

## **Assessing Graduate Student Understanding of Leadership Compared to Management**

**Dimitra Michalaka and David Greenburg**

*The Citadel School of Engineering*

### **Abstract**

Many contemporary engineering problems are considered to be multi-disciplinary in nature and require both technical and soft skills in problem formulation and solution. While traditional education curriculums focused mostly on teaching technical skills, nowadays, it is evident that engineering curriculums should also teach students communication, leadership, adaptability, and problem solving skills. Research shows that industry considers soft skills to be critical in fostering employee retention, improving leadership, and building a meaningful culture. An important enabler of soft skills development is a clear understanding of the similarities and differences between leadership and management. The Department of Engineering Leadership and Program Management at The Citadel designed and implemented a graduate degree in project management which includes two leadership required courses taken in sequence. The first course deals with technical project manager leadership development and the second course concentrates on applied leadership concepts. The two courses examine Leadership as a skill of getting the work done through and with others and Management as a discipline of getting the work done through and with others. Clear understanding of the differences and similarities between leadership and management is critical. To test student understanding a pre and post instruction survey was administered to graduate students to assess their understanding and the effectiveness of the two course sequence. Results and analysis of the survey results are presented and discussed which provide useful information in improving the graduate curriculum.

### **Keywords**

Leadership Concepts, Applied Leadership, Management, Engineering.

## Introduction

By focusing on tools, techniques and processes project management inadvertently cultivates many of its managers more towards being managers than leaders. Management and leadership are two terms often erroneously perceived as interchangeable. In reality these two concepts are very different in nature, and one could argue that leadership is more important than management or vice versa. However, if you are caring for a team or attempting to successfully accomplish a goal having both of these foundations is very important. A technical project manager must not only be a good manager, but also an effective leader in order to be successful. How is leadership different from management? This is a difficult conceptual question for students to answer or to describe in words based on some intuitive understanding. It can be argued that while leadership and management are interrelated and often perform similar functions and achieve the same goals they are really different skills<sup>1</sup>. Leadership is often viewed as an act of managing that is focused on the long term future of an organization and management is focused on achieving the immediate and short term. It is hard to objectively state if being a manager is bad and being a leader is better although there is a tendency in literature to see leadership as separate from management but also superior<sup>2</sup>.

## A Discussion of Management

Webster's dictionary describes "manage" as to handle or direct with a degree of skill: such as to exercise executive, administrative, and supervisory direction. This definition describes a rather rigid role where managers are concerned with maintaining the status quo and ensuring the organization is functioning properly.

In the book *Leadership A Communication Perspective*, Johnson and Hackman<sup>3</sup> discuss how the management process involves planning and budgeting and focusing on schedule, specific details, risk analysis, and resource allocation. Managers focus on mobilizing people to achieve the plan. Management execution focuses on controlling and problem solving in order to produce orderly results. This focus can cause the manager to seem removed from an emotional connection to the team, although the manager can still have strong loyalty in, and concern for, the organization.

Handling of information makes up a large part of what managers do, and consists of collecting, monitoring, and disseminating. Monitoring and information sit hand in hand. Through monitoring a manager learns and gathers information that can be disseminated to various stakeholders when appropriate. An important managerial function is being able to discern what information is viable and what is not, and who else needs to know this information<sup>2</sup>.

Interpersonal roles are important in that the manager needs to keep the team working successfully under his or her supervision. Often this means that the manager must take a human approach to working with employees, a manager needs to demonstrate social powers to keep the culture of the work force functioning.

The amount of "power" a manager is perceived to hold over employees plays an important role in their ability to influence employees<sup>2</sup>. There are a variety of different types of power such as Reward Power, Coercive Power, Legitimate Power, Referent Power, and Expert Power. Reward

Power is the perception that the manager can give rewards to the employees for good performance. Coercive Power is the opposite of Reward and it refers to the ability of a manager to punish an employee for poor performance or not meeting expectations. Legitimate Power is based on the belief that the manager has the right to tell the employee what to do and is associated with the positional authority held by the manager. Referent Power is the power a manager has over the employee because the employee feels connected to them through admiration or respect. Finally there is Expert Power, which is based on the manager's superior knowledge and expertise allowing them to have power over an employee.

### **A Discussion of Leadership**

Leadership is defined as the action of influencing a group of people to achieve stated goals and objectives. Leadership is not a simple concept and many students find it difficult to define who a leader is or how a leader functions. It is easy to argue that a leader is simply someone who holds a high position within an organization and plays a role in guiding employees forward to achieve profits for the organization<sup>4</sup>. In technical project management, this is someone who is guiding the project towards excellence while staying on schedule and on budget.

Simplistically, leadership comes down to how the leader as a person serves the business needs in order for the organization to thrive. Common leadership styles include authoritative, democratic, laissez faire, and visionary. Authoritative leadership consists of leading from the top down. This style uses positional authority and the employees below follow the directives, decisions, and wishes of this leader who is focused on achieving specified goals and objectives following a clearly stated vision<sup>2</sup>. It can be seen as somewhat manipulative, but it is meant for the greater good of the group. This style uses the leader's influence on others to make decisions that will accomplish the goals of the group. The democratic leader solicits input and ideas from the followers and seeks to include and empower employees and get them excited to move in the desired direction. Laissez faire leaders employ a hands off approach and trust the employees to be capable of achieving organizational goals and objects with only minimal guidance and leadership. Visionary leadership aims to get employees on board with a goal by using inspiration, attempting to show employees how they are important to the goal<sup>5</sup>.

Without a firm understanding of the differences between leadership and management organizations will continue to ask for leaders but need managers and vis versa. A great deal has been written on the differences between leadership and management which shows there are striking parallels between the two. It may be that organizations need leaders with managerial skills and managers with leadership skills.

### **The Importance of Both Leadership and Management for Career Development**

Leadership and management are two important drivers of organizational performance, but their effective application does not come without a clear understanding of both which are needed to develop and maintain a sustainable competitive advantage. The relationship between leadership and management are postulated to have a positive impact on innovation and performance. It has been argued that leadership influences knowledge management, which subsequently impacts innovation. Although leadership is important, it has been argued that management also has a

direct influence on innovation, which implies that leadership, might indirectly impact innovation, potentially through management<sup>4</sup>.

Effective management skills are needed to foster innovation by organizing, designing, monitoring and controlling organizational activities. Leadership complements management by incentivizing creativity. Through this, organizations eventually become developing grounds for innovation<sup>6</sup>. By applying in concert effective leadership and management, employees begin to develop a sense of commitment and satisfaction toward their employing organization, which stimulates creativity and performance. Given the importance, in this research, it is argued that a solid understanding of leadership and management principles are important dimensions needed for innovation and performance. Considering that leaders and managers are vitally important to instilling a value-system within an organization, fostering a clear understanding of both is needed to develop a culture that can stimulate collaboration, commitment and satisfaction among the workforce<sup>7</sup>.

### **Student Perceptions of the Characteristics and Differences of Leaders vs Managers**

#### *Survey*

Students in The Citadel's Project Management Master's program were first asked which leadership and management courses they have already taken or are currently enrolled in to understand how much formal knowledge background they have on the topic. Then, students had to list the characteristics of leaders and managers in a tabular format and also state their opinions on the differences between leaders and managers. Students were also asked to say if they strongly agreed or disagreed on the fact that the courses, they have taken at the college, shaped their opinion of leaders vs. managers. Lastly, they had to think and record their perceptions of leaders and managers before taking any course on the subject. Other comments from the students were also welcome at the end of the survey. The survey is presented in the Appendix.

#### *Results*

Twenty-four students responded to the survey, of which all had taken 2 to 9 leadership and management related courses. Students had taken on average 4.3 courses on leadership and management.

The characteristics of leaders that students recorded are listed in Table 1. The percentages in the second column represent the percent of students that listed that characteristic. As seen in Table 1, the leader characteristics reported by the students show that they have a good understanding on what the ideal leaders should look like. Other leader characteristics that were mentioned by the students include, driven, trustworthy, responsible, humble but confident, leads by example, develops relationships, builds trust, questions the status quo, intelligent, empowering, passionate, innovate thinker, forward thinker, has empathy, has authority, seeks consensus, has strong morals, dynamic, transforms, and seeks changes.

Table 1: Leader characteristics

<b>Leader characteristics</b>	<b>%</b>
Inspiring/Motivating	87.50
Visionary	37.50
Puts people first	37.50
Strategic/long term thinking	33.33
Good communicator/listener	29.17
Charismatic	25.00
Doing the right things	25.00
Influential	20.83
Mentor	12.50

The characteristics of managers based on the responses of the students are illustrated in Table 2. In this case too, the percentages in the second column represent the percent of students that listed that characteristic.

Table 2: Manager characteristics

<b>Manager characteristics</b>	<b>%</b>
Maintains the status quo	50.00
Task/goal Oriented/Good with tasks	41.67
Organized	25.00
Doing things right	20.83
Authoritarian	20.83
Short term focused	20.83
Delegator	12.50
Responsible	8.33

As seen in Table 2, students related managers with maintaining the status quo, accomplishing and delegating tasks, and thinking short term. However, participant responses varied much more than in the case of describing leaders. Managers were described also as appointed, positional, planners, caring about their own task, following rules, having technical abilities, focused on staffing, having analytic mindset, having no personality, steady, dealing with budgets, detail oriented, administrative, and may or may not be successful.

When students were asked to describe the differences between leaders and managers, they used the same wording of the previous question to form sentences. In general terms, they seemed to praise the leaders but not so much the managers.

The next part of the survey examined if students felt they had shaped their opinion on leaders and managers based on the courses they had taken and what their opinion was before taking the courses. Figure 1 shows the answers to the following:

“The courses I have taken in The Citadel’s Department of Engineering Leadership and Program Management have shaped my opinion of leaders vs managers.”

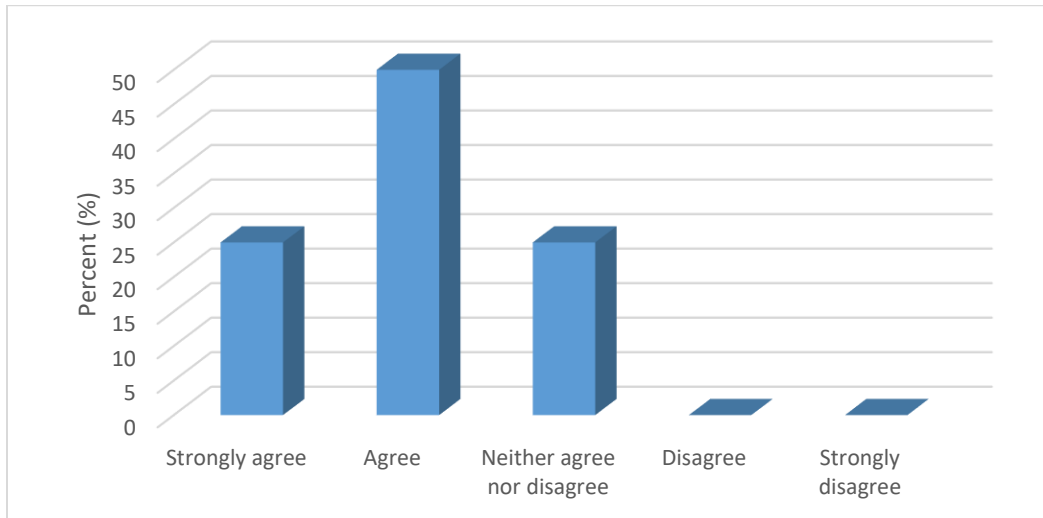


Figure 1: Student Perceptions of course influence on their opinion of leaders and managers

Seventy-five percent of the students strongly agreed or agreed to have changed their opinions on leaders and managers due to courses they had taken on the topic. The remaining 25% neither agreed nor disagreed, meaning their opinions did not change from taking courses.

From the students who responded what their perceptions were before taking any course, 67% said that initially they thought that leaders and managers are equivalent terms and can be used interchangeably. Twenty percent thought that leaders are people with high authority while that does not hold true for the managers since they always have to report to someone else in a higher position than theirs. The other 13% believed that leaders are individuals that work with people and equipment and people gravitate towards. An interesting fact was that some students mentioned that the graduate courses helped them to recognize the differences and shortcomings of leaders and managers. One student, more specifically, mentioned that after taking courses and realizing how the ideal managers and leaders should be, they decided to quit their job because they realized that the company head was performing so poorly.

## Conclusions

Comprehending the differences between leaders and managers is complicated. This paper examined graduate student understanding of leadership compared to management. Overall, graduate students stated that taking courses on leadership and management helped them form an opinion of the characteristics of the ideal leaders and managers. The survey showed that generally, student view leaders with more regard than managers. In reality, managers have to handle a variety of tasks and should possess variety of skills such as being able to plan, prepare budgets and schedules, analyze risk, allocate resources, manage execution of tasks and others. In

the future, more focus should be paid in conveying the characteristics of managers because students still seem to not have very positive perception of managers.

## References

1. Shamas-ur-Rehman Toor and George Ofori, Leadership and Management in Engineering Vol. 8, Issue 2 (April 2008), ASCE. Retrieved from: [https://doi-org.ezproxy.libproxy.db.erau.edu/10.1061/\(ASCE\)1532-6748\(2008\)8:2\(61\)](https://doi-org.ezproxy.libproxy.db.erau.edu/10.1061/(ASCE)1532-6748(2008)8:2(61))
2. Chase, N. (2017). *Leadership versus management and needing both to be a successful stage manager* (Order No. 10285628). Available from ProQuest Dissertations & Theses Global. (1978085463). Retrieved from <http://ezproxy.libproxy.db.erau.edu/login?url=https://search-proquest-com.ezproxy.libproxy.db.erau.edu/docview/1978085463?accountid=27203>
3. Johnson, J. E., & Hackman, M. Z. (2018). *Leadership a communications perspective*. 7<sup>th</sup> Ed. Waveland Press, Inc. Long Grove, IL.
4. Overall, J. (2015). A conceptual framework of innovation and performance: The importance of leadership, relationship quality, and knowledge management. *Academy of Entrepreneurship Journal*, 21(2), 41-54. Retrieved from <http://ezproxy.libproxy.db.erau.edu/login?url=https://search-proquest-com.ezproxy.libproxy.db.erau.edu/docview/1760919570?accountid=27203>
5. Berson, Y., & Linton, J. D. (2005). An examination of the relationships between leadership style, quality, and employee satisfaction in R&D versus administrative environments. *R&D Management*, 35(1), 51–60. <https://doi-org.ezproxy.libproxy.db.erau.edu/10.1111/j.1467-9310.2005.00371.x>
6. Maria Stock, R., Zacharias, N. A., & Schnellbaecher, A. (2017). How Do Strategy and Leadership Styles Jointly Affect Co-development and Its Innovation Outcomes? *Journal of Product Innovation Management*, 34(2), 201–222. Retrieved from: <https://doi-org.ezproxy.libproxy.db.erau.edu/10.1111/jpim.12332>
7. Pretorius, S., Steyn, H., & Bond-Barnard, T. (2017). Exploring Project-Related Factors That Influence Leadership Styles And Their Effect On Project Performance: A Conceptual Framework. *South African Journal of Industrial Engineering*, 28(4), 95-108. Retrieved from: doi:<http://dx.doi.org.ezproxy.libproxy.db.erau.edu/10.7166/28-4-1778>

## Dimitra Michalaka

Dimitra Michalaka is an Associate Professor at the department of civil and environmental engineering at The Citadel. Dimitra received her undergraduate diploma in civil engineering from National Technical University of Athens, after which she entered into the transportation engineering graduate program at University of Florida. Graduated with a Master of Science in 2009 and with a Ph.D. in 2012. Dimitra’s research is primarily focused on traffic operations, congestion pricing, traffic simulation, and engineering education. Dimitra is a registered Professional Engineering in the state of South Carolina.

## David Greenburg

David Greenburg is an Associate Professor and Program Director for the Department of Engineering Leadership and Program Management (ELPM) in the School of Engineering (SOE) at The Citadel. He served over 20 years of active military service in the United States Marine

Corps in a variety of command and staff and leadership positions. Upon completion of active military service, he held executive leadership positions in industry until he joined the faculty at The Citadel. His research interests include modeling project networks, technical decision making and leadership. He is a certified Project Management Professional (PMP).



## Appendix - Survey

### Assessing Graduate Student Understanding of Leadership Compared to Management Survey

1. Which leadership and management courses have you taken or currently enrolled? Check all the ones applicable.

- Course 1: Overview of Technical Project Management
- Course 2: Applications of Quality Management
- Course 3: Overview of Technical Program Management
- Course 4: Project Manager Leadership Development
- Course 5: Applied Leadership Concepts

Other? \_\_\_\_\_

2. In your opinion, what are some *characteristics* of Leaders and Managers? Please record your responses below.

Leaders	Managers

3. In your opinion, what are some *differences between* Leaders and Managers? Please record your responses below.

Leaders	Managers

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4. Please respond to the statement below.

The courses I have taken at *teaching college* Department of Engineering Leadership and Program Management have shaped my opinion of leaders vs managers.

- a. Strongly Agree
- b. Agree
- c. Neither agree nor disagree
- d. Disagree
- e. Strong Disagree

5. If your answer to the question above was Strongly Agree or Agree, please state what your perception of leaders vs manager was before taking any courses on the subject.

Leaders	Managers

6. Other comments?

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