Leadership 102 – Your First Team – The Research Group

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Abstract

Graduating with a Doctorate and conducting research as a student does not prepare the average faculty member for team leadership. At most universities that require faculty to conduct research, secure funding and produce scholarly works, it is imperative that the faculty member have a research team and that the team produce. To develop a team and to make that team produce requires a certain amount of skill: leadership skill. Leadership of people is an acquired skill and differs vastly from management of things, although many feel that people can be managed. From selecting the right team members – to giving them the correct assignments, it is the leader who must carefully weigh the skills of the team member and the proper position for those skills. Time management becomes an issue early on and must be watched or time will become the enemy of the team. The leader must set priorities and must be clearly visible in taking the team to the next level. Effective and efficient teams win and so do their leaders. This paper will address the methods for building a team and the way to take a new group of researchers and make them operate at high speed.

Introduction

As an administrator, it is frustrating watching a new faculty member struggle with the process of preparing for tenure. Worse than the frustration is the need to tell a promising young professor that tenure will not be awarded because of a failure to achieve the minimum standard in the area of scholarly works. Frequently this happens because they have not focused on the mission of the university, or have neglected to do the hard work of getting research completed and submitted to the journals and conferences that provide the scholarly outlet.

Much has been written about the transition to teaching, having a balanced perspective during the tenure years and general tips about achieving tenure.¹⁻³ Productivity is discussed with regard to classroom efficiency and dealing with students.⁴ Leadership and management discussions focus on the administrators and not on the needs of new faculty.⁵ New faculty, especially at the research university must develop skills that make them efficient in every facet of their job as an Assistant Professor.

Often the focus of young professors is their teaching and service duties: both important but not counted heavily toward the tenure decision at some universities. It is important to teach well, after all, they are professors and a portion of their mission is to teach undergraduates. Being a good teacher, one ready to "perform" every few days and "perform" well is important to survival. Teaching is a function that must be efficient and accurate. It must be organized and

presented enthusiastically to garner the "acclaim" necessary to put teaching above the minimum line. Most new professors can do this if they know the subject, respect the students, stay current and follow simple rules in the classroom.

Service is also important to the professor in the tenure process. BUT, there is a caution here for all new professors: temper your participation in service activities. Service is expected, service is necessary and service is easy. Too many new professors take on a heavy load of service activities, make a name for themselves as tremendous members of the university community and then fall short in the important area of scholarly work. Do not lose sight of the end result – getting tenure.

With this said, the importance of a scholarly program is obviously critical in the tenure process. In the case of teaching schools, achieving tenure may mean a balance between teaching, service and professional development efforts. Here, personal management and self discipline are of great concern, with less of a leadership emphasis. In the case of a large, research university, achieving tenure includes not only personal management but also leadership of a research team. It is the synergy of the personal management and team leadership that must be developed to improve the probability of a successful tenure process in the latter case. Both personal management and leadership can be developed, although neither are taught or mentored in most universities. What are the downfalls and are there easily self-taught solutions? Are there similarities in both teaching and research situations?

Pitfalls in the tenure process

There are a lot of distractions, situations and attention issues that cause professors to not stay on task to tenure. The list below is mixed: some are distractions, some are situations and some are caused due to lack of attention – some fit more than one category. Some of the more important issues, such as teaching and proposal writing can be handled efficiently or inefficiently – thus their inclusion in this section. Each issue is followed by a brief explanation. Once the issues are on the table, possible solutions will be presented for streamlining the process. What does this have to do with building teams? Everything!

Time: There are 168 hours in a week. If you sleep 6 hours a night, if you commute 2 hours a day including parking and walking to the office, if you eat 2 hours a day, if you teach 3 hours a week, if you prepare for class 2 hours for each hour of class, if you have 5 hours of meetings a week, if you do 2 hours of email a day, if you talk on the phone for 1 hour a day, if you exercise for $\frac{1}{2}$ hours per day on the average, if you have 2 hours of office hours twice a week, if you meet with your graduate students 2 hours a week and you have three, if you are on two committees that meet 2 hours each week on the average, and if you talk to your colleagues 15 minutes a day, then you have 41 hours and 45 minutes left to use at your discretion. It sounds like a lot of time, but most people sleep more, relax more and attend to other things more than allowed in this example – so figure it out – time is the enemy.

E-Mail: This is a huge time sink that is often a distraction to every facet of the day. The email "bongs" and we answer. There is useless stuff there and it is read. There are messages from people we want to talk to and we respond, and there are business messages that we need to

Proceedings of the 2005 American Society for Engineering Education Annual Conference and Exposition Copyright © 2005, American Society for Engineering Education answer and we spend unbelievable amounts of time doing so. People want our time, students expect immediate answers, and after all, what else are you doing in your "spare" time? But quick answers are also what everyone thinks is the norm, sent in a micro second – means an answer should come as fast. Unfortunately, we often fall prey to this idea.

Phones: There are few calls that last less than 5 minutes and conference calls can last an hour or more unless accompanied by an agenda. Be careful with the phone, if you get comfortable, you can talk for 30 minutes and not realize that you have talked that long.

Family and personal relations: If there is a family that needs to be supported, taken to the doctor, or if there are games and practices, these things take a lot of time. This is good time and well invested, but must be "programmed to be included in the time spent each week. Know the schedule of important events, and don't be late. Family failures increase stress a great deal. For those without families there is the stress of relation building and the development of a support base of friends in a new environment. Here to there are time requirements that must be programmed into the daily schedule. Loneliness is a stressor and can be a tremendous burden to the successful tenure process.

Social events (official): These are few and far between, but social events are important for collegial contact and stress-free discussions with friends. Be careful, too many social functions waste lots of time.

Graduate students: Research graduate students are divided into two groups: those who get the job done and write the papers, and help get the publications to press; and those who require constant supervision, hours of rewrite and who never can get the papers done. Graduate students should be selected carefully to ensure that the time spent mentoring them is fruitful. If the faculty member needs to do all the work, then there is no reason to hire graduate students. This is important when selecting Teaching Assistants also – select those whom can help you grow, not those that you need to grow yourself.

Proposals: A must to chase to get the funds necessary to put together a research program. Select wisely those that are in your field, or team with a group where you can contribute but not be totally in charge. In charge means more work (see Grants below). Look for Career Awards and other developmental awards that require less technical, so that expertise can be ramped up. Proposals take time, have suspense dates and can be very discouraging when they don't work. Hook up with a mentor to get things started. Submit proposals for modest amounts, unless you have some unbelievable talents, or your university requires a fixed number of dollars per year. Finally, work with your thesis advisor when you can to continue a relationship that has worked.

Grants: Once you get money from a proposal there is a lot to do. Meetings to decide on direction and reports to keep the funding agency informed. You may need those graduate students so you need to select ones that can help you satisfy the grant criteria. There are expectations from funding agencies and they often have short lead times.

Papers: Depending on the requirements of the university, you may have to submit journal articles and/or technical papers while staying away from pedagogical work. Find out the

Proceedings of the 2005 American Society for Engineering Education Annual Conference and Exposition Copyright © 2005, American Society for Engineering Education requirements and then go for it. Sometimes, papers take years to get published and results are often necessary immediately. The graduate students you pick can help get the papers published, or they can require extensive rewrite when results are time sensitive and critical to the tenure process. Remember, the quality of the paper reflects on the professor, not on the graduate students.

Teaching: This is an important part of the job of all professors. The time estimates above are for one class but are the absolute minimums – most new professors spend more time preparing and time is used up quickly when there are multiple courses that have never been taught before. Get with a mentor or the person who taught the course last. Find notes if they are available – and teach efficiently to maximize classroom success and time for research and other scholarly work. Exams, labs, homework, grading, TA's, student questions and personal doubts all add to the time required to teach effectively. This area can eat into those 40 free hours very quickly.

Students: They can be a time sink with questions and demands as they take the easy path to success. Good teaching, well prepared exams, fair grading and office hours can help with student inquiries. A good reputation as an excellent teacher also helps. Make student contact to the point and move on.

Meetings: The timing of meetings is often random and can interrupt any plan. Meetings are often without an agenda and drag on for hours with no meaningful results. Avoid useless meetings as much as possible and when conducting them – have an agenda and a time limit. Keeping meetings on track is important to maintaining as much time flexibility as possible.

Service: These activities are easy to accomplish, take some time and can result in interaction with various constituencies. Too many faculty members get involved to the exclusion of other activities: specifically, scholarly work. Take on only those activities that are deemed appropriate by mentors and bosses.

Eating: Nourishment is important and many busy people skip meals to save time. Lack of nourishment can cause headaches and lack of liquids can cause other problems. Eating, cooking and clean-up represent a huge time sink: but a balanced diet is important to good health and high performance.

Exercise: This can be accomplished aggressively and with a small time penalty. Exercise is good for health, relieves stress and actually stimulates thought. Often exercise is skipped in favor of other activities or becomes a one or two hour time sink when games are played, such as tennis, racquetball or when swimming is the exercise of choice.

These are a few of the common pitfalls experienced by new faculty. The list, however, is not complete, but it does represent many of the most notable time sinks. It is important to realize that time is the most important resource that must be managed. Time can be managed through personal discipline and positive leadership of subordinates, peers and superiors. Each of us can influence the direction of the organization: good leaders, regardless of their position in the organization can have a positive impact on effective time utilization. A few simple principles can be applied to make the immediate team, research or personal, thrive.

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Becoming a leader

Peter Drucker and Warren Bennis said "Management is doing things right; leadership is doing the right things."⁶ John C. Maxwell⁷ states that "All great leaders have understood that their number one responsibility was for their own discipline and personal growth." Before the team can be effectively put together and run, the leader has a lot of preparation work to set the stage for success. Maxwell provides ten steps that lead to personal organization – an important step in the process of leading others.

- 1. "Set Your Priorities. Two things are difficult to get people to do. The first is to do things in order of importance, and the second is to *continue* doing things in order of importance." Most people are distracted by email, phone calls or some of the other things listed above. They select the "hottest" project to start on, and then go to the next project that comes their way. As leaders, they need to be more focused so that they can focus those that work for them. Often, hot projects get in the way of making assignments to those who need to work on longer term projects. Priorities need to be set, but there should never be a loss of vision for the team mission.
- 2. "Place Priorities on Your Calendar." One of my mentors once said, "A short stubby pencil is better than a long memory." Of course, that was said before technology provided electronic calendars and computers that can manage the day. Most people are visual learners and most like to "see" what is ahead of them. CPM and PERT analysis are used to guide large projects, Microsoft ProjectTM and OutlookTM, and all kinds of PDA's are available to organize time and show the schedule visually. There is also a common calendar that can be distributed to the team.
- 3. **"Allow a Little Time for the Unexpected."** A totally full schedule will become over full when some of the distractions listed above happen. Unexpected meetings, long conference calls, grading, student visits, last minute changes to proposals and meetings called by grant administrators cause schedules to fall apart. By scheduling some extra time each week, perhaps a free day, unexpected occurrence can be accommodated. There is nothing more frustrating for a team than a schedule that is overfull and changing.
- 4. **"Do Projects One at a Time."** Although there may be a lot of things to accomplish simultaneously, working on more than one project at a time is a problem. Too many activities at one time clutters the mind and reduces efficiency. Maxwell contends that four things will help with project organization:
 - a. **"Organize each project in a folder."** Some form of organization of proposals, teaching, grants and other projects is essential. Ring binders, folders, drawers, and project notebooks work well. Take them out to work on the project at hand and return them to their place when the next item is being considered. This also makes it easy to take one project off site to work on and allows notes and new work to be organized. Do the same on the computer, establish a folder for everything.
 - b. **"Itemize all that needs to be done."** Make lists of work to be accomplished. Make the groups on the list meaningful but don't put in every detail. Long lists cause stress as they are visual reminders of the extent of the work to be accomplished and can cause feelings of being overwhelmed.
 - c. **"Prioritize in order of importance."** This has been previously discussed. The order of importance must be carefully weighed against how soon things are due.

Sometimes things that are due are of less importance and can be resolved by submitting an interim update or by requesting an extension when more important projects take priority.

- d. **"Emphasize only one project at a time."** There is always a project that has the highest priority: work on that one. BUT, it is important to "finish" the project and not continue to refine it once it is in good shape. Often, too much time is taken making a proposal or paper perfect, only to find out that the reviewers still have criticisms. So, get the project done and move on to the next project.
- 5. **"Organize Your Workspace."** This is a difficult one to write since the authors work space appears to be disorganized. Organization is to the user, not the beholder. Just make sure that when workspace is used that there is sufficient organization to get the job done. When entering the workspace causes stress, it is time to take some of that free day to remove the clutter.
- 6. **"Work According to Your Temperament."** Early risers may work best in the morning and conversely for late risers. Burning the candle at both ends can be handled by some, but many people find this method a fast route to burnout. Realize that the team will work best if the leader fits his or her schedule to that of the team. Fitting the schedule this way, and prioritizing work so that the team is accomplishing tasks in parallel optimizes the number of simultaneous events and requires just one person having multiple tasks to manage.
- 7. "Use Your Driving Time for Light Work and Growth." It might be wise to add exercise and walking time to this. This is just time to think instead of using it to listen to music, this time can be used to think through problems. Get an inexpensive recording device and make verbal notes when something comes to mind. This is an excellent way to optimize otherwise wasted time and to have time to think without annoying interruptions.
- 8. **"Develop Systems That Work for You."** This goes back to the calendar, the computer or the PDA. Find a way to organize and then use it all the time.
- 9. "Always Have a Plan for those Minutes Between Meetings." A lot of time is wasted when there are meetings scheduled back-to-back. Make quick calls, map a problem, develop a list of things to do, write an assignment for a graduate student, or review a paper that is in the briefcase. All of these things seem natural but it is amazing how many people fail to use 30 minutes between meetings for productive purposes. Remember that networking is productive, but talking to friends may not be as useful unless you are working on projects together.
- 10. **"Focus on Results, Not the Activity."** This idea goes back to the original statement by Drucker and Bennis only in slightly different form: the "definition of efficiency (doing things right) versus effectiveness (doing the right thing)." Select those things that are supported by personal strengths and focus on them 80% of the time. Remember that polishing an apple makes it look nice but doesn't change its taste. If the result is a pretty apple, then polish away. If you are interested in the taste, just make sure it is clean and eat away.

Once you have developed self-discipline there is a chance that you can be a good team leader.

Important leadership decisions

There are two things that must be considered by every leader:

- 1. How is the team environment created?
- 2. How are the non-performers eliminated?

To answer to 1. is: leadership is about the people in the team and the care and direction of those team members. It is about setting up an environment where people are respected and team members grow. The leader must gain respect and must certainly believe in what the team is doing. The leader must accept responsibility and pass on praise. It is important to realize that people try to be successful: few try to fail. Team failures are often the fault of the leader, rather than the fault of the team members. So, good leaders strap the team on their back and get to work.

Just as the team cannot succeed without a good leader, the leader cannot succeed without good team members. The leader is responsible for selecting members of the team that support the vision, have the skills necessary and will fill in gaps that exist in the leader's skill set. When selecting research graduate students it is important that they have:

- 1. Excellent technical backgrounds,
- 2. An excellent work ethic.
- 3. Good communication skills, especially written.
- 4. Creativity.
- 5. A desire to make the team successful while improving individual resumes.
- 6. Organizational skills of their own.

Teaching assistants must have the same skill set and must be:

- 1. Good with students
- 2. Well versed in the material.

3. Capable of being a TA and progressing on their own research agenda with the professor. This is not a time to select people who are reclamation projects because there is no time to help them along. While people in this category will be eternally grateful, the team will suffer as others have to carry additional weight. Save the reclamation projects for the future. A strong set of team members, coupled with a strong leader will form the basis for success.

With the team in place the leader must now make the vision clear. The best professor that the author has ever witnessed had a strong sense of personal direction, a strong team, a vision for success, and high standards. With strong team members there must be a set of standards established against which to measure success. How many papers? Who is writing when? What research is done by each member? How the individuals fit into the team as a whole? Where the team should be in a month, 6 months, a year? With this established there is one more thing that the team needs – money.

The team will function much better if the leader has secured funding that supports the team members, and the leader. The primary jobs of the leader are to get money, assigned jobs to the research assistants and then make sure that progress is made. Meetings are held with an agenda. Discussions are open and free but with good direction. Planning and results are emphasized at

every opportunity so that progress can be measured against team goals. Pace is not important: meeting the prescribed goals is. The best teams get the job done and are effective.

Leaders should avoid what Maxwell calls the "Seven Deadly Sins." These are:

- 1. **"Trying to be liked rather than respected."** The leader must be respected by the team or the team is doomed. Being liked can turn to disrespect faster than respect turning to disrespect.
- 2. **"Not asking team members for advice or help."** If individual members don't feel like part of the team, then the team will falter. Including team members in discussions and seeking their input allows the team to grow, and growth equals production.
- 3. **"Thwarting personal talent by emphasizing rules rather than skills."** Utilizing and encouraging the talents of team members makes the team stronger. The performance of the leader is measured by the success of the team.
- 4. **"Not keeping criticism constructive."** Even non-performers need to be treated with respect, but the advice they get needs to be realistic.
- 5. **"Not developing a sense of responsibility in team members."** The team members are assigned tasks and the leader must ensure that they do what is expected. Not performing means the leader has to do more which could result in fewer proposals, less funding and a reduced chance for overall team success.
- 6. **"Treating everyone the same way."** All team members are not the same, some are more productive, some have different jobs it is the sum that makes the team successful. The leader must identify peer leaders and lean on them to provide assistance when the leader is not present.
- 7. **"Failing to keep people informed."** There is nothing worse than a lack of communication. Team members must know what is going right and what must be improved. Have the team members report on their actions this keeps them in the game and motivates them to do a better job since they are reporting on their own work.

The answer to number 2, concerning non-performers and their elimination is a delicate one. While remaining positive, the leader must tell them that their actions are hurting the team. The leader must offer solutions and in the case of an academic team, it may be necessary to "help" the non-performing team members to re-evaluate their goals. It is possible that they should consider the Masters rather than a Doctorate. These are difficult discussions to undertake but they are necessary. Trying to carry a person who cannot perform research or write can really become a time sink and will disrupt a high performing team. But, no matter what needs to be done, the rules above must be followed.

Back to the pitfalls

Every good leader faces challenges to the process of leadership. The pitfalls are the personal challenges that the leader must face before being able to lead the team. When the personal self-discipline is intact, the leader can focus on the development of a high performing team. Great leaders all have this capacity: great researchers and great teachers have this also.

Conclusion

The fundamentals of leadership apply to the research team. The leader, usually an Assistant Professor, needs to develop skills quickly to assist in their own professional development and to make the team work. People are the key to success and they need to be developed also. Without proper development the team will fail. Recalling the time sinks, the leader must guard against too many interruptions that will cause the leader or the team to fail.

REFERENCES

 Houston, B.L., "The Transition from Private Life to Academia: Advice for the New Instructor," Proceedings of the 2004 American Society for Engineering Education annual Conference and Exposition, Salt Lake City, UT.
Porter, J.R., Fink, R., Ochoa, J., "Balancing Tenure Requirements with Family Life: Perspectives from Three Tenure-Track Faculty Members," Proceedings of the 2001 American Society for Engineering Education annual Conference and Exposition, Albuquerque, NM.

3. Finley, D.R., "Tips for Greasing the Tenure Track 3," Proceedings of the 2001 American Society for Engineering Education annual Conference and Exposition, Albuquerque, NM.

4. Bruce, J.W., Bruce, L.M., "Maximizing Your Productivity as a Junior Faculty Member: Being Effective in the Classroom," Proceedings of the 2004 American Society for Engineering Education annual Conference and Exposition, Salt Lake City, UT.

5. Eydgahi, H.Y., Lahidji, B., "Leadership: Higher Education Administration," Proceedings of the 2004 American Society for Engineering Education annual Conference and Exposition, Salt Lake City, UT.

6. Covey, S.R., *The Seven Habits of Highly Effective People*, A Fireside Book, Simon& Shuster, New York, NY 1990.

7. Maxwell, J. C., Developing the Leader Within You, Thomas Nelson Publishers, Nashville, TN, 1993.

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