments were already laying groundwork for their future that would lead to decisions for the university's direction. Rather than having an "imposed" mission statement, the campus community was provided the opportunity to create a mission statement that reflected the direction outlined in the newly created academic plan.

The president wanted a mission statement that would truly be a guide for university initiatives. Thus, the mission statement process reflected the new "open communication" perspective that was now beginning to be embraced by a campus that had a history of limited feedback systems. Academic departments, administrative units, and student body leaders (in groups) reviewed the "then" current mission, vision, and core values statements to 1) come to consensus on elements of these statements they considered fundamental to the mission and create a prioritized list, 2) answer the question "What should be included, but isn't," and 3) answer the question, "What is distinct about our university?" Units were asked to provide their title (e.g., Department of Psychology) along with the number of people who participated in the discussion. Participation was optional. Feedback was collected and publicly posted to the web. The president then appointed a mission statement. The draft statement was placed on the web for review by all students, faculty members, and staff. After several iterations, the final statement was created and approved by the president's leadership team and later the board of regents.

Step 6: Administrative Division Planning

After the mission review process was completed and academic affairs stakeholders

completed strategic plans, the academic planning steering committee was expanded to included appropriate leaders from administrative divisions so that support divisions could begin their strategic support plans, based on information gleaned from academic plans. The expanded committee was charged to develop, evaluate, and modify planning and assessment processes in academic and administrative units. By providing a framework that addressed basic planning concerns (e.g., assessment and resource allocation), the committee considered the needs of the entire university, as well as external mandates.

With academics at the core of university processes, administrative divisions now had the opportunity to view all academic strategic plans to provide the support needed to achieve university goals. Whereas support divisions had previously created plans separate from the division of academic affairs, they now had the ability to determine academic needs, have conversations with departments, and provide feedback to the administration on the needed infrastructure and other support as they created plans that would support the academic endeavor. In keeping with the planning categories that had been created for academic affairs, administrative units used a collaborative process similar to the academic affairs process for creating their plans. All vice presidents presented their plans in open forums, and all on campus were invited to attend.

The presentations made by support division vice presidents provided an unexpected "plus" for the university collaboration that had not been anticipated. Generally, academic and administrative sides of the university remain in their own "corners," never completely understanding the importance of working together for student success. Public presentations by divisions such as student affairs provided a greater understanding of how academic affairs and student affairs could combine resources and ideas to create a better, broader learning environment for students. The student affairs division, for example, provided formal study sessions in freshman dorms to support similar strategies in academic plans. Again, the opportunity for conversation and feedback led to a better, more meaningful strategic plan.

Step 7: Creating a "Living" Plan

As mentioned in the introduction, one of the most problematic issues facing any strategic plan is whether or not it will actually be used to guide initiatives at all university levels. The new planning process addressed this issue. Committees were formed to "read across" all major planning categories in college plans in order to 1) identify opportunities where colleges could share ideas and build on initiatives, 2) aggregate resources requested by all colleges, 3) identify infrastructure needed to fulfill requests, and 4) report on types of support or guidance that could be provided for colleges about which they may not have information. Each committee prepared a report for the president's leadership team, and separate discussions between committee members (i.e., representative faculty, staff, and student stakeholders) and the deans, vice presidents and the president began. Reports were shared throughout campus, and decisions about prioritizing initiatives within plans were guided by discussions resulting from the reports. For the first time, faculty and staff could see that their plans were not only being read, but were being used to frame arguments and provide information for prioritizing university initiatives, infrastructure, and other forms of university support. In addition, because information was shared, various academic and support units had the opportunity to discuss needs and realistically look at what could be provided.

Step 8: Development of University Goals

Because the university used an open, collaborative, communicative process to determine direction, initiative priorities, and the university mission statement, university goals evolved naturally from previous planning process activities. Although formally reworded, the goals related directly to the planning categories that grew out of original planning questions to academic departments concerning academic programs, student learning and success, scholarly and creative activity, development, and diversity.

For each of these broad goals, "intended outcomes" to make progress toward the goal were created. These outcomes were derived from initiatives outlined in college and division plans, reports and recommendations from "read across" committees, presidential commitment to new initiatives already underway, and external state and accrediting agency expectations.

Step 9: Developing Final University Plan Draft

By the time the final draft of the university plan was completed, all stakeholders across campus had been given the opportunity to provide input on all aspects of the plan via departmental, college, and division discussions, as well as presentations, information, and feedback opportunities via the web. From the plan's initiatives and goals to the university mission statement, campus stakeholders had opportunities for ownership of the final university plan. The implementation of communication principles and strategies proved to be successful in moving the organization forward.

CHALLENGES IN USING A COMMUNICATION BASED PLANNING MODEL

Although the planning process and resulting plan proved to be a success, communicating the process and getting buy-in was sometimes problematic. The following are challenging issues inherent to using a communication based planning process for university planning.

1. In institutions having a history of mistrust with administration, the introduction of a new planning process can easily be perceived as a "Here we go again" initiative forced on the campus community.

The new leadership realized trust among some university employees may be a problem as the process began. Following the announcement of a new planning framework, the usual negative comments were made in some departmental hallways and meeting rooms. However, once the president announced that the planning process would be "open and collaborative," all levels of leadership had to consistently illustrate that in every portion of the process. Only when campus stakeholders began repeatedly to see their ideas being implemented in discussions about the plan did trust begin to build. Toward the end of creating the process, much more buy-in occurred.

2. Implementing a communication based planning process is time consuming, especially within the context of a large university setting.

From inception to completion, ending in the creation of department, college, division, and university plans, the new planning process took over two years to create.

During that time, the president put on hold the submission of proposals for new Ph.D. or other programs, as well as other proposed initiatives, until the new university plan was completed. Only programs and initiatives specifically given the "go ahead" by the previous administration were cleared to move forward. The president believed that all initiatives needed to reflect the new mission and university plan before they would be considered. Although some departments across campus grumbled, the message communicated clearly that the new plan was a true guide for the future of the university, thus reducing further skepticism on the part of the campus community.

It is difficult, if not impossible, to be both "efficient" and "effective" in a communication based process. However, the benefits of an engaged university community greatly outweigh the time and effort required.

3. Given the decoupled organizational structure of universities and colleges, and faculty allegiance to departmental goals rather than university goals, faculty participation is difficult to engender during a university strategic planning process.

Because faculties are crucial to ensuring that university initiatives are actually implemented successfully, their participation in any planning initiative is important. Morris (2000) noted, "We know decisions would not be accepted or implemented without participation [by faculty]—or at least consultation" (p. 55). In addition, organizational literature supports the notion that employee participation has positive effects on job satisfaction, commitment, performance, and acceptance and implementation of change (Miller & Monge, 1986; Seibold & Shea, 2001; Wagner, 1994). Morris (2000) summed up faculty attitudes toward strategic planning participation through the response of one faculty member participating in the study.

In the eyes of most faculty members, committee work is time consuming and typically results in little more than a report that sits on some administrator's bookshelf. In addition to tangible rewards, there must be visible action and recognition on the part of the institution with regard to the work of the committee. Faculties have to see the effort as more than an "academic exercise" (p. 64).

The initial faculty attitude discussed in this case study differed little from the statement made above. However, over time most faculty became convinced that the planning process was more than an academic exercise. Committee membership included respected faculty opinion leaders appointed by the president. All recommendations made by various committees were taken to the president and implementation of recommendations began quickly. Committees were recognized in the university plan and on the web, as well as in speeches made by the president and other university top administrators. The experience represented a true "flattening" of the organizational structure.

4. Guiding any process from the top of the organization is always problematic, especially when messages are incorrectly translated.

Wood (1999) states that previous organizational research has found immediate supervisors to be the primary information sources for employees. Although all parts of the institution in this case study were included in the communication process, first level managers and opinion leaders often had more influence than those at the top of the organization. This pattern is common in organizations undergoing change (Larkin & Larkin, 1994; Quirke, 1996). In implementing the strategic planning process, the university was dependent on the translation of many messages by department heads and other opinion leaders within the institution. Some department heads and opinion leaders did not believe in the process or had reasons for rejecting it for what they perceived to be advantageous to their individual department or personal agenda. In these cases, they "translated" the message negatively to those over whom they had influence, thus slowing down overall acceptance into the process.

In order to counteract this trend, most of the messages were sent to all university stakeholders to interpret so that they could come to their own conclusions. Although this did bother some middle managers, it did engender conversations that would never have occurred if a larger audience had not received the message.

5. Because many managers are not knowledgeable about communication principles and effective group processes, this hinders the use of consensus building communication.

Clampitt, DeKoch and Cashman (2000) note that, in continuously changing organizations, CEOs should engage employees at all organizational levels in communicating the core message. This is one area of the planning process that was problematic. In this case, it was not that managers were necessarily against a communication based planning process. Some simply did not know how to carry it out. Although most chairs and directors had gone through leadership training based on communication principles, there had not been enough training to allow people at all leadership levels to integrate communication principles into their leadership styles.

Argenti and Formen (2002) suggest that "making communication a core value and including it as an integral part of any performance review will guarantee that this value permeates all levels of you organization" (p. 144). Recognizing this, the university has implemented more communication based leadership training for all directors, chairs, and other middle management positions in hopes that training will lead to better leadership.

CONCLUSION

Because strategic planning at institutions of higher education, as well as other organizations throughout the country, will continue to exist as part of the organizational culture, it seems prudent that the most meaningful method of conducting strategic planning be investigated. Toward that end, the purpose of this article was to reframe the strategic planning process with strategic communication as its centerpiece. Although many conducting planning research incorporate communication elements within the process they propose, none focuses on communication as the core component.

To better clarify the communication centered approach to strategic planning, a case study was presented. The planning process employed at a large southwestern state university illustrates how well established communication principles and organizational communication theory can be integrated into a strategic planning process. The resulting plan served as an authentic guide to create and implement the university mission and goals. Furthermore, we conclude that institutions should consider how a communication centered strategic planning process can be used to address both routine and non-routine communication, and thus improve their credibility in the current age of accountability.

REFERENCES

- Argenti, P., & Forman, J. (2002). *The power of corporate communication*. New York: McGraw-Hill.
- Bacal, R. (1998). Performance management. New York: McGraw-Hill.
- Bardo, J. W. (2009). The impact of the changing climate for accreditation on the individual college or university: Five trends and their implications. *New Directions for Higher Education*, 145, 47-58.
- Belasen A. T. (2008). *The theory and practice of corporate communication: A competing values perspective*. Los Angeles: SAGE Publications.
- Clampitt, P. G., & Berk, L. R. (1996). Strategically communicating organisational change. *Journal of Communication Management, 1,* 15-28.
- Clampitt, P. G., & DeKoch, R. J. (2011). *Transforming leaders into progress makers: Leadership for the 21st century*. Thousand Oaks, CA: Sage Publications.
- Clampitt, P. G., DeKoch, R. J., & Cashman, T. (2000). A strategy for communicating about uncertainty. *Academy of Management Executive*, *14*(4), 41-57.
- Cordeiro, W. P., & Vaidya, A. (2002). Lessons learned from strategic planning. *Planning for Higher Education*. 30(4), 24-31.
- Duck, J. D. (2001) The change monster. New York: Crown Business.
- Farmer, D. W. (1990). Strategies for change. *New Directions for Higher Education*, *71*, 7-18.
- Keller, G. (1983). Academic strategy: The management revolution in American higher education. Baltimore: The Johns Hopkins University Press.
- Kouzes, J. M., & Posner, B. (2002). *The leadership challenge (3rd ed)*. San Francisco: Jossey-Bass.
- Kouzes, J. M., & Posner, B. (2003). *Credibility: How leaders gain and lose it, why people demand it.* San Francisco: Jossey-Bass.
- Larkin, T. J., & Larkin, S. (1994). Communicating change: How to win employee support for new business directions. New York: McGraw-Hill.
- Lick, D. W., & Kaufman, R. (2000/2001) Change creation: The rest of the planning story. *Planning in Higher Education*, 29(2), 24-36
- Lindahl,R. & Beach, R (2010). Educational planning foci in ISEP publications, 1974 to present: A retrospective essay. *Educational Planning*, 19(1), 1-9.
- Miller, K. I., & Monge, P. R. (1986). Participation, satisfaction, and productivity: A metaanalytic review. Academy of Management Journal, 29, 727-753.
- Morris, S. B. (2000). Pondering faculty participation in strategic change. *Planning for Higher Education*, 28, 55-66.
- Nutt, P. (1999). Surprising but true: Half the decisions in organizations fail. Academy of Management Executive, 13(4), 75-90.
- Nutt, P. (2002). *Why decisions fail. Avoiding the blunders and traps that lead to debacles*. San Francisco: Barrett-Koehler Publishers.
- Polka, W. S. (2007). Managing people, things, and ideas in the "effective change zone": A "high-touch" approach to educational leadership at the dawn of the twenty-first century. *Educational Planning*, 16(1), 12-17.
- Quirke, B. (1996). Communicating corporate change. New York: McGraw-Hill.
- Rogers, E. M. (2003). *Diffusion of innovations (5th ed.)*. New York: Free Press.

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- Rowley, D. J., & Sherman, H. (2001). From strategy to change: Implementing the plan in higher education. San Francisco: Jossey-Bass.
- Rowley, D. J., Lujan, H. D., & Dolence, M.G. (1997). Strategic change in colleges and universities: Planning to survive and prosper. San Francisco: Jossey-Bass.
- Salem, P. (2008). The seven communication reasons organizations do not change. *Corporate Communications*, *13*, 333-348.
- Seibold, D. R., & Shea, B. C. (2001). Participation and decision making. In F. M. Jablin & L. L. Putnam (Eds.), *The new handbook of organizational communication: Advances in theory, research, and methods* (pp. 664-703). Thousand Oaks, CA: Sage Publications.
- Shirley, R. C. (1988). Strategic planning: An overview. New Directions for Higher Education, 64, 5-14.
- U.S. Department of Education. (2006). *A test of leadership: Charting the future of higher education*. Retrieved from ERIC database. (ED493504).
- Wagner, J. A. (1994). Participation's effect on performance and satisfaction: A reconsideration of research evidence. *Academy of Management Review*, 19(2), 312-330.
- Weick, K. E. (1995). Sensemaking in organizations. Thousand Oaks, CA: Sage Publications
- Willson, R. (2003). Planning theory in our own backyard: Communication action in academic governance. *Journal of Planning Education and Research*, 22, 297-307.
- Willson, R. (2006). The dynamics of organizational culture and academic planning. *Planning for Higher Education*, 34(3), 5-17.
- Willson, R. (2010, September 10). Why teaching is not priority no. 1. The Chronicle of Higher Education, 57(3), A1; A6-7.
- Williams, L. S. (2008). The mission statement: A corporate reporting tool with a past, present and future. *Journal of Business Communication*, 45, 94-119. doi:10.1177/0021943607313989
- Wood, J. (1999). Establishing internal communication channels that work. Journal of Higher Education Policy and Management, 21, 135-149.
- Young, M. B., & Post, J. E. (1993). Managing to communicate, communicating to manage: How leading companies communicate with employees. *Organizational Dynamics*, 22, 31-43.