Big data is an emerging topic. Managers, however, lament the lack of big data specialists in industry. We aim to identify key skills needed by information system professionals to design and develop big data analytical solutions. Therefore, we conducted a literature review to identify papers containing skill requirements for information systems professionals or even frameworks for teaching students about big data. As this topic is closely linked to practice and related literature is sparse, we also conducted expert interviews with big data specialists to ascertain from their standpoint what content should be included in a learning framework. The learning framework containing key skills for big data analytics we developed was evaluated in a focus group discussion. The identified skills range from well-established concepts of data warehousing and relational databases to emerging topics such as handling in-memory databases, real-time analytics and new business models. As the field of big data is diversified, the focus group suggested focusing the learning framework on business models, analytics and emerging databases.