

Teaching Employees to Make Better Decisions with Data

RAISING THE LEVEL OF DATA LITERACY IN YOUR ORGANIZATION CAN PAY SIGNIFICANT DIVIDENDS, BUT IT REQUIRES MORE THAN JUST CONDUCTING A TRAINING SESSION.

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Many employees routinely misuse data to respond to pressing business questions because they aren't data literate. The cost of a missed sales forecast, a mis-priced product, or an overabundance of inventory can have real consequences for a business. IBM estimates that in 2016, U.S. companies lost \$3.1 trillion due to poor data quality (IBM 2016). This figure relates to big data, but bad small data is problematic as well.

Although information professionals can't correct all of the bad data, we can help our employees become more data literate. *Data literacy* is the ability to interpret, evaluate and communicate statistical information (Beauchamp 2015).

Raising the level of data literacy within our organizations poses some challenges. For example, employees are pressed for time, so how can we get them to make time to attend a data literacy training session? And once we get them there, how do we make the training valuable?

This article offers 10 implementable suggestions for data literacy instruction so that employees learn to ask the right kinds of questions when evaluating data and know where to find accurate market information. These suggestions are based on work I performed in my previous position, where I was part of the market research group. When we realized our fellow employees were having problems with data, we decided to make data literacy part of our mission.

Don't call it data literacy. Data literacy is not a term that is familiar to most people. In fact, hosting a session on data literacy might imply that attendees are somehow illiterate. Instead, call your session "How to improve your presentations with data" or "Using data for strategic decision making."

Don't fight Google. If your company uses data that employees are finding through Google, create a list of websites where good information is available. Teach them how to search Google more effectively to obtain high-quality information, such as by date searching, limiting by domain (.edu, .gov, .org, etc.), and using the image search to find charts and tables. List the best websites for the types of data they need—for example, data on private mortgage insurance, inflation rates (in other countries), exchange rates, and professional associations and special interest groups—on your company's intranet. Invite employees to contribute websites to this list.

Make good data findable. Use your organization's intranet to publish current data on market size, mar-

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ket growth, competitors, and industry trends. Employees will use company-sponsored data if it's readily available, in a format they want, and up to date. If asked questions, respond with links to the data to reinforce that this is the place where the data is maintained. At my former organization, we were tasked to develop market analyses with "one version of the truth" because we didn't want our executives to report market growth rates that differed from those the product managers used in press releases. Good data should be consistent, non-redundant, and centralized (Hogenboom et al. 2011).

Post best-in-class examples on your intranet. Posting effective visuals and PowerPoints on your company's intranet for employees to copy or borrow helps propagate best practices and rewards those who developed these best-in-class works. If employees put a lot of time into developing a slide deck, they will feel they've made a significant contribution if the visuals are used more than once (Ryan 2015).

Teach infographic creation. Employees are impressed by infographics, but few know how to create them. Prepare a few basic infographics (with or without the help of a graphic designer) about, say, the size or growth of the market, then take the employees through the process of developing them. Explain that an infographic actually tells a story and has a point of view, so you must be selective about the data you present. Identify the data components to highlight and sneak in the data literacy instruction.

Host data boot camps. If your company has a business intelligence group, data boot camps can be run internally. Start with instruction in internal business intelligence tools, then move on to SQL or R or classes in modeling and presenting data. The goal is to make sure employees understand the data available to them and the kinds of questions the data can answer (Burns 2015).

Teach forecasting. There are three basic forecasting methods, which you can teach or hire an expert to teach.

Show what actually happened (to sales, inventory, market growth rates, the economy, and so on) compared to what was forecast, then discuss how to update the forecasting model. Record this session so employees can watch it at their leisure. Send links to the video if employees ask questions about forecasting (Chambers, Mullick, and Smith 1971).

Host a data open house. Post charts, tables, and other infographics in large posters around a room and invite employees (including your boss and his/her boss) to attend. Provide "tours" of the infographics to highlight company-approved data. Use sticky notes for questions; offer snacks. Ask for data contributions—new data that a unit in your company regularly uses that you may not know about. The goal is to introduce employees to the data you have, make them aware of it, teach them how to find it, and invite them to question it—in sum, to have a conversation about data. This is sometimes difficult to do when employees are navigating a website (James 2015).

Make office hours available for presentation help. Help employees who are working on presentations by allowing them to practice their presentations while you watch. Ask them probing questions. Check the source of their data and learn when and how they updated it. Let employees critique each other's work if multiple people show up during the help session. Ask a graphic designer (or someone who is good at design) to participate and offer suggestions for combining charts, color coding findings, and making slides more meaningful.

Develop a class on making presentations to managers. Many employees don't realize that managers need an analysis of a question or problem, not just a compilation of data. To engage employees, make sure this class uses active learning techniques (Bhagava and D'Ignazio 2016; Freeman et al. 2014). Consider including these elements:

- Slide critiques;

- Forecasting exercises with three scenarios;
- Infographic tool instruction—provide data to small groups and ask each group to create a graphic by showing them an easy-to-use tool (e.g., Tagxedo, Wordle, or Infogr.am) or Excel (for charts and graphs); and
- Explanations of charts (when to use which type and how to best show your data). **SLA**

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