DATA LITERACY FUNDAMENTALS

Understanding the Power & Value of Data

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PRESS

CHAPTER 9

The Nine Steps to Organizational Success

"A journey of a thousand miles begins beneath the feet."
– Tao Te Ching, Chapter 64, Stephen Mitchell translation

In the first eight chapters of this book, I attempted to enumerate and explain some of the most important concepts and principles that form the foundation of data literacy, with a touch of AI literacy thrown in for good measure. For a deeper dive into AI literacy, I refer you to this book's cousin, *AI Literacy Fundamentals*. In this ninth chapter, I switch the focus from the individual to the collective, exploring how organizations can plan and run data and AI literacy programs to upskill their entire workforce and embrace the Fourth Industrial Revolution that's well underway.

Change management is a discipline all to itself. The Data and AI Literacy Movement can borrow from the lessons

learned by the continuous improvement methodologies of the past few decades, from Six Sigma to Lean Manufacturing to Agile Software Development, to name just a few. In the past decade, Data Literacy Champions have learned what Six Sigma Black Belts, Lean Practitioners, and Agile Scrum Masters found out in decades past—that moving an organization from one way of doing things to another takes careful planning, plenty of support, sustained effort, a good measure of luck, and sometimes, seemingly, an Act of Congress. It's not for the faint of heart.

For those steeped in the art and science of change management, these nine steps will look somewhat familiar. What I have attempted to do is to convey the conventional wisdom about how to ignite and steer culture change, while putting a data literacy spin on the steps.

Figure 9.1. The Nine Steps of Organizational Success

1. Develop a Compelling Case for Change

Sometimes called a "burning platform," the case for change is the rationale you give, and the story you tell, which together provide the impetus for immediate change. We human beings tend to resist change, so if you're going to ask an entire workforce to embrace data and AI, you'll need to put forward a convincing reason, at least for some. This step should be taken honestly and ethically, avoiding excessive fearmongering or, conversely, stoking greed.

The case for change could be a competitive threat within your industry, a need to pivot from one product or market to another, or a financial crisis within your own organization that simply can't be ignored. Don't assume that everyone will automatically agree with you and accept your argument without question. Articulate what's likely to happen if the organization doesn't change, and why, therefore, it's in everyone's best interests that you all take control of the way data and AI are used, and, importantly, the way that they're not used.

2. Build a Coalition of Influential Supporters

It's nearly impossible for a single person to move even a medium-sized organization alone, let alone a global enterprise. You'll need support from influential individuals who lead and work in different departments. This, of course, includes at least a few key executives. But don't be

fooled by title and pay—leaders can be found at all levels of the organizational hierarchy.

In our experience at my company, Data Literacy, it's a very good sign when team members from at least two of the following three groups are present in conversations about their program: 1) data and analytics, usually reporting to the Chief Data Officer (CDO or CDAO), 2) learning and development, usually reporting to the Vice President of Human Resources, and 3) the "business," or, in other words, a group that's involved with sales, marketing, product development, or another non-IT, non-HR function. To lead a robust change management initiative, you'll need to get their involvement and support eventually.

3. Identify Internal Data & AI Personas

When it comes to upskilling an entire workforce in fields as vast and multifaceted as data and AI, a one-size-fits-all approach simply won't work. People on your teams are starting from dramatically different fluency levels, and different roles within your organization perform very different functions using data and AI. Refer back to the Seven Groups of Data Activities in chapter 7 for a reminder about the overall workflow that teams need to execute.

The diverse nature of data work means that you'll need to define a handful of learning groups based on current abilities and job needs. Some organizations even create personas, complete with fictitious names, avatars, and

profiles. In my opinion, you don't necessarily need to go that far, but you absolutely do need to define the learning groups themselves.

We often see one group for "data citizens" (also sometimes called "data consumers," or "business users"), another for "data professionals," and another for leadership. The leadership group is sometimes broken up into technical and non-technical leadership subgroups. It's not uncommon to break the "data citizen" and "data professional" groups down further, but you want to avoid creating too many groups. More than six or seven personas may be excessive. But this is for you to decide.

4. Measure the Baseline & Identify Barriers

A question to ask yourself in the beginning stages of a data literacy program is: how will we know if we're improving? You need to establish a baseline against which you can measure progress, and you need to accurately understand your current state—with all of its flaws—to understand what must be addressed to move forward.

At my organization, we offer an assessment we call the Data Literacy Score™. This organizational assessment features a subjective component and an objective one. In the subjective portion, individual team members anonymously score their teams across seven critical factors: purpose, ethics, data, technology, people, process, and culture. They also select top strengths and barriers in two multi-select

questions, and they provide their ideas for improvement in a final open-ended question. In the objective portion, team members answer knowledge-based questions (with right-and-wrong answers) in order to identify areas of focus for training. You don't necessarily need to use our assessment, but you do need to draw a line in the sand somehow.

5. Define KPIs & Set Goals

Once you have established your organization's baseline, or current state performance, you want to set a goal for the organization for a year down the line. Given your current maturity level in data and AI, where do you want to be a year from now? Is there a way to break this high-level goal into smaller subgoals that are more tangible?

The Goal Tree we covered in chapter 3 can come in handy here. One of the nice things about the seven critical factors of the Data Literacy Score™ is that it gives organizations seven possible metrics to target as Critical Success Factors. These lower-level goals can help to focus the organization on specific aspects of data and AI literacy. It's unwise to try to tackle everything all at once.

In addition to your overall maturity level and critical success factors, you should establish goals and metrics around the top issues or barriers that your measurement of the current state uncovered. For example, if the top barrier chosen by the team was "difficulty finding and accessing

data" (this has been, in fact, the top barrier chosen by our clients overall), then ask yourself what metrics would help you track improvements in this area. Lastly, set goals for the training you will roll out: its quantity (e.g. adoption rates and completion rates), quality (e.g. test scores), and perception (e.g. trainee satisfaction).

6. Design Role-Based Learning Journeys

Speaking of training, every data and AI literacy program will need to do it—lots of it. But I want you to think in terms of learning, not just training. What do I mean? Training involves courses that instructors teach to learners:

- on-demand training (also called e-learning or computer-based training, CBT),
- virtual instructor-led training (VILT),
- classroom training delivered onsite,
- microlearning, delivered in "drip," or "bite-sized" format,
- other styles and formats that involve a teacher and a student

These components are essential in every data and AI literacy program. Learning, on the other hand, involves many additional forms of knowledge and skill-building beyond the more traditional forms, including:

- one-on-one coaching or mentorship
- peer-to-peer knowledge sharing

- thriving communities of practice
- job shadowing and apprenticeship
- competitions and hackathons
- self-reflection and journaling
- many other types of experiences

The learning pathways that you and your team design can be interactive, fun, and engaging. Why make learning boring? We've all experienced enough of that. And of course, you want to make sure these learning experiences are relevant to every individual learning. To accomplish this lofty goal, you need to create learning pathways that are customized to each learning group or persona.

7. Implement Learning & Support Networks

Once you've designed the learning journey for each persona, it's time to put people into groups and ring the morning bell! Class is in session. Before rolling out the entire program across the board, it's always a good idea to start with a smaller pilot group of learners, and pause to assess and reflect. What worked well, and what didn't work so well about the courses and the pathways? How can you tweak them, and add much-needed support at critical points?

Again, when it comes to support, think beyond the courses and the instructors themselves. What support networks are you putting in place to shepherd learners along the

way? The best programs I've been associated with had champions from the data team as well as embedded leads from the business teams in each group or cohort. These community leaders organized progress check-ins, created FAQs and wiki pages, shared bonus educational content and reminders on intranet sites, monitored internal communication channels, and held routine office hours. You don't need to have your data literacy champions do all of those things, but they should be doing some of them. Pick the ones that will be most helpful for your learners.

8. Generate and Celebrate Quick Wins

It's conventional wisdom that, for a culture change program to gain momentum, you need to find a way to create success stories early in the program's deployment. Often, change management leaders will look for the "low hanging fruit"—situations that take a relatively small amount of effort to nudge in the right direction, and for which the change will yield a nice, measurable payoff. What kinds of quick wins can be achieved with data and AI?

I would look for a recurring process that involves decisions that are currently being made without data, but for which high-quality data already exists. It's further helpful that this target situation involves a leader and a team that are ready for change. Maybe there's a highly manual customer service process that can be augmented with charts or an AI chatbot. Maybe there's a marketing campaign that has been on autopilot for months that can be analyzed and

optimized using A/B testing. Maybe there's a manufacturing process that has been producing a lot of waste that can be reduced or eliminated. The possibilities are endless. Again, just look for those three criteria: (1) a recurring process (2) that doesn't leverage data today, (3) that has a leader and team ready and eager to change. Secure the wins, and then shout them from the rooftops.

9. Measure Progress & Continuously Adjust

After your early success stories have the intended effects, and individuals begin replicating and generating their own successes across the organization, you might want to claim ultimate victory and ride off into the sunset. Not so fast! As I mentioned before, culture change takes continuous effort and adjustment to "sustain the gains." A data and AI literacy change management program is no different. It only takes a few influential people to change roles or leave the organization for everything to slide back into a state of disrepair.

You need to be relentless in your approach, here. Monitor your KPIs, look closely at the lower-level goals and targets, and, perhaps most importantly, talk to people involved in the program and ask them how things are going, and what else can be done to improve.

AI Applications & Implications

Early in my career, when I was a mechanical design engineer in the automotive industry, I trained to become a Six Sigma Green Belt. I used this methodology to reduce manufacturing scrap on the production line. I saved the company a lot of money that way, but mostly by correcting errors I could tie back to my own design flaws.

Then, when I made the jump to the medical industry, I joined a team that had combined Six Sigma with Lean, the methodology informed by the Toyota Production System to identify and remove several forms of waste from processes. These two continuous improvement methodologies had been brought together into one single change management program. The way we saw it, Lean was the "umbrella" methodology, and Six Sigma was a toolkit to remove one particular type of waste: process flaws attributable to excess variation.

Much of the reason why I'm writing the second edition of this book is to do something similar with data literacy and AI literacy, namely, to bring them together into one, single movement. The way I see it, data literacy is the "umbrella" concept, analogous to Lean. AI literacy, analogous to Six Sigma then, is the specialized toolkit. It involves using data in one particular, very powerful way: to train machine learning algorithms to perform "intelligent" tasks. I go into greater detail about what that means in AI Literacy Fundamentals.

Now, I believe that AI is evolving, and it's evolving very rapidly. The current state of AI is that machine learning, and deep learning in particular, are the dominant paradigms. These approaches currently leverage data to train AI models. That's why it's practical to place AI under the data umbrella. It's conceivable—and I believe quite likely—that AI will evolve to incorporate more symbolic (rules-based) components that will complement the current statistical (connectionist) engines of inference.

At that point, we will have some sort of a Venn Diagram with overlapping data and AI circles, and we'll need to rethink and adjust the approach I'm currently advocating. For now, though, I believe this approach is the best one. There's certainly no need, of course, to be dogmatic about it. Other approaches would probably work fine, as well.

Change Management is Hard Work

These nine steps will help you get started with your data and AI literacy program, but you'll want to modify them somewhat to fit your own unique situation. I can give you some pointers, but you have to look at the playbook and figure out what applies, and what doesn't. Force-fitting actions that don't make sense won't help you or your team. I'm not merely giving you permission to tweak the playbook—I'm asserting that it's your responsibility.

If you ever need help or guidance, don't hesitate to reach out! My team and I feel strongly that we need to educate

everyone about data and AI so that they can grasp their power and value, and also find their own voice in the growing dialogue around these technologies.