

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Faculty Publications: Agricultural Leadership,  
Education & Communication Department

Agricultural Leadership, Education &  
Communication Department

---

2022

## Form follows function: Research and assessment design for leadership learning

L.J. McElravy

Follow this and additional works at: <https://digitalcommons.unl.edu/aglecfacpub>



Part of the [Higher Education Commons](#), [Higher Education and Teaching Commons](#), and the [Other Education Commons](#)

---

This Article is brought to you for free and open access by the Agricultural Leadership, Education & Communication Department at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Faculty Publications: Agricultural Leadership, Education & Communication Department by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# Form follows function: Research and assessment design for leadership learning

L. J. McElravy

Department of Agricultural Leadership,  
Education and Communication, University  
of Nebraska–Lincoln, Nebraska, USA

## Correspondence

L. J. McElravy, Department of Agricultural  
Leadership, Education and Communication,  
University of Nebraska–Lincoln, Nebraska,  
USA.

Email: [lj.mcelravy@unl.edu](mailto:lj.mcelravy@unl.edu)

## Abstract

This article discusses how the design of research should follow the questions the study seeks to address. The article provides practical and diverse examples of broad research questions applicable to researchers or program architects and summarizes how different methods should be employed to respond.

## INTRODUCTION

I have been teaching “Research Methods in Leadership Education” for the past five years. The goal of the course is to help orient graduate students to leadership research and assessment, and for many students, I’m introducing them to social science research and assessment broadly. The beauty and challenge of engaging in leadership research and assessment is that it is transdisciplinary, interdisciplinary, and multidisciplinary. What this means in practice is that leadership research and assessment have fewer conventional boundaries when compared to other more established fields (e.g., psychology). Leadership is not unique in this respect, as education research and assessment – another applied field of study – exists in what, at times, feels like boundless space. This freedom is both a blessing and a curse.

## BLESSING AND CURSE OF LEADERSHIP SCHOLARSHIP: PHILOSOPHICAL ASSUMPTIONS

Without boundaries of conventional disciplines, I think it is often necessary to begin with the fundamental question, “Why do we engage in research and assessment?” I think one of the most straightforward answers is that research and assessment create knowledge. So, a logical next question might be, what is knowledge. Unfortunately, I have not found a straightforward answer to this question, and I have to rely on terms developed within the

---

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. *New Directions for Student Leadership* published by Wiley Periodicals LLC.

philosophy of science and philosophy more generally, such as epistemology, ontology, and paradigms. These are big words that address big philosophical questions, including “what is real?” and “how do we know?” Creswell and Creswell (2018) summarize these terms as worldviews meaning “a general philosophical orientation about the world and the nature of research that a researcher brings to a study” (p. 5). McGregor (2018) uses similar language in distinguishing between research methodology and research methods. Research methods are the specific procedures and tools we use to conduct research (e.g., analysis of variance,  $2 \times 2$  experimental design, phenomenology), whereas research methodology refers to the “philosophical underpinnings of research intended to generate new knowledge” (p. 8). I have chosen to use the term worldviews to avoid confusion with methods and methodology.

Worldviews serve as the philosophical framing for the type of knowledge created using specific research and assessment designs. Visual art is a way to understand how worldviews apply to research and assessment designs. Imagine an artist who wants to depict a meadow. The artist is going to depict the meadow from the perspective from which they see the meadow. Does the artist depict the meadow from above, looking directly down, or zoomed in on a single blade of grass? The specific perspective of the artist determines what will end up in the final depiction. Worldviews are similar in that different worldviews shape the focus of our research and assessment. Although consensus does not exist about different worldviews applied in research and assessment, I have found the four worldviews outlined by Creswell and Creswell (2018) a good starting point: postpositivist, constructivist, transformative, and pragmatic.

1. A postpositivist worldview is based on cause-and-effect reasoning. This is often considered the traditional philosophical worldview applied in research methods, where observation and measurement are used to understand an objective reality (truth). We would expect a postpositivist’s research and assessment to focus on theories to predict specific actions with a high rate of consistency.
2. A constructivist worldview situates reality as a process of social construction. Humans make meaning of their experiences based on the social context. Social contexts are interpreted using one’s own history and past experiences. Within the constructivist worldview, researchers may focus on the understanding and meaning within the social context and recognize that multiple meanings can be generated by different individuals.
3. A transformative worldview holds that inequities exist within social structures, and reality cannot be extracted from these political and power systems. A transformative worldview extends the constructivist worldview, in that the assumption of meaning being made from the social reality is consistent, but the transformative worldview also includes an action agenda to address social inequities. Researchers applying a transformative worldview may apply a critical theory lens, would focus on action to reform injustices, and balance power for marginalized individuals.
4. The pragmatic worldview is concerned about finding solutions to problems. What works at a specific point in time is true and real. Pragmatists are not committed to a single philosophy of reality. We would expect pragmatists to focus on problem-solving, real events and experiences, and the intended consequences associated with research and assessment.

These worldviews and their philosophical assumptions influence the types of designs appropriate for a study or project. For example, a constructivist would not likely use an experimental design, where variables are controlled in order to isolate the effect attributed to an intervention, because a situation where social reality is stripped from the context would be considered essentially meaningless. Worldviews provide the framing for specific

design options. Although not absolute, we would generally see a postpositivist worldview associated with quantitative methods (e.g., experimental methods, surveys), and a constructivist worldview associated with qualitative methods (e.g., narratives, ethnography). Qualitative methods are also often associated with transformative worldviews. Pragmatic worldviews are often associated with mixed methods, assessment, evaluation, and action research.

## WHAT COMES FIRST: THE RESEARCH QUESTION OR RESEARCH METHOD?

I used to spurn the question of whether the research question or research method came first because I was taught that the research question is what drives your research methods and always comes first. Similarly, I abhorred a statement I often hear from students and colleagues that they are a “qualitative researcher” or a “quantitative researcher.” In my mind, this statement was deplorable because again, the research question determines what kind of methods and the type of researcher you need to be for any project. I like to think that my thoughts on this question have softened, evolved, and become more nuanced as I learned more about engaging in research and assessment. Before I provide a direct response to the question, I first want to articulate three broad observations about the field of leadership influencing my views, then connect these observations to implications for, what I consider to be, a modern leadership research and assessment reality.

My first observation is, by engaging in leadership research and program assessment, we are attempting to describe a complex process. One illustrative example of leadership complexity is provided by Uhl-Bien and Arena (2017), where complexity is described as mayonnaise. Once you put all the ingredients together (e.g., oil, egg, lemon), they cannot be separated, and you have something completely new. As it relates to leadership, the intersection of leaders, followers, and the context create a process that once put together, creates a whole new product, where the individual components cannot be broken back apart. Leadership cannot truly be understood by simply breaking it down and trying to explore individual components.

Another element of complexity is unit-of-analysis. Unit-of-analysis refers to what level of a phenomenon are we measuring. For example, within leadership learning, we could assess leadership learning of an individual, leadership learning within a leader-follower relationship, leadership learning within a program or class, or leadership learning within an organization or community. Although different methods can be used to account for multiple levels of data (e.g., multi-level modeling), there is always a choice because not all levels can be measured in a single study. Researching and assessing complex phenomena is challenging, and no single project will be able to capture it all.

My second observation is informed by Ospina and Foldy's (2009) critical review of leadership literature, broadly questioning the nature of leadership scholarship. Who has been studied in leadership research and assessment, who creates leadership scholarship, and which power inequities are caused by or reinforced by leadership scholarship are just some examples of questions that serve as the focus of critical leadership studies (Alvesson & Spicer, 2012). The need for continued focus on critical leadership studies invites the application of a transformative worldview specifically, and the landscape for scholarship with this focus may be more fruitful today than in times past.

Third, the advancement of methods, specifically when considering technological advancement in software, data analysis, and availability of data sources (e.g., the fact that my phone can track where I am, who is next to me, and all my conversations could even be recorded) is a new environment for research and assessment broadly. My own research

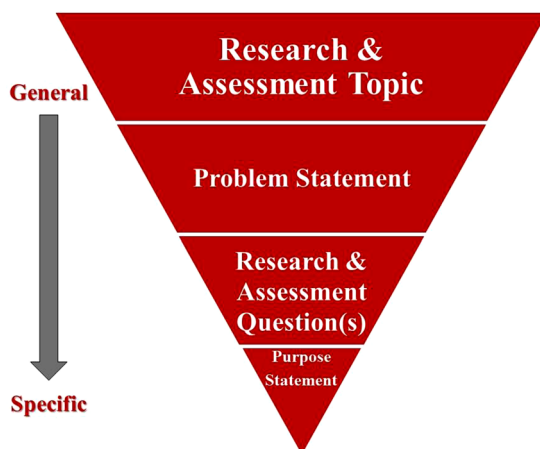
on leadership Ph.D. programs suggests that programs are generally not able to offer the diversity of training necessary to train students in all traditional qualitative and quantitative research methods (Brachle et al., 2021). The pace of the changing context means that a person could not possibly keep up with all innovations in research and assessment.

These three observations – (a) the complexity of leadership, (b) the need for critical leadership studies, and (c) the pace of technological advancement – lead me to some practical considerations to address the question: what comes first, the research question or the method?

I'm going to take just a moment to step back to the discussion of worldviews. The complexity of the leadership process and the history of power inequities within leadership scholarship might suggest that the postpositivist worldview is not an appropriate worldview for creating leadership knowledge. As such, it would seem reasonable to conclude that we may want to limit leadership research and assessment to constructivist, transformative, and pragmatic worldviews. My retort to this thought is that a postpositivist lens, along with the methods used within these philosophical assumptions (e.g., that we can create knowledge about objective reality), would never be able to address all elements of leadership knowledge. I have a really hard time believing we will ever create a universal theory of leadership. However, there would seem to be elements of the leadership process that we can understand from a theoretical and cause-and-effect lens. For example, full-range leadership (i.e., transformational, transactional, laissez-faire leadership), with all its theoretical and empirical concerns (van Knippenberg & Sitkin, 2013) has provided valuable insight on the leadership process. Perhaps this is the pragmatist worldview coming through, but I think it's important to note that there appears to be value in exploring leadership using all the different worldviews and with a diversity of methods.

Another implication of the leadership scholarship environment is that a person could never have all the training necessary to apply every research method. Logically, if all the research method tools are not available, not all research and assessment questions can be explored. I think this practical limitation is important to note because it establishes a clear expectation that we always need to prioritize what we can learn from any specific research or assessment project. One solution is conducting research and assessment in teams, where people can pool their expertise together. In many cases, teams are a great solution, but the practical considerations still create resource limitations. Not all research and assessment projects have the resources to put a team of experts together. I think it is perfectly reasonable to recognize that there are practical limitations associated with any specific research and assessment project.

These three observations influence what I consider my evolved and nuanced response to “what comes first, the research questions or research methods?” Research questions for any project must be informed by practical considerations, including available expertise and resources, and the context (e.g., power inequities) in which the scholarship exists. However, research questions and research methods must be aligned. It is the responsibility of researchers and evaluators to ensure methods and questions fit together to ensure conclusions are drawn from appropriate evidence. Misalignment prevents us from being able to answer the research and evaluation questions we set out to explore. For example, if my research question is “does this leadership intervention cause specific leader behavior changes?” I would likely be limited to a postpositivist worldview using experimental methods. That said, using different worldviews and different methods I would be able to explore other types of questions, for example, how do people experience the training or how do people make sense of the elements of the training as they try to apply it to their roles as a leader. Both of these questions might be a better fit for a constructivist worldview using qualitative methods.



**FIGURE 1** Research and assessment funnel

Within any specific research or assessment project, we should expect co-evolution of research questions and methods as it becomes clear what element of the complex leadership process is explored and what methods are available. To be clear, I am not suggesting that this alignment should occur at any point in the research process. In most cases, especially within the postpositivist worldview, we need to ensure alignment before we begin data collection (though it is important to note that there are protocols for employing post-hoc analysis and other iterative statistical procedures). Even within constructivist, transformative, and pragmatic worldviews, where qualitative methods provide for more methodological evolution during a project, I strongly encourage specific alignment between research questions and methods before data collection begins. Documenting the initial alignment allows for reporting changes that evolve through the research process.

In short, the answer to the question, which comes first, the research question or the research method, is that either can come first, but there must be alignment between the two. Even though alignment may evolve from the beginning of the project to the end, and no matter the worldview, transparently communicating any changes in methods is critical to applying evidence-based leadership research and practice.

## **ALIGNMENT USING THE FUNNEL TECHNIQUE**

A conceptual tool I have found very helpful in my own work and in my teaching is the idea of a research and assessment funnel. The purpose of the funnel is to help broadly align elements of the research questions and methods (see Figure 1). At the top of the funnel, we start with the most general element of the project identifying the general topic(s) of interest. Although the most general topic for many of us might be “leadership development” or “leadership education,” I think it can be important to be more specific. There are many different components of leadership development and leadership education that can help create some specificity to guide our research and assessment projects. Adding qualifiers to the topic can be helpful, for example, a research or assessment topic might be “leadership development for STEM undergraduates.” Another approach would be to intentionally choose a more specific component of leadership scholarship. For example, I’m spending

a lot of my efforts exploring leader identity development, and I use this concept in the examples that follow.

Building from the general topic, we then create a problem statement. The problem statement addresses the “so what” of a project. For example, although we may have research to demonstrate that leader identity development is a predictor of important leadership factors in organizations, we may not know how leadership identity develops. The “so what” of this project might be that it is important to better understand the developmental antecedents of leader identity because this could promote important leadership behaviors.

Within leadership research, we are generally interested in theoretical, empirical, and practical problems, where theoretical and empirical problems may be the prioritized focus. Within leadership assessment, we are likely interested in practical problems, though the way we address these problems are likely influenced by theories and empirical work.

Moving along to the next element of the funnel, we then create research and assessment question(s). These are the specific questions explored within a project. Continuing the problem statement example focused on leader identity development, our research questions might be: what are the developmental antecedents of leader identity development or how do people describe the early phase of their leader identity development? For research, these questions tend to be theoretical, empirical, and practical. In many cases, the practical is less of a priority for research questions compared to the problem statement. The practical relevance for research, especially in leadership, is often an important component of the general problem, but valuable research questions may need to prioritize specific elements of theory or empirical work. For assessment questions, these are nearly always practice-focused. As with the problem statement for assessment projects, the assessment questions are often influenced by theory and empirical work. These differences in research and assessment questions align with the Article 2 author’s descriptions, in that research is often conducted to inform theory and general knowledge, while assessment and evaluation are used to improve leadership development interventions.

Finally, at the tip of the funnel, and the most specific component, is the purpose statement. These may also be the very specific objectives of any project. I find it helpful if the purpose statement can be written in one or two sentences, or in a bulleted list of specific objectives. The purpose statement is a succinct summary of what will be done in the project. Building from the leader identity example, a purpose statement may be: *The purpose of this survey design study is to explore demographic (i.e., race, ethnicity, age, and gender) antecedents of leader identity development within a representative sample of the U.S. workforce.* Components of a purpose statement may be different for different types of projects, but in general, it’s helpful to include the following in the purpose statement: description of participants, research or assessment site(s), specific methods (e.g., experimental designs, qualitative strategies, evaluation methods), and definitions of key variables, constructs, and phenomena.

I want to be very clear with the following point: funnel alignment does not have to occur in a specific linear path. Although the funnel is directional, moving from the general to the specific, this is not a requirement in how you conceive of a project. There are times when I have begun a project, worked my way from a general topic to a purpose statement, and then realized I need to include additional topics. In this case, I would work my way back up to the funnel to make sure that the new topics I’m including align with the problem statement, research question, and purpose statement. If not, I’ll need to make changes. For people delivering leadership programs, you may start with specific assessment questions you want to answer. Perhaps these questions arose from a previous evaluation, perhaps the context for the training has changed, perhaps your stakeholders have changed, or any other myriad of changes that can occur outside of your control. You may have the questions

identified, but it could be valuable to make sure you align the specific topics and problem statements before you create a purpose statement.

In Figure 2, I provide three different examples of leadership research and assessment funnels. In each case, leadership identity development is the research and assessment topic.

### Postpositive example

Example “a” is framed as a research project within a postpositivist worldview, applying a quantitative approach. Specifically, this example is set up as an experimental design. The purpose statement for this project might be: *The purpose of this pre-post control group experimental design is to test an intervention based on broaden-and-build theory (see Fredrickson, 2013 for an overview of the theory) on leader identity development. Participants will include college students in a leadership development program and a control group receiving no leadership training. The dependent variable in this study is leader identity development, and the variable will be measured using an implicit leadership theory scale with a self and ideal leader comparison.*

This type of project would allow researchers to articulate if the intervention caused a change in leader identity development. There would be limitations on the generalizability of the findings given the specific elements of the study, for example, it would be inappropriate to state that this intervention is applicable to people outside the included population (e.g., non-college students).

### Constructivist example

Example “b” is framed as a research project, within a constructivist worldview, applying a phenomenological qualitative method. Dawidowicz (2020) describes phenomenology as the “collection and analysis of people’s perceptions related to a specific, definable phenomenon” (p. 217). The purpose statement for this example might be: *The purpose of this phenomenology is to explore the lived experience of developing a leader identity for college students participating in a year-long leadership development program. At this stage of the research, the researchers will use the definition of leader identity development provided by Day and Harrison (2007): “the sub-component of one’s identity that relates to being a leader or how one thinks of oneself as a leader” (p. 365).*

In this case, the specific phenomenon is leader identity development, and the researchers would be interested in exploring how the participants describe the process of developing their leader identity. For this type of research, the philosophical and methodological framing would prevent us from articulating any cause-and-effect conclusions. For example, the researchers could not claim that the program caused leader identity development. The researchers instead could illuminate and add depth of understanding of how identity develops as an articulation of the experience from the program participants’ perspective.

### Pragmatist and assessment example

The final example is an assessment project, using a pragmatist worldview, and applying a mixed-methods approach. The purpose statement for this project might be: *The purpose of this evaluation project is to describe leader identity development within the year-long*



(A) Research, Postpositivist Worldview, Quantitative Approach, and Experimental Design



(B) Research, Constructivist Worldview, Qualitative Approach, and Phenomenology



(C) Assessment, Pragmatist Worldview, Mixed Methods Approach



**FIGURE 2** Research and assessment funnel examples

*leadership program to determine programmatic changes that may need to be adjusted to enhance leader identity.*

1. Conducting focus groups with employers to explore how they describe first-year employees engaging in their leadership roles.
2. Surveying program alumni to determine which elements of the year-long leadership program they believe influenced their identity as a leader in their current role.
3. Conducting a retrospective pretest and posttest evaluation of leader identity development for students who recently completed the program.

The pragmatic nature of the assessment provides freedom from some of the philosophical assumptions associated with research. Said another way, the degree of evidence needed to make programmatic changes for a leadership program is different from evidence needed to make broad generalizable claims about leader identity development in general. For example, it would be inappropriate to claim that the program causes leader identity development, but the findings from this assessment project could provide programmers and their stakeholders with information to make changes to improve the program.

The three project examples share the same topic and could be using the same group of participants within the same leadership program as a site for the study. The differentiated focus of the problem statements and the research and assessment questions help articulate how alignment along the funnel can lead to different purpose statements and eventually different research methods. In absolute terms, there is nothing inherently better among any one of these three projects, they are all creating knowledge and meeting the needs of the intended audiences. In the examples provided, I would expect both examples “a” and “b” to be appropriate for a peer-reviewed research journal publication. Both researchers and practitioners could find value in these studies, as they could inform future research and leadership programs. In the case of example “c,” both programmers and stakeholders would find value in the results. Additionally, it could be appropriate to publish this type of project in a trade publication or peer-review journal publishing application and practice papers. This type of scholarship can provide practitioners and researchers with insight into leadership programming. Again, all three of these projects generate valuable knowledge.

## CONCLUSION

My favorite saying when I teach research and assessment methods is “there is no such thing as a perfect project.” A single project cannot create universally true and unquestionable knowledge about any leadership research question, leadership program, or assessment project even if its postpositivist design seeks to do so. Although it would be wonderful to engage in perfect scholarship, there are too many limitations for that to be the case. Our ability to create knowledge about the process of leadership requires using different philosophical assumptions and their associated methods. My “we can’t do it all” perspective is not intended to be offered pessimistically, in that I hope it can serve as a message of freedom to reframe how we all engage in leadership research and assessment. Constraints force us to prioritize. Please accept this as permission to prioritize. Prioritizing what we want to know within any specific research or assessment project may be based on several key factors including methods training and expertise and availability of time and resources. What seems to become evident to me in this type of scholarly environment, is that we need to pay careful attention to how we align our worldviews, research questions, and research methods. This alignment allows for clarity of purpose and intent.

Our research and assessments become more transparent because we are aware of and can share limitations associated with any specific project. These are the tenets of scholarship that can be shared to generate knowledge, whether focusing on leadership research, leadership assessment, or components of both.

## REFERENCES

- Alvesson, M., & Spicer, A. (2012). Critical leadership studies: The case for critical performativity. *Human Relations*, 65(3), 367–390. <https://doi.org/10.1177/0018726711430555>
- Brachle, B., McElravy, L. J., Matkin, G. S., & Hastings, L. J. (2021). Preparing leadership scholars in Ph.D. programs: A review of research methodology training. *Journal of Leadership Education*, 20(3), 108–122. <https://doi.org/10.12806/V20/I3/R6>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.
- Dawidowicz, P. (2020). Phenomenology. In G. J. Burkholder, K. A. Cox, L. M. Crawford, & J. H. Hitchcock (Eds.), *Research design and methods: An applied guide for the scholar-practitioner* (pp. 217–229). Sage.
- Day, D. V., & Harrison, M. M. (2007). A multilevel, identity-based approach to leadership development. *Human Resource Management Review*, 17(4), 360–373. <https://doi.org/10.1016/j.hrmmr.2007.08.007>
- Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine, & A. Plant (Eds.), *Advances in experimental social psychology* (Vol. 47, pp. 1–53). Academic Press. <https://doi.org/10.1016/B978-0-12-407236-7.00001-2>
- McGregor, S. (2018). *Understanding and evaluating research*. Sage. <https://doi.org/10.4135/9781071802656>
- Ospina, S., & Foldy, E. (2009). A critical review of race and ethnicity in the leadership literature: Surfacing context, power and the collective dimensions of leadership. *The Leadership Quarterly*, 20(6), 876–896. <https://doi.org/10.1016/j.leaqua.2009.09.005>
- Uhl-Bien, M., & Arena, M. (2017). Complexity leadership: Enabling people and organizations for adaptability. *Organizational Dynamics*, 46(1), 9–20. <https://doi.org/10.1016/j.orgdyn.2016.12.001>
- van Knippenberg, D., & Sitkin, S. B. (2013). A critical assessment of charismatic—transformational leadership research: Back to the drawing board? *Annals*, 7, 1–60. <https://doi.org/10.5465/19416520.2013.759433>

## AUTHOR BIOGRAPHY

**L.J. McElravy** is an Associate Professor of Leadership in the Department of Agricultural Leadership, Education, & Communications, and Associate Dean for Professional Development in the Office of Graduate Studies at the University of Nebraska – Lincoln. L.J. is the graduate program coordinator for the leadership education masters and leadership studies doctorate degrees. L.J.'s research focuses on leadership education and leadership development from adolescence through adulthood.

**How to cite this article:** McElravy, L. J. (2022). Form follows function: Research and assessment design for leadership learning. In D. M. Rosch & L. J. Hastings (Eds.). *New Directions for Student Leadership: No. 175. Research and assessment methods for leadership development in practice*, pp. 31–40. Wiley. <https://doi.org/10.1002/yd.20517>