

WHAT I LEARNED ABOUT LEADERSHIP: REFLECTIONS OF AN ENGINEERING EDUCATOR

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OUTLINE

- I. Introduction**
- II. Definitions of leader and leadership**
- III. Two leadership components**
- IV. Personal leadership qualities**
- V. Organization leadership**
- VI. Quiz questions**
- VII. Conclusion**
- VIII. Recommended reading**

I. Introduction

- **Why give a nontechnical talk in an engineering department?**

Three Prominent Ole Miss Engineering Graduates

- **William Parsons, former Director of NASA's John F Kennedy Space Center.**
- **John Prados, former President of ABET (Accreditation Board for Engineering and Technology)**
- **Paul W. Murrill, , former Chancellor of LouisianaState University**

I. Introduction (continued)

- Why leadership in an engineering education?

“An engineer is hired for his or her technical skills, fired for poor people skills, and promoted for leadership skills” (Russell and Yao 1999)

Technical Ability x Leadership = Positive Impact

I. Introduction (continued)

- **Leadership course at The University of Mississippi (Ole Miss)**
 - A. Students are required to attend weekly invited lectures by engineering alumnus in leadership positions as well as in leaders in other professions such as the Chancellor of the University. Students are required to write a report on three of the invited lectures**
 - B. Students are required to study two books on leadership
Steven B. Sample, “Contrarians’s guide to leadership”
John C. Maxwell, “Developing the leader within you”**
 - C. Tests are given on the two leadership books.**

Examples of Other Leadership Programs in Engineering Education

U of Southern California : Leadership course given by University President Steven Sample (Electrical Engineer) and Warren Bennis (Leadership Guru)

MIT : Gordon Engineering Leadership Program

U of Toronto: Engineering LOT (leaders of tomorrow) Program

II. Definitions of Leader and Leadership

Although there are a variety of versions, they are fundamentally the same.

- **Leader – Someone who has identifiable followers over whom he exercises power and authority through his actions and decisions**
- **Leadership – The ability to have a clear vision of what is to be accomplished and to inspire and influence others to work toward the realization of that vision.**

Managers versus Leaders

One often hears the following quotes about the difference between managers and leaders:

- **“Managers do things right, while leaders do the right things.” (Warren Bennis)**
- **“A manager is skilled at making sure people can climb up a ladder successfully. A leader makes sure the ladder is leaning up against the right wall.” (Stephen Covey)**

What is the right thing/right wall?

- **Confucius/Plato –stressed the good side of human nature**

- **Machiavelli –recognized the reality of human nature**

- **Leadership is an art and not a science. Different leaders have their own views and approaches. Nevertheless, there seems to be common agreement on the essential elements that make a leader. We will discuss some of these in this lecture.**
- **Bad news: Liberal arts education prepares one better for leadership than an engineering education.**
- **Good news: We engineers can pick up liberal arts education on your own.**

III. Two Components of Leadership

- A. Personal Leadership – Individual qualities brought to or developed on the job**

- B. Organization Leadership – Leading an organization to success**

IV. Personal Leadership Qualities

A. Hard knowledge/skills

- Knowledge in your chosen field
- Communication skills (both written and spoken)
- Liberal arts education

B. Soft Skills

- Personal vision/goals
- Integrity
- Positive attitude
- Emotional intelligence
 1. Self awareness, Self -management
 2. Social awareness, relationship management

V. Organization Leadership

- **Build a strong team**
- **Articulate a shared vision, plan and prioritize**
- **Communicate and listen**
- **Lead by example**
- **Develop leaders**
- **Seize opportunities and take risks**
- **Work in teams**
- **Persevere**
- **Evaluate performance**
- **Get along with your boss but know what hill you are willing to die on**

EXAMPLES AND DISCUSSIONS

IV. Personal Leadership Qualities

A. Hard knowledge/skills

- **Knowledge in your chosen field**

- “The mind, once stretched by a new idea, never returns to its original dimensions.” (Ralph Waldo Emerson)

- **Communication skills (both written and spoken)**

- “Write to be understood, speak to be heard, read to grow” (Lawrence Clark Powell, author)

- “All great speakers were bad speakers first.”
(Ralph Waldon Emerson)

IV. Personal Leadership Qualities

A. Hard knowledge/skills (continued)

- **Liberal arts education**

- “You are what you read” (Steven Sample)
- “The more you learn, the more you earn, the more you live” (Don Fruge, Ole Miss law professor)
- “Read and grow until you go” (Mike Wallace/Kai Fong Lee)

IV. Personal Leadership Qualities

B. Soft Skills

- **Personal vision/goals**
 - “Not all dreamers are winners, but all winners are dreamers. You need a dream, if you are going to succeed in anything you do.” (Mark Gorman, pastor)
 - “You can seize only what you can see.” (John Maxwell)

IV. Personal Leadership Qualities

- **Integrity**
 - “When I have integrity, my words and my deeds match up.” (John Maxwell)
 - “Integrity builds trust and inspires confidence in the leader.” (John Maxwell)

- **Positive attitude**

-“The greatest discovery of my generation is that human beings can alter their lives by altering their attitude of mind.” (William James - psychologist)

- “If you want the rainbow, you got to put up with the rain.” (Dolly Parton – singer/song writer)

- **Emotional intelligence**

1. **Self-Competence 知己**

- Self-awareness, self-management

2. **Social-Competence 知彼**

- Social-awareness, relationship management

知己知彼, 百戰百勝 (孫子兵法)

Daniel Goleman, “What Makes a Leader”, Harvard Business Review, November-December 1998, pp. 93-102.

- **Emotional intelligence (continued)**

People who are socially competent tend to have a sense of humor:

A leader's ability to comfortably tell jokes and humorous anecdotes is important because it tends to make him warm and accessible (even if he is not).

A sense of humor helps us to get through dull times, cope with difficult times, enjoy the good times, and manage the scary times.

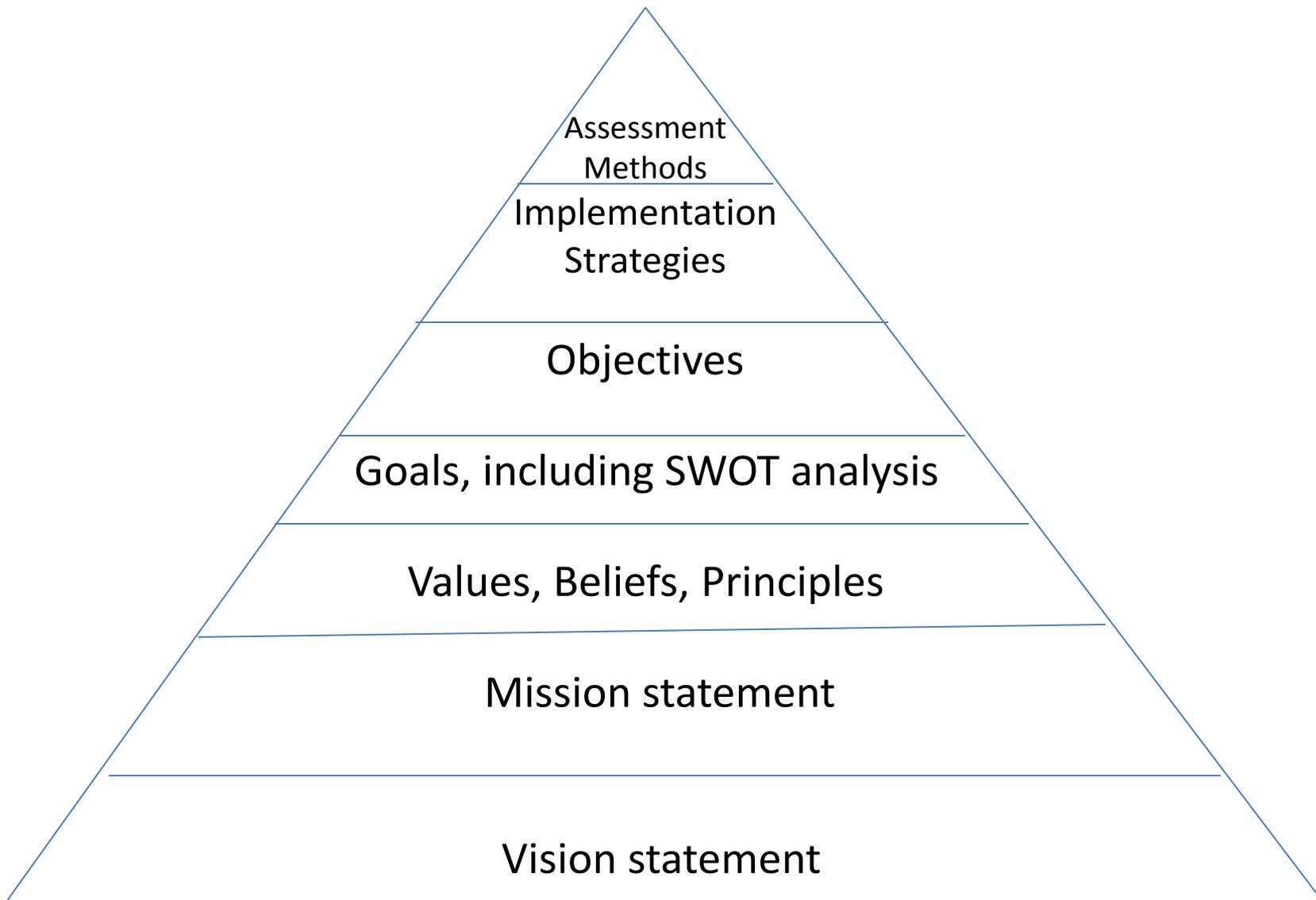
V. Organization Leadership

- **Build a strong team**
 - “The first method for estimating the intelligence of a leader is to look at the men he has around him.” (Niccolo Machiavelli)

V. Organization Leadership

- **Articulate a shared vision, Plan and prioritize**
 - “All leaders have a vision of what they must accomplish. They know where they are going, and they are able to persuade others to follow.” (John Maxwell)
 - “If you do not know where you are going, every road will get you nowhere.” (Henry Kissinger)
 - “Put first things first – The main thing is to keep the main thing the main thing.” (Jim Barksdale, CEO of Netscape)

A Typical Strategic Plan



Vision and Mission

Vision Statement: Speaks to the destination, the desired future, often 10-20 year horizon.
(WHAT)

Mission Statement: Describes the path to get there. (HOW)



EE Department, City University of Hong Kong

Vision

The Department of Electronic Engineering aspires to become a leading department of its kind in the world.

Mission

The Department of Electronic Engineering strives to continuously improve the quality of the teaching and learning process, applied research and service to the community. In so doing, the Department commits itself to:

- Providing academic leadership in educating professional engineers of the highest caliber;
- Preparing students with broad-based education for engaging in future engineering professions, pursuing advanced studies, and conducting applied research at high standards of professionalism;
- Developing students' leadership skills, communication and creative thinking skills, global perspective, and commitment to continuous self-improvement;
- Engaging in applied research and transferring cutting-edge technologies to both manufacturing and service industries, especially in Hong Kong and the Pan Pearl River Delta Region.

More Examples of Vision Statements

Amazon: "Our vision is to be earth's most customer centric company; to build a place where people can come to find and discover anything they might want to buy online"

World Disney Company: "To make people happy."

Mayo Clinic: "Mayo Clinic will provide an unparalleled experience as the most trusted partner for health care.."

V. Organization Leadership

• Communicate/Listen

- “The leader must be able to share knowledge and ideas to transmit a sense of urgency and enthusiasm to others. If a leader can’t get a message across clearly and motivate others to act in it, then having a message doesn’t even matter.” (Gilbert Amelio, CEO, National Semiconductor)
- “There is a reason why God gave us two ears and one mouth. We should listen more than we talk.” (unknown)
- “The ear of the leader must ring with the voices of the people.” (Woodrow Wilson)
- “Smart leaders believe only half of what they hear. They also know which half to believe.” (John Maxwell)

V. Organization Leadership

- **Lead by example**
 - “Setting an example is not the main means of influencing others, it is the only means.” (A. Einstein)
- **Develop leaders**
 - It is not just how many followers one has; it is also how many leaders one has created among them. The more leadership in the ranks, the more effective is one’s own.

V. Organization Leadership

- **Seize opportunities and take risks**
 - “A ship is always safe at the shore – but that is NOT what it is built for.” (A. Einstein)
 - “People who play it safe continually miss opportunities and seldom make progress.” (John Maxwell)

V. Organization Leadership

- **Team work**

- “No man will make a great leader who wants to do it all himself.” (Andrew Carnegie-industrialist)

- **Persevere**

- “It does not matter how slowly you go as long as you do not stop.” (Confucius)
- “Many of life’s failures are people who did not realize how close they were to success when they gave up.” (Thomas Edison)



The Right TIME

An INSTITUTIONAL COMMITMENT to the SCHOOL of ENGINEERING

With a clear vision to be recognized as one of the best engineering schools in the South, the time has come to build on the school's national reputation for graduating well-rounded engineers with a penchant for leadership.

The campaign is the first major undertaking in the 102-year history of the school to raise significant private funds on behalf of engineering. It has the full support of the University's senior leadership.



Gloria Kellum, Carolyn Staton, Robert Khayat

"From the earliest days of the University, the engineering program has been the strong, silent partner in Ole Miss academics. We are committed to the proposition that it becomes even stronger and no longer silent. It's time for our School of Engineering to be recognized as one of the South's premier schools." —CHANCELLOR ROBERT KHAYAT

"With the success of the Campaign for Engineering, the school's stature will be increased, its physical facilities enhanced, and the quality of its programs strengthened." —PROVOST AND VICE CHANCELLOR FOR ACADEMIC AFFAIRS CAROLYN STATON

"The School of Engineering possesses a gifted faculty, quality students, and renowned alumni. The final ingredient to achieve preeminence is generous private support. All the elements are in place." —VICE CHANCELLOR FOR UNIVERSITY RELATIONS GLORIA KELLUM

"For more than a century, our graduates have made significant contributions to the well-being of Mississippi and the nation as leaders in their profession. We are committed to continue the heritage of educating engineering leaders, and to step up to the next level of excellence in teaching, research, and service." —DEAN KAI-FONG LEE

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V. Organization Leadership

- **Get along with your boss but know which hill you are willing to die on**

V. Organization Leadership

- **Evaluate performance**

- A complete and frank evaluation at least once a year.

Keep in mind:

- Everyone wants to feel worthwhile.
- Encouragement brings out the best in people.
- The 10 commandments of confrontation

The Ten Commandments of Confrontation [2]

- 1. Do it privately, not publicly.**
- 2. Do it as soon as possible. That is more natural than waiting a long time.**
- 3. Speak to one issue at a time. Don't overload the person with a long list of issues.**
- 4. Once you've made a point don't keep repeating it.**
- 5. Deal only with actions the person can change. If you ask the person to do something he or she is unable to do, frustration builds in your relationship.**

The Ten Commandments of Confrontation (continued)

- 6. Avoid sarcasm. Sarcasm signals that you are angry at people, not at their actions, and may cause them to resent you.**
- 7. Avoid words like always and never. They usually detract from accuracy and make people defensive.**
- 8. Present criticisms as suggestions or question if possible.**
- 9. Don't apologize for the confrontational meeting. Doing so detracts from it and may indicate you are not sure you had the right to say what you did.**
- 10. Don't forget the compliments. Use what I call the "sandwich" in these types of meetings: Complement --- Confront ---- Compliment**

VI. Quiz Questions

1. People's minds are changed more through arguments than through observation. [Maxwell, Chapter 7]
(a) True (b) False
2. When confronting people, you should keep repeating a point you have made to make sure the person you are confronting gets it. [Maxwell, Chapter 7]
(a) True (b) False
3. If you are the CEO of a company and your background is in engineering, you should always follow the recommendation of an expert in financial affairs when a decision on the budget of your company has to be made. [Sample, Chapter 3]
(a) True (b) False

- 4. The most important inventions in a particular engineering field are often made by people who have practiced in the field for long periods of time. [Sample, Chapter 1]**
(a) True (b) False
- 5. Human nature has changed considerably from the days when Niccolo Machiavelli published “The Prince” in 1513. [Sample, Chapter 4]**
(a) True (b) False
- 6. The most powerful form of communication between the leader and his followers is the written word rather than the spoken word, as the spoken word does not leave any trail of record. [Sample, Chapter 9]**
(a) True (b) False

7. A leader should never make a decision today that can reasonably be put off to tomorrow. [Sample, Chapter 5]
(a) True (b) False
8. It is best for a leader to be both feared and loved, but if he must make an exclusive choice between the two, he should prefer to be feared.
[Sample, Chapter 6]
(a) True (b) False
9. If you are a dean and has decided to fire a department chair, it is better to let your administrative assistant inform the chair to avoid an emotional confrontation. [Sample, Chapter 8]
(a) True (b) False
10. Given that the word “Machiavellian” carries negative connotation, why is the book “The Prince”, published by Niccolo Machiavelli in 1513, remains a required reading in many leadership courses given in Universities? Why is the book controversial? [Sample, Chapter 6]

VII. Concluding Remarks

A poem about vision

(American poet Edwin Markham):

(Chinese Translation-
shown here first time)

**“Ah, great it is to believe the dream,
As we stand in youth by the starry stream,
But a greater thing is to live life through,
And say at the end, the dream came true.”**

少壯喜尋夢，
觀星溪水濱。
老年回首望，
終覺夢成真。

May you all have a dream and that your dream will come true.

IX. Recommended Reading

- [1] Steven B. Sample, “The Contrarian’s Guide to Leadership”.**
- [2] John C. Maxwell, “Developing the Leader Within You”**
- [3] Daniel Goleman, “What Makes a Leader”, Harvard Business Review, November-December 1998, pp. 93-102.**