

Contents

- ✓ Chapter 1: Introduction to Technical Leadership
 - ✓ 1.1 Technical Leadership Fundamentals
 - ✓ 1.2 Building Trust and Credibility
 - ✓ 1.3 Risk-taking and Creativity
 - ✓ 1.4 Ethics, Professionalism and Time Management
- ✓ Chapter 2: Putting Leadership Principles into Practice
 - 2.1 Creating a Vision
 - 2.2 Team Building and Communication
 - 2.3 Conflict Management and Resolution
 - 2.4 Making Strategic Decisions
- Chapter 3: Ethical Leadership
 - 3.1 Towards an Ethical Culture
 - 3.2 Organisational and Individual requirements
 - 3.3 An Inclusive Leader



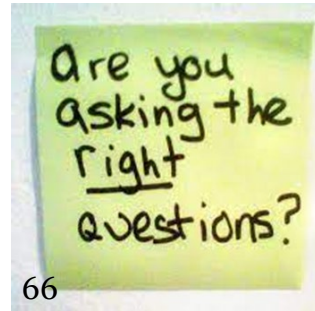
Chapter 2: Putting Leadership Principles into Practice

Reference: D. W. Hess, *Leadership by Engineers and Scientists*, Wiley, 2018

Leadership Through Questions

Quotes

- ✓ The best scientists, leaders and explorers ask questions and have a sense of wonder. They have curiosity - *Sylvia Earle*
- ✓ I think that the most important thing about our education was that it taught us to question even those things we thought we knew – *Thabo Mbeki*



Asking Questions

- ✓ **Effective leaders** are masters of **asking great questions**
- ✓ Good questions **energise people**, and a **questioning culture** can energise an entire organisation:
 - ✓ It helps everyone understand that questions are expected to become a **primary mode of communication**;
 - ✓ People engage, complex problems are solved, creativity is increased, and the whole organisation learns faster and better.
- ✓ Questions are **central to getting the best ideas** and the best contributions from team members and enable everyone to participate fully and really do more.

Leaders today need to **revisit** an overlooked skill: asking questions

Questioning is an essential leadership skill for developing the leaders that we need in the future

Leadership Through Questions

Asking Questions

- ✓ To be effective as technical leaders, engineers **must ask important questions** when taking risks, making decisions, setting goals, and dealing with conflict.
- ✓ Leaders must engage team members, to take advantage of their collective wisdom and experience, by asking questions that are not intimidating and delivering them in a nonthreatening tone.
- ✓ Team members generally respond positively to such approaches since they feel that they are part of the decisions made, are being engaged, and that their opinions or ideas are valued.
- ✓ **By asking open-ended questions**, a leader indicates that he/she seeks input and suggestions and shows that he/she trusts and has confidence in team members.
- ✓ **Active listening is an important component of a questioning culture**, since the leaders must demonstrate their interest and confidence in team members.
 - Such efforts build confidence, motivation, and initiative in employees



The road to success is paved with the information gained from just asking the right questions. And listening. And then implementing.

Leadership Through Questions: An Example

An Example

As the **newly appointed team leader**, you want to demonstrate that you are interested in and are engaging all team members. You decide to accomplish this by dropping by each member's office on a periodic basis to inquire about their project.

In your **first attempt**, you ask Penny how her new process for oil–water separation is progressing; her reply is that it is going fine.

You then ask if you can **supply assistance** of any type; she says that none is required.

Finally, you ask if she will be able to meet the **deadline set** for next month; she indicates that she can.

You subsequently leave Penny's office feeling that everything is fine and that your questioning approach is effective.

- How would you assess the knowledge content of the responses that you received?
- What do you think Penny's impression was of your discussion?
- How could you have carried out the questioning session to extract more useful information for both you and Penny?

Suggested approaches the example in the previous slide

- ✓ The useful and helpful information content in the exchange with Penny is **near zero**.
- ✓ Both you and **Penny should be disappointed** in the outcome of this discussion.
- ✓ It is **unlikely** that you made a **positive impression** on her, despite your attempts at engaging her and demonstrating your interest in her efforts.
- ✓ She most likely felt that you were “**ticking the box**” to convince her that you were truly interested in her thoughts, accomplishments, and concerns.

A better way to have this conversation would be something like the following:

- I know that the oil–water separation process has been a focus of yours and I want to make certain that I understand more of the details of this potential advance.
 - Can you describe each approach that you have investigated? I would be interested to hear your thoughts and conclusions about them.
 - Which do you believe are the most promising ones and why?
 - What are the advantages and disadvantages that you have observed?
 - What is unique about your approach relative to the existing methods?
 - Is there anything you need in order to meet the deadline next month that our Vice President has set for this project?
- ✓ **Such questions show your interest in her progress** and success and indicate encouragement and appreciation for her efforts.
 - ✓ They also show your attempts to follow her work and to demonstrate that you find this work significant

Questions that Encourage the Team Members

- ✓ Leaders must be mindful of the **type of questions and the manner** in which they ask questions to **avoid discouraging others**. i.e. employees should be empowered and inspired by the questions posed.
- ✓ Examples of discouraging questions include:
 1. Why haven't you made more progress with your project?
 2. Why have you failed to meet the deadline set for you?
 3. How could you have made that decision?

These questions seek to **place blame** and thus put the individual on the **defensive**; they are representative of ineffective leader approaches.

More **appropriate ways** to ask the same types of questions that initiate a dialogue are:

- What limitations have you experienced on your project? How might these be overcome?
- Was the deadline for your project unreasonable? If so, what aspects were initially not taken into account?
- I would like to better understand why you took the approach that you did to address that problem. **Can you take me through how you did this?**



68

Discouraging Questions



69

Appropriate Questions

- ✓ **Appropriate questions** are formulated in a way that precludes simple **yes or no** answers or even direct answers.
- ✓ Questions should be **open-ended** to incite discussions that reveal new information, directions, or insight, present the reasoning behind opinions and conclusions reached.
- ✓ For example, **effective leaders solicit responses to queries** such as:
 - Are there better or alternative ways to accomplish the same goal? What are these and why would they be better or worse?
 - What aspects of the project or process have not been addressed or considered?
 - What is possible if we change our view/approach to the problem?
 - Are we as a team or organisation going in the right direction; if so why and if not, why not?
 - How do you and others feel about recent changes to the team or organisation?
 - What is (are) the greatest limitation(s) you face in being able to accomplish your task(s)? How could these be best addressed?

None of the above questions can be **answered simply**, but stimulate open discussion and consideration of different ideas and approaches.



70
Encouraging Questions



71
A most appropriate venue to ask questions is when a leader provides feedback to employees.

Multiple – Choice and Short Answer Questions

MCQ

When a leader has a one to one meeting with his/her team member, the leader asks the following questions. Which of them are discouraging questions (Select all that apply)?:

1. What could I do to facilitate your success professionally and personally?
2. Why don't you agree that this is the direction the project should take – you have no answer, don't you?
3. Why aren't you as good at running this project as your colleague Tom is?
4. If we could change just one thing about our company, what would it be?
5. Is there anything blocking you from getting your work done?
6. Since the commencement of your job (three months ago), your progress is not satisfactory . Do you want to move to another department?

Discussion Question

1. A young engineer who reports to you informs you that she is going to turn in her resignation because the opportunities in her current position are very limited.
What types of questions could you ask to assist her evaluation of current or future positions and opportunities?
2. An employee of yours expresses his frustration to you because he is not making progress with the project he has been assigned. What questions could you ask to help him assess this situation and plan a path forward?

References

1. D. W. Hess, Leadership by Engineers and Scientists, Wiley, 2018
2. <https://medium.com/the-mission/are-women-better-leaders-than-men-9fb328065b8b>
3. <https://corporatetraining.dudaone.com/how-to-design-a-successful-leadership-development-program>
4. <https://www.aperianglobal.com/inclusive-leadership-transforming-knowledge-into-action/>
5. <https://www.slideteam.net/leadership-powerpoint-presentation-slides.html>
6. <https://www.shutterstock.com/search/leadership+vs+management>
7. <https://www.shutterstock.com/image-vector/leader-vs-boss-leadership-business-concept-374066845>
8. <https://www.quora.com/What-are-the-significant-differences-between-a-leader-and-a-manager>
9. <https://culcwangj54.wordpress.com/2014/04/01/leadership-vs-management/>
10. <https://www.alfraconsulting.eu/problem-solving-training/>
11. https://www.teahub.io/viewwp/oTJhTm_electrical-engineering-world/
12. <https://gradaustralia.com.au/career-planning/electrical-electronics-engineering-whats-the-difference>
13. <http://sicommunication.mk/en/tips/how-to-become-a-good-listener>
14. <https://hrmexpress.vn/2018/10/15/10-sai-lam-pho-bien-trong-lanh-dao-va-quan-tri-nhan-su/>
15. <https://thriveglobal.com/stories/7-signs-that-youre-a-micromanager/>
16. <https://clickup.com/blog/micromanaging/>
17. <https://learnloft.com/2017/09/20/the-true-cost-of-bad-leadership/>
18. <https://oiglobalpartners.com/3-signs-youre-an-ineffective-leader/>
19. <https://therightreflection.com/book-reviews/what-separates-a-great-leader-from-an-ineffective-leader/>
20. <https://sarojbooks.khanteam.com/j5r/effective-oral-communication.html>
21. <https://www.wearediagram.com/blog/a-successful-digital-strategy-requires-sales-marketing-teamwork>
22. <https://focusu.com/blog/100-quotations-on-team-work/>
23. <https://sparkup.app/sparkup-news/the-art-of-dealing-with-difficult-people-in-meetings/>
24. <https://www.marketingweek.com/forrester-cmos-increasingly-targeting-ceo-jobs/>
25. <https://deadwildroses.com/2020/06/08/thoughts-on-inequality-and-justice/>
26. <https://www.colourbox.com/image/attentive-businessman-listening-to-business-partner-talking-duri-image-27737855>
27. <https://www.pinterest.com.au/pin/408490628693390408/>
28. <https://www.aeyleadership.org/aeyl-programs/kissclipart-mentoring-clipart-mentorship-clip-art-567069af2335e31a/>
29. <https://www.dralexjimenez.com/mike-halpin-state-farm-insurance-agent/>
30. https://www.123rf.com/photo_131212202_hand-writing-mentoring-crossword-concept-with-marker-on-transparent-wipe-board-isolated-on-white.html
31. <https://expertprogrammanagement.com/2017/02/leadership-styles/>
32. <https://onstaffusa.com/recognize-leadership-styles/>
33. <https://www.slideteam.net/leadership-powerpoint-presentation-slides.html>
34. <https://www.pinterest.com.au/jxmcauliffe/transformational-leadership/>
35. <https://www.losrecursoshumanos.com/tag/motivacion/>
36. <https://www.losrecursoshumanos.com/tag/motivacion/>
37. <https://www.ourpursuit.com/how-to-be-an-effective-and-influential-leader/servant-leadership/>
38. <https://theapprenticeacademy.co.uk/wp-content/uploads/2017/01/5-Hidden-Qualities-of-a-Great-Leader.jpg>
39. <https://depositphotos.com/stock-photos/personal-values.html>
40. <https://medium.com/@precioustosin/what-is-my-true-self-my-reflections-on-andelas-epic-values-5fd6c6e5eee9>

References

41. <https://andersonbd.com/our-approach-to-business-development.php>
42. <https://www.oxford-review.com/blog-how-managers-develop-emotional-intelligence/>
43. <https://www.makingbusinessmatter.co.uk/reflection-emotional-intelligence/>
44. <https://medium.com/@standardoftrust/take-the-time-to-build-trust-and-credibility-2ef5672c1703>
45. <https://www.insightlink.com/why-trust-matters-in-the-workplace.html>
46. <https://sketchplanations.com/the-trust-equation>
47. <https://www.fi360.com/blog/post/a-math-nerds-evaluation-of-blaines-reputation-white-paper>
48. <https://life-of-tee.com/2019/12/16/accountability/>
49. <https://ssaurel.medium.com/you-must-know-the-fundamental-difference-between-people-that-succeed-and-people-that-fail-c4e67640f736>
50. <https://slideplayer.com/slide/5340518/>
51. <https://www.forbes.com/sites/forbescoachescouncil/2018/01/11/you-win-or-you-learn-risk-taking-for-leaders/?sh=63d145853e5c>
52. <https://www.canstockphoto.com/images-photos/risk-reward.html>
53. <https://www.womenonbusiness.com/smart-risk-taking-tips-entrepreneurs/>
54. <https://climerconsulting.com/episode-11-creativity-and-risk-taking/>
55. <https://theodora-b.com/2018/02/18/step-outside-your-comfort-zone/>
56. <https://www.lifehack.org/articles/lifestyle/its-time-to-change-your-life.html>
57. <https://www.slideshare.net/deloresbarnhill/131-ethical-behavior-5367772>
58. <https://mbrurkeonmbd.com/2021/02/23/x-consulting-ethics/>
59. <https://www.europeanceo.com/business-and-management/top-5-ways-ceos-can-create-an-ethical-company-culture/>
60. <https://culcbalacr11.wordpress.com/2017/01/25/blog-1-ethics-and-leadership/>
61. <https://www.slideshare.net/VarunOjha7/professionalism-in-the-workplace-76786718>
62. <https://bestcompaniesaz.com/professionalism-workplace-top-10-tips/>
63. <https://invisible-lioness.com/improve-time-management-skills/>
64. <https://elgl.org/prioritize-and-executebuzz/the-eisenhower-decision-matrix-png-1024x768/>
65. <https://www.schultzknowledge.co.uk/time-management-master-class/>
66. <https://pmoconsultant.wordpress.com/2016/09/19/are-you-asking-the-right-questions/>
67. <https://theprayingwoman.com/10-self-convicting-questions-that-will-keep-you-on-track-daily/>
68. <https://www.searchenginejournal.com/seo-job-interview-questions/303921/>
69. <https://www.constructionexec.com/article/schemes-scams-and-cost-of-occupational-fraud>
70. <https://c-suitenetwork.com/advisors/12-questions-thriving-leaders-ask-their-team/>
71. <https://www.forbes.com/sites/forbescoachescouncil/2019/08/13/leadership-kryptonite-and-how-to-avoid-it/?sh=6e4b07b6638a>
72. https://www.tutorialspoint.com/management_principles/management_principles_mission_vision_values.htm
73. <https://www.avanthicollege.ac.in/vision-mission/>
74. <https://dataflog.com/read/technology-predictions-for-our-world-in-2050/4453>
75. <https://theconversation.com/how-we-forecast-future-technologies-20313>